DemARS 2020

University of Colombo

International Research Conference

POPULATION AND SUSTAINABLE DEVELOPMENT

PROCEEDINGS

Department of Demography
Faculty of Arts
University of Colombo
Sri Lanka

November 24, 2020

First International Research Conference

Population and Sustainable Development

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University of Colombo

Vision

To be a center of global excellence in education, research and stakeholder engagement to enrich human potential for the betterment of society

Mission

To discover and disseminate knowledge; enhance innovation; and promote a culture of broad inquiry throughout and beyond the university through engagement and collaboration with industry and community

Faculty of Arts

Vision

To be a center of excellence in Creative thinking, Teaching, Research and Community outreach in the South Asian Region

Mission

To promote collectively scholarship, critical inquiry, competencies and skills in the Social Sciences and Humanities in keeping with the highest academic and ethical standards in teaching, research, training and evaluation

Department of Demography

Vision

The Department of Demography strives to be a leading regional centre of excellence in teaching, research and scholarship in demography

Mission

Our mission is to promote teaching, learning, research and scholarship in Demography and Population related issues affecting the country as well as the region and share such knowledge through collaborative research and training programmes within and outside the country

Message from the Vice-Chancellor, University of Colombo

It is with great pleasure I write this message to the First International Research Conference of the Department of Demography, where I firmly believe that postgraduate level training and research is very much essential to improve and sustain the quality of university education that is at both undergraduate as well as postgraduate level. In this respect, the Department of Demography's effort in conducting an international Conference for the first time is admirable.

Upholding the wellbeing of present and future generations can be regarded as the most essential target of sustainable development process. In this context, sustained social development which includes the reduction of poverty, growth in living standards and progress in wellbeing, does not have the potential to progress without linking into economic development which increases the quantity and quality of the production of goods and services. Similarly, the social and economic development cannot be enhanced without considering environmental changes because the production processes involves a transformation as well as degradation and depletion of natural resources. Social, economic and environmental processes are strongly entwined with population dynamics and hence proper understanding of the population dynamics in Sri Lanka is central to any prospective

development agenda. Sri Lanka is currently experiencing major population dynamics including significant transformations in its age structure associated with 'youth bulge' as well as elderly age category. These novel population trends create many developmental challenges as well as opportunities that have crucial implications for social, economic and environmental development. These emerging population trends shape and are shaped by public policy in the form of policies and related programmes (employment creation, poverty alleviation, social protection and pensions, health, education, housing, sanitation, water, food and energy) that are being used to balance population change, economic growth, social transformation and environmental sustainability. However, the accomplishment and sustainability of development strategies need that Sri Lanka pro-actively addresses and not just simply respond to varying population dynamics. Demography alone cannot be regarded as destiny, but it is very much essential that Sri Lanka understands about the changing nature of population dynamics over the next decades, and whether they become developmental challenges or help facilitate their resolution. Most importantly, all these depend on whether effective policies employed are necessarily rights-based, evidence informed and gender-responsive.

I sincerely expect that this year's Demography Department's Research Conference has a very important role to play because the theme 'Population and Sustainable Development" is a timely topic. I am confident that the papers that will be presented in this conference will be very useful to the policy planners who will be making decision on sustainable development related matters in Sri Lanka.

Senior Professor Chandrika Wijeyaratne
Vice Chancellor, University of Colombo

Message from the Dean, Faculty of Arts

It is with great pleasure that I extend my warmest wishes for the First International Research Conference 2020 organized by the Department of Demography, Faculty of Arts, University of Colombo. The conference will provide an opportunity for academics and postgraduate students to share their research experience and to exchange their views on "Population and Sustainable Development." This year it is more important that the department has decided to conduct its first International Research Conference to broaden the knowledge dissemination. The research conference of the Department of Demography is an important event because it brings into public view the current research being conducted by academic staff of the Department and promises to facilitate the exchange of ideas and the establishment of inter-disciplinary links and dialogue both nationally and internationally. The evidence-based research would definitely contribute to address current issues related to population and sustainable development in Sri Lanka. I am sure this conference will be of immense benefit to both research contributors and participants all over the world that would create an ideal forum to discuss and debate research outcomes in the field of Demography and Population Studies. The conference would also

undoubtedly open up a forum for academics and researchers from Demography and interrelated disciplines to exchange scholarly ideas and to explore new possibilities for future research. Finally, I would like to thank everyone who have supported to organize the conference this year and I offer my congratulations to the presenters and wish them the very best in their future endeavors.

Senior Professor Premakumara de Silva,
Chair Professor of Sociology
Dean, Faculty of Arts, University of Colombo

Message from the Head, Department of Demography

It is with great honour I welcome you all to the inaugural session and scientific sessions of the First International Research Conference organized by the Department of Demography. This is the inaugural international edition of the Seventh Annual Research Symposium of the Department of Demography (DemARS). Due to the COVID 19 pandemic, we are unable to organize a physical event, but we have organized this event via the virtual platform with the participation of a large national and international gathering. The theme of this conference is Population and Sustainable Development which is a very timely global topic. Countries have already started taking very important steps in achieving sustainable development goals by 2030. In this regard, Sri Lanka is also not an exception. We all know that there is a strong association between population and sustainable development, which is the theme of this conference. It is very clear that population dynamics have a significant influence on sustainable development; efforts to promote sustainable development that do not address population dynamics will continue to fail. We must recognize that population dynamics are not destiny. Change is possible through a set of policies that respect human rights and freedoms and contribute to a reduction in fertility: notably

access to sexual and reproductive health care, education beyond the primary level, and the empowerment of women.

The main objective of this event is to create an international platform to open a unique opportunity for our local as well as international colleagues for high quality scholarly discussion on a variety of topics related to population and sustainable development. I am extremely happy to announce today that this is the first ever International Research Conference organized by the Department of Demography, University of Colombo in order to leap forward to integrating Sri Lankan demography into world demography. I also need to mention that the Department of demography is the only academic institution in Sri Lanka which directly works on population related issues and produces graduates with highly developed skills to deal with development related issues in the country. I am also proud to say that we possess a well-qualified internationally recognized academic staff. I am delighted at the enthusiasm shown by our colleagues in sending a significant number of extended abstracts, approximately 55, for this conference. All the papers were peer-reviewed to maintain a high standard. Therefore, I would like to express my gratitude to our reviewers for the tedious task taken to review the extended abstracts.

On this memorable day, first and foremost I would like to warmly welcome Senior Professor Chandrika N Wijerathne Vice Chancellor, University of Colombo who has always supported our academic accomplishments. I am very happy to welcome our keynote speaker Emeritus Professor Peter MC Donald of the School of Demography, Australian National University and the Research fellow at the Melbourne University. He is a giant in the field of demography, and was a former President of the International Union of Scientific Study of Population which is commonly known as IUSSP. I am very grateful to you for accepting our invitation despite your busy schedule. I would like to warmly welcome Miss Ritsu Naken, Country Representative, UNFPA for her kindness to accept our invitation to be the Guest of Honor at this event. The Department of Demography has a long association with UNFPA from its inception from 1973. The UNFPA has been one of our biggest

strengths in every aspect. I am also delighted and grateful to mention at this point that this event is also sponsored by the UNFPA. I also warmly welcome Senior Professor Premakumara de Silva Dean of the Faculty of Arts and thank him for the support and encouragement given to us to make this event a great success.

I warmly welcome our Emeritus Professors of the Department, Professor Lakshman Dissanayake, Former Vice Chancellor of the University of Colombo, Professor KAP Siddhisena, Professor Indralal DeSilva and Professor Swarna Ukwatta for their active involvement in this conference. Together, I would like to welcome my departmental colleagues who supported me throughout the preparatory stage of this conference.

I sincerely welcome our audience, composing national and international academics, students, population scientists, administrators, governmental and non-governmental organizations for being with us to add much weight and colour to this historic event. I am certain that the research findings and views that you will be sharing with us will certainly influence our understanding of the relationship between population and sustainable development from different perspectives.

Similarly, I would like to acknowledge the commitment shown by Mr. Hansa Jayarathne and Ms. Nethra Senadhi for their excellent coordination efforts in organizing this event. I also would like to appreciate Mr. Dakshina Dissanayake and his team for the technical advice and assistance. I also appreciate the support given by all the academic and support staff of the Department of Demography in particular and, the University of Colombo in general, who have worked with me and supported me in making this event a success. Finally, I welcome all of you once again to this important event and congratulate all the paper presenters and wish you all the best for your future accomplishments.

Stay Healthy and Safe!

Dr Manori K Weeratunga
Head & Senior Lecturer
Conference Chair
Department of Demography, Faculty of Arts, University of Colombo,
Sri Lanka

Population and Sustainable Development

The pursuit of development is the pursuit for a better life and the ambition to improve human wellbeing, and in this road to achieve sustainable development, changes in population size, structure and spatial distribution have a profound impact. These changing population structures affect the socio-economic dynamics of the country and will play a pivotal role as countries race to recover from the COVID-19 pandemic, shaping each nation's demographic dividends.

Sri Lanka is currently experiencing major population dynamics including significant transformations in its age structure associated with the 'youth bulge' and 'ageing population'. The transition to an ageing population is taking place at a far more rapid pace than in many other countries that are at a similar level of development. These changes create many challenges as well as opportunities for sustainable development. In this context, a dividend is possible through the creation of greater assets, productive conditions, appropriate financial and social institutions and social protection systems, and can accelerate progress towards the achievement of the 2030 Agenda.

Reaping the benefits of this dividend requires evidence-based policy making that takes account of population dynamics. This will allow investments to be channelled in the right path. For example, in a country where women make up 52 percent of the total population – and a majority of the older population - greater resources must be allocated towards women's access to education, employment, social protection, health and wellbeing, and the advancement of sexual and reproductive health and reproductive rights.

Progress will however be constrained if the population is under-prepared. As recognized in the ICPD Programme of Action, Chapter II, Principle 6 (UN, 1994), *"Sustainable development as a means to ensure human wellbeing, equitably shared by all people today and in the future, requires that the interrelationships between population, resources, the environment and development should be fully recognized, appropriately managed and brought into harmonious, dynamic balance. To achieve sustainable development and a higher quality of life for all people, States should…. promote appropriate policies, including population related policies, in order to meet the needs of current generations without compromising the ability of future generations to meet their own needs."*

This First International Research Conference of the Department of Demography therefore comes at a crucial time amidst of the pandemic when there is a need for increased dialogues on the interlinkages between population and sustainable development. COVID-19 has made us realize the need for a holistic systems approach and to re-look at the way we design and plan development more than ever before. Leaving some parts of the population behind is not an option – none of us are safe until everyone is safe. While the pandemic has posed a great deal of challenges, it has also given us an unprecedented opportunity to challenge our old ways, and imagine an equal, sustainable and just world as a real possibility and a moral imperative.

UNFPA is therefore pleased to be supporting this Symposium to call for evidence-based policies and programmes that can integrate population dynamics for a better future for all. Such policies must be designed and implemented to expand access to sexual and reproductive health care services, quality education beyond primary level, and the potential gains from the demographic dividend, and support this pursuit of sustainable development for all.

Ms Ritsu Nacken, United Nations Population Fund (UNFPA) Representative of Sri Lanka and Country Director, Maldives

Introduction to the Keynote Speaker

Peter McDonald is Emeritus Professor of Demography of the Australian National University and an Honorary Professor of the University of Melbourne. In 2008, McDonald was awarded an Order of Australia. He is a Chief Investigator of the Australian Research Council's Centre of Excellence in Population Ageing Research (CEPAR). He was President of the International Union for the Scientific Study of Population (IUSSP) for the years, 2010-13.

In 2015, he received the Irene B. Taeuber Award from the Population Association of America, only the 4th non-American to receive this award. This award is given in recognition of an unusually original or important contribution to the scientific study of population or an accumulated record of exceptionally sound and innovative research.

Peter Mc Donald is well known for his theoretical and policy-oriented research. Especially his work on fertility and migration, is widely cited, and frequently provides advice to governments of several countries.

It is a great honour for the Department of Demography to have Professor Peter McDonad, a giant in the field of Demography to address its first international research conference DemARS 2020 as the Keynote speaker.

Keynote Abstract

Economic Implications of Alternative Pathways of Fertility in Asian Countries

Peter McDonald and Meimanat Hosseini-Chavoshi

Using National Transfer Accounts for many countries, Lee and Mason et al. (2014) examined the impact of varying levels of fertility on government budgets and standards of living. They found that very low fertility (under 1.5 births per woman) undermines living standards but moderately low fertility (1.6-2.0 births per woman) favours broader material standard of living. Their analysis was static and cross-sectional, comparing countries with different levels of fertility in 2005-10.

As an extension of this idea, this presentation takes a more dynamic approach by examining changes across projected time asking the questions:

> Should governments in Asian countries where the Total Fertility Rate is approaching 2.0 births per woman attempt to stabilise fertility around replacement or let (encourage) fertility to fall to the very low levels that have been experienced in the Asian Tiger countries?
>
> More specifically, should these countries take the immediate benefits of a larger demographic dividend due to very low fertility or should they be concerned more about the future prospect of population ageing?

Lee, R. and Mason, A. et al. 2014. 'Is low fertility really a problem? Population ageing, dependency, and consumption', Science 346(6206): 229-234.

First International Research Conference - *DemARS2020*

PROGRAMME

***Time 11.15 am – 12.15 pm* (5.45 am UTC – 6.45 am UTC)**	**Population Ageing and Elderly Care** **Session: Morning A** *Session Chair: Emeritus Professor Lakshman Dissanayake*
11.15 – 11.25	A note on living arrangements in Australia during and immediately after COVID 19 G. Dasvarma
11.25-11.35	The old-age income profile of the elderly in Sri Lanka R.L.C.Shyama & T. de Silva
11.35-11.45	The wellbeing of elderly people: Analysis of elders living in Walasmulla MOH area A.S Samarakoon, M.A.S.C. Samarakoon & M.T. Samarakoon
11.45-11.55	Attitudes towards physical activities among ageing population: A special reference to Kirillawala – West Grama Niladhari Division L.N. Liyanage
11.55-12.05	Characteristics of aging population in Sri Lanka and its economic implications A. N. Fernando & Y. K. N. Kandewatta
12.05-12.15	Discussion

***Time 11.15 am – 12.15 pm* (5.45 am UTC – 6.45 am UTC)**	**Good Health and Well- being** **Session: Morning B** *Session Chair: Professor E L Sunethra J Perera*
11.15 – 11.25	Human behavioral and psychological changes during quarantine curfew: A case study of COVID-19 H.A.C.D. Senavirathna

11.25-11.35	Impact of chronic kidney disease of unknown etiology (CKDu) on patients: Based on CKDu patients of Rajanganaya Track 11 Hospital D.M.M.N. Bandara
11.35-11.45	Non communicable diseases among male inmates and associated factors: A case study of inmates between 30-50 years at Mahara Prison H. P. W. Dilshan & K.K.H.P. Nisansala
11.45-11.55	Identification of causes and effects of drug usage in Kuchchaveli DSD of Trincomalee District L. Yugarajah & F. Ruzaik
11.55-12.05	Prevalence of menopausal symptoms: Issues and challenges faced by the post-menopausal women live in urban underserved settlements, Colombo S.A.Y.N. Subasinghe
12.05-12.15	Discussion

Time 11.15 am – 12.15 pm (5.45 am UTC – 6.45 am UTC)	**Fertility, Reproductive Health and Gender Equality** **Session: Morning C** *Session Chair: Dr. Shiromi Maduwage*
11.15 – 11.25	Factors affecting spacing fertility behaviour among the fishing community: A case study of the Chilaw Divisional Secretariat Division in Sri Lanka V.P. N. Senadhi
11.25-11.35	A sociological study on the discrimination experienced by transgender individuals when accessing public health services M. K. Darsha
11.35-11.45	Knowledge on contraceptive-use of conceived rural women in the second reproductive age span (35-49 age group): A case study of Kuruwita Medical Officer of Health area in Ratnapura District H.A.C. Darshanee
11.45-11.55	The impact of sexual orientation on day to day life among sexual minorities: Issues and challenges faced by gay men in Sri Lanka H.V.V.M.P. Karunarathne
11.55-12.05	Issues related to parent-adolescent communication on sexual and reproductive health I.S. Samarakoon
12.05-12.15	Discussion

Time 11.15 am – 12.15 pm (5.45 am UTC – 6.45 am UTC)	**Population, Disasters and Sustainable Environment** **Session: Morning D** *Session Chair: Professor Suresh Babu*
11.15 – 11.25	An application of the DPSIR framework in assessing household carbon emission K.L.W.I.Gunathilake & C.M.K.N.K.Chandrasekara
11.25- 11.35	Post flood disaster management related issues: A case study of Bulathsinhala Divisional Secretariat Division K. K. H. P. Nisansala & K. Madusanka
11.35- 11.45	Utilization of human population as a resource in flood disaster management of Kolonnawa Divisional Secretariat Division K.B.I.S.Ranwella
11.45- 11.55	Discussion

Time **11.15 am – 12.15 pm (5.45 am UTC – 6.45 am UTC)**	**Migration, Urbanization and Sustainable Communities** **Session: Morning E** *Session Chair: Senior Professor P. Hewage*
11.15 – 11.25	Exploring the trends and pattern of illegal migration in Sri Lanka: Challenges for sustainable development goals Manori K. Weeratunge
11.25-11.35	History of Afghan immigration to Ceylon: From 1800 to 1940 T.M. Zameer- Careem
11.35-11.45	The Malay community of Sri Lanka: A preliminary analysis of the decline in the population between 1981 and 2012 K. Boyagoda & R. Rassool
11.45-11.55	Patterns and characteristics of youth migration for employment from the Estate Sector, Sri Lanka M.G.D.I.D.Wijerathne
11.55- 12.05	Discussion

Time 12.30 pm – 1.30 pm (7.00 am UTC – 8.00 am UTC)	**Population Ageing and Elderly Care** **Session: Afternoon A** *Session Chair: Dr. Manori K. Weeratunga*
12.30 – 12.40	Living arrangement and wellbeing of elderly females in Kerala, India A. Anish
12.40-12.50	A sociological study on Alzheimer's disease related stigma in society and its effect on family members caring for the elderly person with the disease H.M.W. Fernando
12.50-01.00	Hypertension and behavioural risk factors of the elderly population: A self-reported case control study of elders in Colombo district A.P.H.S. Jayarathne
01.00-01.10	Identifying the Socio-economic challenges Faced by Elderly Women Workers in the Cleaning Service: A case study related to the Faculty of Arts, University of Colombo M.A.D. Madhusanka
01.10-01.20	Causes of poverty among elderly people living alone T.H.A.S. De Silva
01.20-01.30	Discussion

Time 12.30 pm – 1.30 pm (7.00 am UTC – 8.00 am UTC)	**Morbidity, Mortality and Disability** **Session: Afternoon B** *Session Chair: Emeritus Professor Indralal De Silva*
12.30 – 12.40	Role played by special educational units in public schools in socializing differently abled students: A case study of K/D.S. Senanayake College, Kandy S.A.M.K.P. Abeykoon
12.40-12.50	Prevalence of mental disorder cases in Sri Lanka W.R.V.W. Anuradhi

12.50-01.00	The war against smallpox: The impact of variolation and vaccination on smallpox mortality in nineteenth century Ceylon T.M. Zameer- Careem
01.00-01.10	Sex differentials in adult life expectancy and mortality in Sri Lanka W.P.N.L. Sumathipala
01.10-01.20	Why low birth weight matters in the case of Sri Lanka: Evidence from Demographic and Health Survey-2016 G. Abeywickrama
01.20-01.30	Discussion

Time **Time** **12.30 pm – 1.30 pm (7.00 am UTC – 8.00 am UTC)**	**Education and Labour Force Participation** **Session: Afternoon C** *Session Chair: Dr. Kumudhika Boyagoda*
12.30 – 12.40	The (In) Adequacy of public expenditure on tertiary education in Sri Lanka G. K. D. Indeewari
12.40-12.50	The influence of gender stereotypes on career choices of undergraduates of state universities in Sri Lanka I. Randhuli & I. Ijlal
12.50-01.00	Study on the push and pull motivation of direct labour-force participation in the Sri Lankan tourism industry P.B.S.N. Kumara
01.00-01.10	Low female labour force participation in Sri Lanka D.S.P.A.K. de Silva
01.10-01.20	Gender wage gap in the urban labor market of Pakistan M. Umair & L. Naz
01.20-01.30	Impact of child care and housework on employed women during the work from home situation in COVID-19 outbreak: Literature-based study A.S. Manamendra
01.30-01.40	Discussion

Time **Time 12.30 pm – 1.30 pm** **(7.00 am UTC – 8.00 am UTC)**	**Current Challenges for Sustainable Development** **Session: Afternoon D** *Session Chair: Professor Gouranga Dasvarma*
12.30 – 12.40	National Transfer Account in Maldives – The future of work in Maldives F. Riyaza & M. Abdrigo
12.40-12.50	Modelling Covid-19 pandemic in Sri Lanka L. Dissanayake
12.50-01.00	Geo-spatiotemporal data integration platform for social good and global citizenship: A case study on identify environmental impacts on public health L. Liyanage
01.00-01.10	Attitudes toward later life relationship and older adults' health and well-being: A national survey study from the Philippines Ju Young Kim, Hanzhang Xu, Grace Cruz, Yasuhiko Saito, Truls Ostbye
01.10-01.20	Discussion

Content

List of Abbreviations

AD	Alzheimer's Disease
ANOVA	Analysis of Variance
AWS	Automatic Weather Stations
BDS	Balangoda Divisional Secretariat
BMI	Body Mass Index
CFR	Crude Fertility Rates
CI	Concentration Index value
CKDu	Chronic Kidney Disease of Unknown
COVID 19	Coronavirus Disease of 2019
DCS	Department of Census and Statistics
DHS	Demographic and Health Survey
DMC	Disaster Management Center
DPSIR	The Driver-Pressure-State-Impact-Response
DS	Divisional Secretariat
DSD	District Secretariat Division
EDB	Export Development Board
EPF	Employees Provident Fund
FLFP	Female Labour Force Participation
FTM	Female to male transgender individuals
FUTA	The Federation of University Teachers' Association
GDI	Gender Development Index
GDP	Gross Domestic Product
GFC	Global Financial Crisis
GIS	Geographic Information System
GNDs	Grama Niladhari Divisions
HIES	Household Income and Expenditure Survey
HIV	Human Immunodeficiency Virus
HDR	Human Development Report
HRT	Hormone Replacement Therapy
IBM	International Business Machines
IDW	Inverse Distance Weighted
IFA	Iron and Folic Acid supplements
IT	Information Technology
ITL	Information Technology Laboratories
LBW	Low Birth Weight
LGBTQ	Lesbian, Gay, Bisexual, Transgender, Queer
LSAHP	Longitudinal Study of Ageing and Health in the Philippines
MCAR	Missing Completely at Random
MERS	Middle East Respiratory Syndrome
MOH	Medical Officer of Health
$MTCO_2e$	Metric Tons of Carbon Dioxide Equivalent
MTF	Male to female transgender individuals
NCDs	Non Communicable Diseases

NHRDC	National Human Resources Development Council
NTA	National Transfer Account
OR	Odds Ratios
PHEIC	Public Health Emergency of International Concern
PPP	Purchasing Power Parity
PPPs	Public-Private Partnerships
PSOA	Philippine Study on Ageing
R&D	Research and Development
SARS	Severe Acute Respiratory Syndrome
SDGs	Sustainable Development Goals
SLDHS	Sri Lanka Demographic and Health Survey
SLTDA	Sri Lanka Tourism Development
SPSS	Statistical Package for the Social Sciences
SRH	Sexual and Reproductive Health
STD	Sexually Transmitted Diseases
SUBI	Subjective Well Being Inventory
SWOT	Strengths – Weaknesses – Opportunities – Threats
TFR	Total Fertility Rate
UNDP	United Nations Development Programme
UNESCO	The United Nations Educational, Scientific and Cultural Organization
UNWTO	World Tourism Organization
WHO	World Health Organization

Role played by special educational units in public schools in socializing differently abled students: A case study of K/D.S. Senanayake College, Kandy

S.A.M.K.P. Abeykoon[1]

Introduction

Every child is special in their own way, and among them, there can be children born with special needs. Rather than categorizing them as children born with mental and physical disorders and disabilities, it is essential to identify them as differently abled children. These children may have different kind of impairments or multiple disabilities. Therefore, it is necessary to recognise their special needs and develop their abilities. International Day of Persons with Disabilities is celebrated on 3rd December every year to raise awareness of the general public on the issues, rights, and well-being of these persons (United Nation, 2018).

Apart from family, as a social organization, school has a major role in protecting the rights of the differently abled students in a society. Special education units within public schools, private sector special education schools, vocational training centers and development centers maintained by non-governmental organizations play a major role in providing early intervention services and socializing the differently abled students. Creating a student-friendly environment while making opportunities to integrate and interact with other students is very important for cognitive development of these students.

Research objective

The objective of this study is to analyse the role of special education units within public schools as a place which socializes and provides integration for the differently abled students.

Methodology

In order to analyse the role of special education units within public schools in socializing differently abled students, this study was conducted in the special education unit of K/D.S. Senanayake College, Kandy, Sri Lanka. Decision for the selection of this school was based on the fact that it is the oldest special education unit in the Kandy education zone and it currently facilitates many students with several types of disabilities. Primary data was gathered through field observations and interviews with six teachers, parents and some students during September 2020. Quantitative and qualitative data analysis was conducted using twenty-seven

[1] Department of Geography, University of Peradeniya, Sri Lanka

students' valuation reports provided by the sectional head of the unit to understand the activities, progress, and facilities provided to differently abled students. Thematic analysis was done at the final stage using the collected data to bring out the existing condition of the special education unit and how it provides integration for differently abled students and the process of socialization with other students.

Results and discussions

Situated in the Kandy education zone, D.S. Senanayake College is few kilometres away from the heart of Kandy city within the Gangawata Koralaya Divisional Secretariat District, Kandy District, Central Province, Sri Lanka. This school was established in 1920 and celebrated its Centenary in 2020. The special education unit of this school is the oldest special education unit in the Kandy education zone and it's been more than 30 years since it was established. Currently, there are 27 differently abled students in the unit and 6 teachers are providing their services for these students. There are 9 students with mental retardation, 5 with down's syndrome, 5 with autism, 2 with hearing impairments, 2 with visual impairments, 2 students with multiple disabilities, 1 student with speech impairments, and another student with catalepsy among the community who are facilitated by this special education unit.

Main learning activities of this place is solely based on the personal development level of each student. Teachers are paying extra attention to each child as they need different kinds of learning materials. These activities range from basics such as tearing up papers, rolling papers, working with flour and clay to simple writing and reading. Youngest students in this special education unit who are around the age of five and above are first exposed to activities with tearing and rolling papers. According to the teachers, few students have progressed in doing this activity within one or two years, but for some, it has taken more than ten years to grasp these activities. Out of five students with autism, two shows a great competency in writing and reading faster than other students. One of the students with visual impairments has improved writing letters and words using the braille slate while the other student is currently exposed to preliminary manipulative skills development. Educational materials and equipment required for them are provided by teachers themselves or by parents. Sports activities available for these students apart from the mainstream ones include Bocce and Flying disk. Students have participated for zonal, provincial and all-island events for athletics in Special Education Sports event. They are participating for events in annual inter-house sports meet too. Even though they have sports equipment, adequate space as a playground is not available for them. Differently abled students of this unit are also engaged in recreational and aesthetic activities such as dancing, music, and art with the guidance of their teachers. Every day after the lunch break, students participate for music session where they sing and

dance along with their friends and teachers. This helps to ease the students and relax them from their academic environment. Problems faced by both teachers and students include lack of space in the learning environment because many students with different needs are put together into a single classroom within the school while an adequate playground is also not available for them to play. School itself, teachers and parents have to support the special needs of these children as satisfactory facilities are not provided by the government except uniforms and textbooks.

When considering the importance of this special education unit, it is notable that the extent of interaction which has been built between the ordinary students and the differently abled students. Unlike students in special education schools and development centers, differently abled students of this school are regularly networking with other students within school hours. The place in which the special education unit is located also greatly helps these students to mingle with other school children. Since socializing of the differently abled is an important task, this particular special education unit has been succeeded in integrating students. In the society young ordinary children show some kind of fear and less approach towards the differently abled. But here it is evident that constant interaction, communication, and exposure has enabled them to reach these students in a friendly manner. The inclusion of the special unit within the premises of other classrooms has given many positive outcomes for both parties.

Integration of developed students and transferring them into normal classes is done by the special education unit. In this year, one student with down's syndrome, one with autism, one with mental retardation, one with hearing impairments, and two visually impaired students have been transferred into normal classes to study with others. These differently abled students are continuously supported by the teachers in the unit even after the integration process. It is important to mention that the students in the special education units receive more attention and mentoring for their development rather than differently abled students in the normal classes. Other major tasks of this unit include assisting the differently abled students in normal classes, development of skills, guiding for vocational training, socializing, and increasing parental involvement in the development of students etc. So, the concept of special education units within public schools and its role for the welfare of differently abled students can be seen by the above-mentioned details of the academic environment of the school.

Conclusion

There are different kinds of people in the society. Among them, there are children born with special needs and it is the duty of all to create an equal society for them.

The role of the special education unit in developing the skills and socializing the differently abled students is brought out through this study. The concept of place is very important as it becomes the second home for the students away from their homes. The potential of such a place to develop skills, dignity, protect rights, socialize, and set examples to the others is very high. Many problems are faced by differently abled people as they enter the society and it can be reduced through this kind of early interaction and integration within the academic premises by including special education units to every school. It is clear that, as a place which facilitates differently abled students, special education units in the public-school system provides great benefits and opportunities for the students in socialization and integration.

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Why low birth weight matters in the case of Sri Lanka: Evidence from Demographic and Health Survey-2016

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Introduction

Low birth weight (LBW) defined as < 2500 g by WHO, remains a significant health concern at the global level (WHO, 2011, 2014a). LBW can be caused for both long term and short term adverse consequences, including higher probabilities of infection, malnutrition and handicapped conditions during childhood (including cerebral palsy), mental deficiencies and problems related to behaviour and learning during childhood (Hack, Klein, and Taylor, 1995; Khan, Nasrullah, and Jaleel, 2016; Kramer, 1987; Negrato and Gomes, 2013). Many studies have found that low birth weight is not merely a medical concern but it is s social problem related to inequality.

Despite having remarkable achievement in health indicators, Sri Lanka is incapable of showing a remarkable achievement over the years (WHO, 2014b). Low birth weight is such a stagnated indicator over the years. Even though LBW has dropped significantly before the twentieth century, the indicator has remained relatively constant at the same levels observed during the last decades from 2000-2016 (Ministry of Health Nutrition & Indigenous Medicine, 2017). For instance, it was reported as 16 percent in the recent DHS-2016, which was stood at the same level even before 10 years by DHS 2006 (Department of Census and Statistics, 2016).

LBW in Sri Lanka is at a relatively high level, manifested as a multifaceted public health problem with long-term impact on health outcomes during the neonatal, infancy and childhood (Ministry of Health Nutrition & Indigenous Medicine, 2015). Previous studies on low birth weight in Sri Lanka have not properly spell out the inequalities in low birth weight and the linkage between poverty and low birth weight in the post-war setting in Sri Lanka. Further, these studies not yet attempted to investigate the determinates that are leading to the disproportional burden of low birth by their income levels.

Research objectives

The objectives of the study are to understand the determinants of low birth weight and to examine socioeconomic inequalities on low birth weight disaggregated at different socio-economic groups.

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Methodology

This study obtained the data from the 2016-2017 DHS in Sri Lanka. Low birth weight data collected from children of 7,913 who weighted after the delivery during the 5 years preceding the survey. This study defined low birth weight as less than and equal to 2500 grams. Bi-variate, multivariate and multilevel logistic regression techniques have been applied in this study.

Results and discussion

The low birth weight was recorded as 16.89 percent in this study. The mean birth weight was reported as 2,917g among these children who recorded their weight. Prevalence of low birth weight was high among mothers with low BMI levels and approximately 60 percent of low birth weight observed among mothers who had a short gestational period (less than 9 months) and female babies were more likely than male babies to be born with LBW. When the socioeconomic characteristics were observed, majority of the mothers was only completed secondary education level and it was clearly seen that low birth weight babies mostly delivered by mothers who neither attended to school nor completed primary education. Also, 21.4 percent of mothers in the lowest wealth quintile had the highest number of low birth weight babies. Indian Tamils were more likely to have had LBW babies than other ethnic groups. Estate residents have the highest low birth weight compared to other residents at 28.4 percent. LBW was less likely in the Northern region but more likely to have in Sabaragamuwa regions. However, maternal age, employment status of mother (p=0.196), ate Thriposha (Food supplementary provided by the government during pregnancy) (P =0.212) were not significantly associated with the LBW($P > 0.05$) which were removed from next models.

Results from the multiple logistic regression analysis confirmed that odds ratios (OR) of following factors were significantly associated with LBW: maternal BMI, height, birth interval, number of antenatal clinic visits, consumption of IFA (iron and folic acid supplements) child sex, mother's education level, household wealth index, Indian Tamils in estate sector and provinces. Mothers with low BMI level had higher odds of having babies with LBW compared with those with a normal BMI (18.5-24.5) (OR = 1.52, 95% CI: 1.22-1.89). The odds of having LBW babies among mothers who did not consume IFA was 38 percent (AOR=1.38, CI: 0.95-1.99, $p < 0.001$) higher odds than the mothers who consumed IFA after controlling other factors. A girl baby was 40 percent more likely be of LBW (AOR = 1.42, CI: 1.22-1.65, $p < 0.000$) than was a boy baby. Further, mothers in the highest household quintile had lower odds of LBW compared with those in the lowest quintile (OR = 0.53, 95% CI: 0.39-0.72). Indian mothers in Estate sector had 1.65 times higher odds of having LBW babies than those belong to other ethnicities and urban and rural

sectors (OR = 1.65, 95% CI: 1.11–2.45). Finally, mothers in the Sabaragamuwa province had 1.45 higher odds of LBW babies compared to mothers in Western province (OR = 1.45, 95% CI: 1.10–1.90).

Measures of socio economic inequalities

Results of the concentration indices and curves

The results show a clear gradient in low birth weight, the concentration index value was -0.13 (95% CI (-0.15 - -0.10, p<0.001), which suggests low birth weight is more concentrated among the poorest households. We further analysed socioeconomic inequalities by different ethnic groups and districts. It was found that there are significant socioeconomic inequalities in low birth weight by different districts. For example, inequalities were more concentrated on poor people belong to the minor ethnic groups such as Indian Tamils (Concentration index value -0.585, CI:-0.651,-0.486) and people who reside in the Estate sector (Concentration index value -0.645, CI:-0.722,-0.379).

Conclusion

This study found that the education, ethnicity, residential sector, wealth status, maternal BMI and child characteristics such as sex, birth interval, sex were the significant factors for LBW in Sri Lanka. Even though LBW is influenced by numerous factors, the incidence of LBW could be reduced if these determinants are properly addressed in advance. Multi-faceted approaches including improvement in socio-economic indices, deliver better health care for the vulnerable population in the Estate sector and ethnic minorities would be another important intervention to reduce prevalence LBW in Sri Lanka.

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Living arrangement and wellbeing of elderly females in Kerala, India

A. Anish[1]

Introduction

Living arrangements of the elderly have changed significantly as a consequence of demographic as well as social and economic changes. Mortality levels, especially of women, have dropped sharply. The conventional living patterns among the elderly have undergone drastic changes following the reduction in fertility and an increase in life expectancy. The living arrangement is an important component of the analysis of the welfare of any specific group. Since the ability of elderly females to remain independent is less, they need the care and support of others in several respects. Taking care of elderly females usually refers to emotional support; on the other hand, the support given to them should encompass financial and material support as well. Emotional support is expected from the family or from intimate persons; financial and material support envisages a joint effort of the immediate family and the society.

Living arrangements are influenced by a variety of factors, including marital status, financial well-being, health status, and family size and structure, as well as cultural traditions (Haite and Waite, 2002). Living arrangements affect life satisfaction and health. One's living arrangements are dynamic; they change over the life course, adapting to changing life circumstances (Pailhe et.al., 2014). Subjective well-being is defined as an individual's cognitive evaluations of their lives and their emotional experience associated with their life circumstances. The subjective well-being of elders is determined by the synthesis of experience and recognition of life events. Both physical health and subjective well-being are important components of life quality and successful ageing (Steptoe et.al., 2014).

Kerala holds the largest proportion of the elderly population in India. The interplay of the emigration of the young adult population with the ongoing fertility and mortality transition has accelerated the demographic ageing in Kerala. One of the peculiarities of population in Kerala is the feminization of the population. In Kerala, the family has been the traditional social institution for the support and care of the elderly.

In Kerala, most elderly would prefer to remain in their home of choice as long as possible. Care in the home provided by a spouse or a child is the most common form of long-term care in the society. Most of the studies on ageing have concentrated on

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socio-economic and health aspects of ageing in India, particularly in Kerala and only limited studies have reported on the living arrangements of the elderly females. Thus, the living arrangement becomes an important constituent of the overall well-being of the elderly women and provides some indication of the level of actual support available to them.

Research objectives

The main objectives of the study can be identified as to examine the pattern of living arrangement of elderly females, to analyze the level of subjective well-being of elderly females and finally to examine the variation in the subjective well being by their living arrangements of the elderly females.

Methodology

This is a primary study and the data used for the study is from the survey on "Living Arrangements for Ageing Seniors and its Implications in Kerala" conducted by the Department of Demography, University of Kerala in 2018. The sample of the survey consists of 2500 elders comprising 1016 males and 1484 females. In this study, 1484 female elders are taken.

In measuring the components of living arrangements and subjective well-being, living arrangements is measured by five sub-categories: 1) living alone, 2) living with a spouse, 3) living with spouse and children, 4) living with children only, 5) living with others. The Subjective Well Being Inventory (SUBI) developed by Nagpal and Sell (1985) was used to measure the subjective wellbeing of the elderly females. The nine life satisfaction items contained in the original pool of 130 SUBI items were selected. Like the original SUBI, all responses were made on scales with 3 verbal response categories that indicated the extent to which the item was endorsed by the respondent ("Very much"(3), "To some extent" (2), "Not so much" (1). Responses to the nine global life satisfaction items were scored such that higher scores (3) indicated greater overall life satisfaction. The elderly females are classified into low, medium, and high categories based on the scores obtained from the SUBI scale.

In addition to univariate and bivariate analysis, to understand the variation in subjective well-being of elderly females with their living arrangements Analysis of Variance (ANOVA) has been done.

Results and discussion

In the sample, more than half of the females belonged to the (60-69) age group. The percentage of elders is very least in the age group 80+. In the case of religion, most of the elderly females belonged to the Hindu religion, followed by Christian and

Muslim. Caste wise analysis showed that more than half of the sample belonged to the OBC category, followed by the general and SC/ST category. Only 6 percent of female elders belonged to SC/ST category, which was very low. While considering the place of residence, more than half of the elders live in rural areas. In the case of educational attainment, about 43 percent of the sample population had high school and higher secondary level of education. In the sample studied, 6 percent were illiterate and only 9 percent of female elders were highly qualified. In the case of occupational status, even in the older ages, 27 percent of the female elders are working. Considered the marital status, 54 percent of the women belonged to the currently married group. About 38 percent are widows and 7 percent are single. Only a small percentage of elders were divorced or separated.

According to the living arrangements of elderly females, about 24 percent of the women are living with their spouses and children. In addition, 10 percent are living alone, 8 percent lived with others (including those who lived with relatives, servants, etc), 24 percent were co-residing with their spouse and 35 percent are living with their children only.

Indicators of subjective well-being are classified into three levels ranging from a low level of satisfaction to a high level which leads to positive subjective well-being. It is found that about 23 percent of the women have better well-being. Thirteen percent of women have a medium level of well-being. More than half of the respondents have a very low subjective well-being.

When examining the association between subjective wellbeing and living arrangement it was found that female elders staying with the spouse are found to have better wellbeing. Well-being is found to be low for those who are staying with children, with others, and alone.

Results of ANOVA show that the pattern of living arrangements produces variations on the subjective well-being of elderly females. The mean values of subjective well-being by living arrangements indicate that women living with a spouse have better well-being when compared to other categories of living arrangements.

Conclusion

The present study reveals that the patterns of living arrangements exert influence on the subjective well-being of elderly females. Living with a spouse at later ages is found to be a positive factor in promoting the wellbeing of elders. Due to higher life expectancy and longer widowhood which poses greater dissatisfaction in life among women, they are more vulnerable than men. The study implies that women living

with spouses have better subjective well-being. Living with others may only have a protective effect but it does not promote positive well-being.

Due to the changes in the household structures, extended families are diminishing. For this reason, unmarried women, widows, and older women without children have no support and nowhere to live if the extended family decided not to take them in. There are also concerns related to young adult migration to urban areas, return migration of adults after extended periods of employment in other countries. Long-term care for older people has become a key issue in Kerala. The elderly females feel lonely because they experience the loss of their loved ones or partner resulting in social exclusion. The family can give the appropriate motivations to elderly females to remain independent and active in everyday life. The proportion of women living alone has increased substantially with increasing age. Living alone may increase the risk for loneliness, not all elderly females who live alone feel lonely and vice versa. Some researchers claimed that living with a spouse may provide sensitive closeness, economic benefits, social control of behavior, and more opportunities for social acceptance, all of which are likely to influence well-being. Results show that, in the changing economic, social, and health conditions, the ageing female population of Kerala will have to face a great challenge in relation to their living circumstances. Living arrangement is supposed to have the responsibility of caring for the elderly females which are very fundamental for planning, designing, and evaluating policies supporting the elder females. By analyzing the indicators of wellbeing it was found that elderly females are confident in coping with their future which indicates a better sign to the active ageing concept.

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Prevalence of mental disorder cases in Sri Lanka

W.R.V.W. Anuradhi[1]

Introduction

Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity (World Health Organization, 2006). The World Health Organization further implies that there is no health without mental health. Both mental health and physical health have bi-direction and association. This means poor mental health is a risk factor for chronic physical conditions. Therefore, Persons with serious mental health conditions are at high risk of experiencing chronic physical conditions and persons with chronic physical conditions are at risk of developing poor mental health. In the world, mental health diseases have been identified as the burden of other diseases worldwide (Edwards, 2015). Mental health is simply defined as a sense of coherence (Machteld, Green, Host, and Jadad, 2011). The definition of mental health can be further explained as the capacity to cope with situations, recover from psychological stress and prevent post-traumatic stress disorders. Mental disorders are of various types such as depression, bipolar disorder, schizophrenia and other psychoses, dementia, and developmental disorders including autism. Mental health diseases are not an isolated or individualized issue. It affects the development of society as a whole. When compared to other major chronic diseases, the treatment of patients with mental disorders incur a high financial cost (World Health Organization, 2003). The risk of mental disorder prevalence is higher among people who are experiencing socio-economic vulnerabilities such as poverty, homelessness, unemployment, low education, violence, and marginalized groups such as migrants and refugees, indigenous populations, children and adolescents, abused women and the neglected elderly (World Health Organization, 2003). Depression is the most common mental disorder in the world with 264 million people affected by depression globally. The annual health bulletin data reviews that the number of mental disorder cases are increasing in Sri Lanka. Sri Lanka's first island-wide comprehensive mental health survey reveals that ten percent of the population suffers from one or more mental disorders in 2007. Among them 6.9 percent suffer from moderate depression. 2.9 equal percent suffer from somato form disorder and post-traumatic stress disorder. 2.4 percent suffer from major depression and 1.9 percent suffers from anxiety (National Mental Health Survey, 2007).

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Research objective

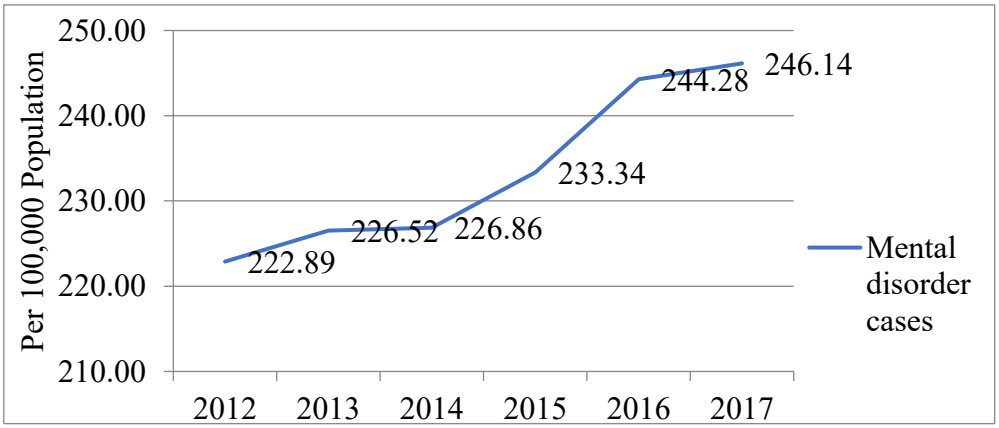
The objective of this study is to examine the prevalence of mental disorder cases in Sri Lanka.

Methodology

The study was conducted by using the secondary data that has been published by Ministry of Health and Department of Census and Statistics from 2012 to 2017. The data of patients with mental disorders were obtained from the annual health bulletin published by the Ministry of Health. Mid-year populations from 2012 to 2017 were obtained from statistics published by the Department of Census and Statistics. Univariate and bivariate techniques have been used in this study.

Results and discussions

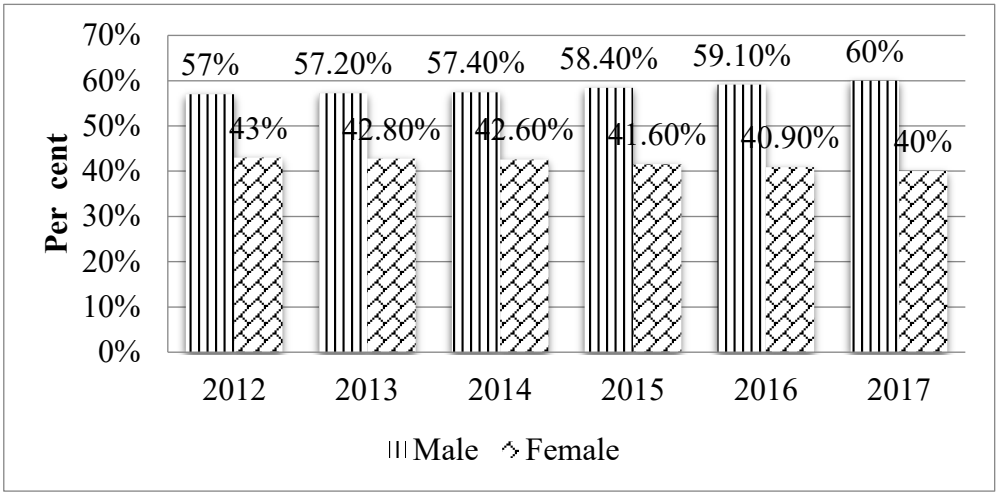
Figure 1: Prevalence of mental disorder cases in Sri Lanka, 2012-2017



Source: Author's drawn graph by using annual health bulletin and department of census and statistics data, 2020

Figure 1 indicates that the prevalence of mental disorder cases per 100,000 mid-year population has increased since 2012 to 2017. It is 222.89 in 2012 per 100,000 mid-year population and 246.14 in 2017 per 100,000 mid-year population in Sri Lanka. However, 2014 to 2016 there is a dramatic increase in mental disorder cases in Sri Lanka when compared to the other years. It is 226.86 in 2014 and 233.34 in 2015 and 244.28 in 2016 per 100,000 mid-year population.

Figure 2: Sex differences in mental disorder cases in Sri Lanka, 2012-2017

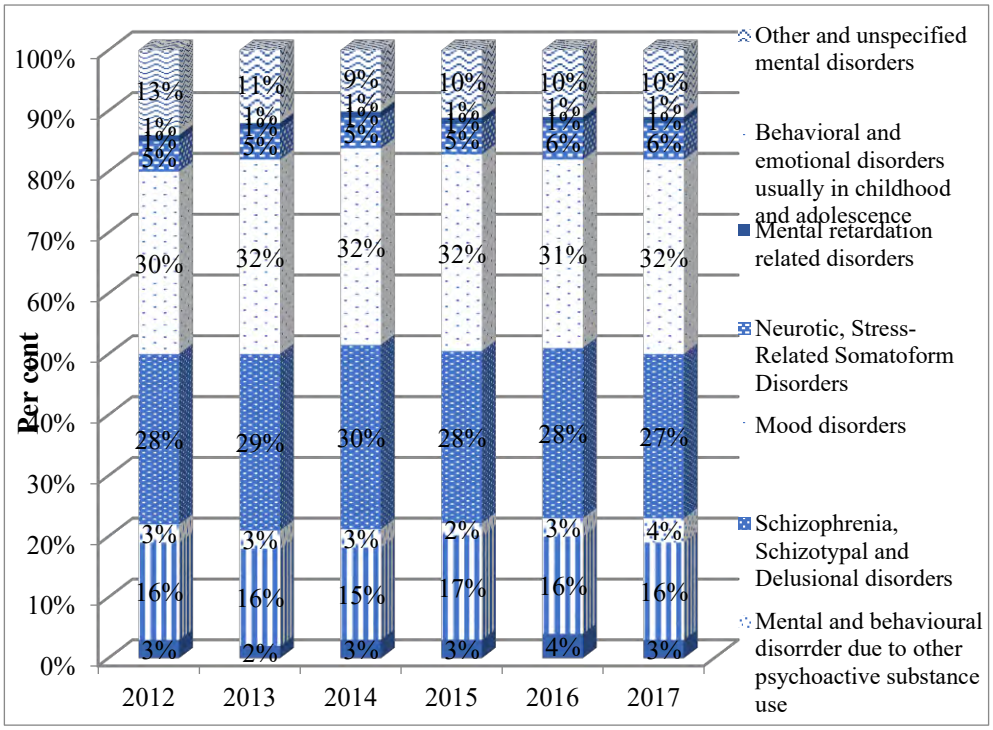


Source: Authors drawn graph by using annual health bulletin data, 2020

Figure 2 indicates that there is a significant difference between male and female mental disorder cases in Sri Lanka from 2012 to 2017. In 2012, male and female differences of mental disorder cases can be identified as 14 percent and in 2017 male female differences of mental disorder cases has increased as 20 percent. However, mental disorder cases of males have timely increased and mental disorder cases of females have timely decreased. Literature reviews that gender is correlated with the prevalence of mental disorders. Prevalence and incidence studies of mood disorders show contradictory results when compared to Sri Lanka. That is women have a higher prevalence of mental disorders such as depression and anxiety disorders than men (Waraich, Goldner and Somers, 2004).

Figure 3 indicates that mood disorders, Schizophrenia/Schizotypal and delusion are the two main types of mental disorders since 2012 to 2017 in Sri Lanka. In 2012, mood disorders were reported as 30 percent and it has increased to 32 percent in 2017. In 2012, Schizophrenia/Schizotypal and delusion have reported as 28 percent and it has slightly fluctuated from 2012 to 2017 and has remained at 27 percent in 2017. Mental and behavioral disorders related to the use of alcohol can be identified as 16 percent in 2012 and 2017. In Sri Lanka, unspecified mental disorders have reduced from 13 percent in 2012 to 10 percent in 2017.

Figure 3: Types of mental and behavioral disorders in Sri Lanka, 2012-2017



Source: Authors drawn graph by using annual health bulletin data, 2020

Table 1 indicates that Colombo district has reported the highest percent of mental disorder cases from 2012 to 2017. It was 18.96 in 2012 and 24.37 percent in 2017. However, mental disorder cases were 5.41 percent within 2012 to 2017.

In 2012, the second highest number of mental disorder cases were reported in Kandy district at 11.52 percent and the third highest mental disorder cases were reported in Gampaha district at 10.31 percent. The fourth highest mental disorder cases were reported in Kurunegala district at 9.37 percent. In 2013, the highest mental disorder cases were recorded in Colombo district at 20.46 percent. The second highest cases of mental disorders have shifted to Gampaha district at 10.27 in 2013. The third highest mental disorder cases have been recorded in Kandy district at 10.22 percent. The fourth highest recorded mental disorder cases have been recorded in Kurunegala district at 9.30 percent. The similar descending pattern of reporting mental disorder cases can be identified from 2013 to 2017 in Colombo, Gampaha, Kandy and Kurunegala. In 2012, 2013 and 2014, the fifth highest recorded mental disorder cases were identified in Galle at 6.07, 6.10, 5.41 percent. However, in 2015, the fifth highest recorded mental disorder cases shifted to Badulla district at 5.05 percent. In 2016, the fifth highest mental disorder cases were reported in Badulla district as 5.77 percent.

In 2017, again the fifth highest mental disorder cases shifted to Galle district at 5.84 percent. Since 2012 to 2017 Mullaitivu district can be identified as recording the lowest percent of mental disorder cases in Sri Lanka and it is 0.20 and 0.37 percent.

Table 1: Distribution of reported mental disorder cases by district in Sri Lanka, 2012-2017

District	2012	2013	2014	2015	2016	2017
	(%)	(%)	(%)	(%)	(%)	(%)
Colombo	18.96	20.46	24.36	21.30	23.11	24.37
Gampaha	10.31	10.27	9.80	11.04	10.61	9.59
Kalutara	3.57	3.66	3.58	3.39	4.10	4.34
Kandy	11.52	10.22	9.23	9.28	8.77	8.55
Matale	2.33	2.68	2.74	2.53	2.38	2.14
Nuwera Eliya	2.29	2.03	1.92	1.81	1.84	1.84
Galle	6.07	6.10	5.41	4.74	5.43	5.84
Matara	3.14	2.95	2.74	2.81	2.55	2.98
Hambantota	1.47	1.50	1.48	1.34	1.37	1.45
Jaffna	5.05	4.44	4.31	3.83	3.69	3.71
Kilinochchi	0.32	0.50	0.84	1.09	1.82	1.76
Mullaitivu	0.20	0.32	0.49	0.44	0.40	0.37
Vavuniya	1.50	1.70	1.60	1.37	1.27	1.22
Mannar	0.28	0.98	0.49	0.54	0.61	0.64
Batticoloa	2.43	1.86	2.11	1.75	1.90	2.13
Ampara	1.00	1.01	1.30	1.23	1.23	1.13
Kalmunai	1.35	1.18	1.36	1.37	1.02	1.18
Trincomalee	1.16	1.21	1.23	1.56	1.40	1.36
Kurunegala	9.37	9.30	8.11	7.75	6.60	6.17
Puttalam	1.29	1.24	1.18	1.43	1.31	1.01
Anuradhapura	4.10	3.95	3.03	5.15	5.77	5.06
Polonnaruwa	1.39	1.66	1.95	2.45	1.84	2.28
Badulla	5.11	5.25	5.02	5.05	4.65	4.96
Moneragala	1.21	1.14	1.21	1.43	1.39	1.37
Ratnapura	2.48	2.57	2.70	3.38	2.92	2.97
Kegalle	2.13	1.81	1.81	1.97	2.06	1.60
Sri Lanka	100.00	100.00	100.00	100.00	100.00	100.00

Source: Authors constructed table by using annual health bulletin data, 2020

Conclusion

Research findings indicate that the prevalence of mental disorder cases in Sri Lanka has been increasing since 2012. The prevalence of mental disorder cases is higher among males than females in Sri Lanka. This is contradictory with existing literature. Types of mental and behavioral disorders are different and alcoholic-related mental disorders are another growing issue. The distribution of reported mental disorder patients from 2012 to 2017 is recorded from all 25 districts of Sri Lanka. The number of reported mental disorder patients is higher in Colombo district when compared to other districts. These findings suggest that it is necessary to identify mental health needs to reduce the number of mental disorder cases in Sri Lanka.

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Impact of chronic kidney disease of unknown etiology (CKDu) on patients: Based on CKDu patients of Rajanganaya Track 11 Hospital

D.M.M.N. Bandara[1]

Introduction

Chronic Kidney Disease of Unknown etiology (CKDu) was identified by the Ministry of Health in the 1990s among the paddy farmers of the North Central Province of Sri Lanka. When the recognized causes of kidney diseases (e.g. diabetes, hypertension, etc.) are absent, it is identified as 'Chronic Kidney Disease of Unknown etiology. Today, in Sri Lanka, CKDu has become a major health issue which has attracted the attention of society at all levels. CKDu has severely affected the population in the North Central, Uva, Eastern, North Western and Southern provinces. The true number of CKDu cases and the cause of the disease remain unknown. According to the Ministry of Health, it is suspected that in the North Central and Uva provinces a minimum 15 percent of the population in the age group of 15-70 years have been affected by the disease (Epidemiology Unit of Ministry of Health, 2017). It can be identified that all of these areas are mainly agricultural and contribute largely to the country's rice production. Globally, most of the CKDu patients are identified as men aged between 30-60 year, who are in their productive working years. A number of countries have emerged as geographic "hot spots" of CKDu including El Salvador, Guatemala, Mexico, Nicaragua, Bulgaria, Croatia, Serbia, India, and Sri Lanka (Elledge, et al., 2014).

According to the Ministry of Health, in 2016, North Central Province of Sri Lanka was endemic to CKDu with an estimation of one-sixth of its population being affected. Most of the affected were identified as male farmers. A healthy labor force is key for sustainable development. Therefore, it is timely and essential to discuss the demographic, social, and economic impact of CKDu on patients.

Research objective

The objective of this research is to examine the demographic, social and economic impact of CKDu on patients.

Methodology

The study has used both primary and secondary data sources. As the secondary data source, hospital clinical records of the Rajanganaya Track 11 hospital were used to obtain the sample of the study. According to the records 52 patients (39-Males and

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13-Females) were registered as CKDu patients and the total number of 52 patients were selected to the sample. Data such as Gender, Age, Serum Creatinine Rate, Marital Status, Educational Level, and Occupation related to the sample was also obtained from the hospital records. Primary data was collected using the case studies conducted by the researcher. Statistical analysis was performed on the data with the use of SPSS and Excel.

Results and discussion

Findings of the study discuss the impact of CKDu on selected demographic and socio-economic factors such as gender and age, marital status and occupation.

Impact of CKDu on gender and age

Analysis revealed that the highest percentage of patients belong to the 60-69 years age group which is 44.2 percent. The lowest percentage of patients (19%) belong to the 20-29 years and 30-39 years age groups. The mean and median ages of the sample were 61 years and 62 years respectively and the data was identified as negatively skewed. Hence, it was identified that a majority of CKDu patients are in the middle or older age categories.

Among all the patients, the number of males (75%) is significantly higher than the number of females (25%). Most of the males were the breadwinners of their families and the sickness severely affected the families.

"I have been farming for 40 years. As a result of this "karuma lede" I am suffering. I can't go to the farm anymore because my body is very weak now. I cannot do any hard work. I am worried about my family. My two brothers are also CKDu patients. We don't have support from anyone"

-61 years old CKDu patient- Male

This indicates the psychological impact and the economic burden upon the male population suffering from CKDu.

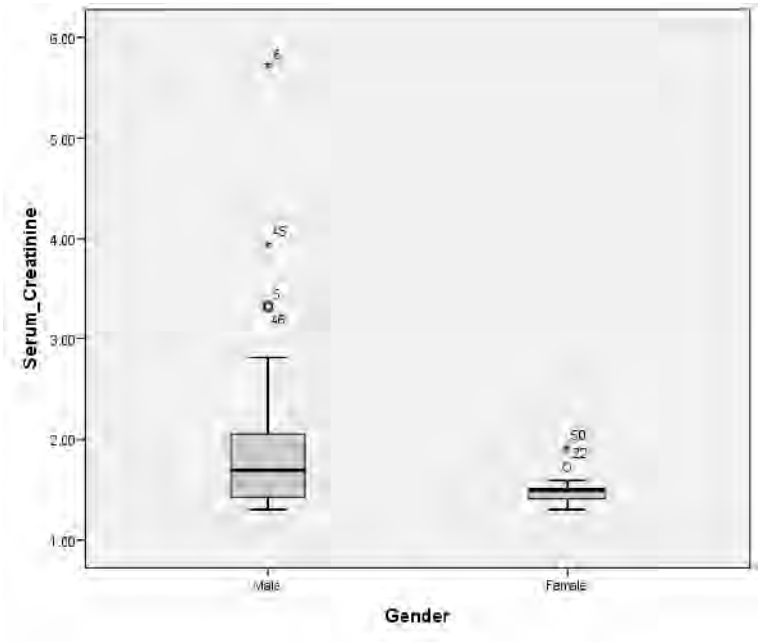
Next the results indicate how serum creatinine rate of patients differed by the gender. T-test has been used to show whether the differences between the means of two groups are real or statistically significant.

Table 1: Descriptive Statistics of CKDu patients

Descriptive Statistics						
Gender		N	Minimum	Maximum	Mean	Std. Deviation
Male	Serum Creatinine	39	1.30	5.73	1.9682	.88976
	Valid N (list wise)	39				
Female	Serum Creatinine	13	1.30	1.91	1.5023	.16589
	Valid N (list wise)	13				

Source: Compiled by author

Figure 1: Serum creatinine rate of patients by gender



Source: Compiled by author

Table 2: Group Statistics of patients by serum creatinine rate

Table: Group Statistics					
	Gender	N	Mean	Std. Deviation	Std. Error Mean
Serum Creatinine	Male	39	1.9682	.88976	.14248
	Female	13	1.5023	.16589	.04601

Source: Compiled by author

Hypotheses:

H_0: There is no difference in the average number of serum creatinine rate by gender
H_1: There is a difference in the average number of serum creatinine rate by gender

Table 3: Independent Samples Test of patients by serum creatinine rate

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Serum Creatinine	Equal variances assumed	7.092	.010	1.865	50	.068	.46590	.24977	-.03579	.96758
	Equal variances not assumed			3.112	44.796	.003	.46590	.14972	.16431	.76749

Source: Compiled by author

Independent samples t-test enquires the assumption of homogeneity of the variance between the two groups. This is tested with the use of Levene's test. According to the p value of the Levene's test it can be concluded that homogeneity of variances assumption is violated. Therefore, the second row of the table has to be considered. According to the Sig (2-tailed) (p-value) of the t-test the null hypothesis is rejected at 5% significance level. In other words, this hypothesis testing statistically proves that there is a difference in the serum rate by gender.

Impact of CKDu on marital status

The study reveals that 94.2 percent of the patients are married and 5.8 percent are unmarried. Some unmarried patients have not got married because of the disease or the family history of CKDu. Further, the majority of the affected are parents of grownup children who are already employed and settled. The majority affected are aged members in the families; but the possibility of the disease damaging the family bonds can be identified.

It was also revealed that many patients affected by CKDu try to conceal it fearing social stigma. Some patients avoid going to the clinic in their own area and others stealthily seek private treatment. This is because the villagers consider this disease as "karuma Lede, Windawana Lede, pawkara Lede" which means a "bad disease". This situation is heightened as it negatively impacts patients when entering matrimonial relationships.

"I got married at the age of 40 years. My wife is 16 years younger than me. When I got married, I was a CKDu patient. Wife's family completely rejected me because of my disease."

-49 yrs old CKDu patient- Male

Impact of CKDu on occupation

It is ascertained from the study that the patients of CKDu are engaged in different types of occupations. However, the majority, both males and females are farmers (55.8 percent). In this study almost all the CKDu patients had been engaged in hard work such as farming or other laborious manual work under a very hot climate pattern for a long time.

Figure 2: Percentage of CKDu patients by occupation

Source: Compiled by author

Moreover, the disease has a massive impact on their occupations. Due to the situation of the patient, another member in the family has taken over the job and that member of the family continues the cultivation. However, following this substitution, production and productivity has lessened due to lack of experience, less interest and poor knowledge of the other family member. This has an impact on the income of the family.

Impact of demographic and socio-economic status of CKDu patients on the etiology of the disease

Multiple Regression Multiple regression analysis has been performed to find whether there is any significant impact of demographic, and socio-economic status of CKDu patients on the disease by using serum creatinine rate of the patients. The regression line can be written as follows:

Serum Creatinine Rate = a + b1 age + b2 gender + b3 marital status+ educational status + occupational status

Model summary table shows that the R square value is only .098. This means that independent variables explain 9.8 percent of the variability of dependent variables. This means that demographic and socio-economic status of patients do not explain the variability of the serum creatinine rate among them. This is compatible with the findings that there is unknown etiology which cannot be explained by the demographic and socio-economic variables to predict the prevalence of CKDu.

Table 4: Model Summary of multiple regression

Table: Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.313[a]	.098	.000	.79863
a. Predictors: (Constant), Marital Status, Gender, Occupation, Educational Status, Age				

Source: Compiled by author

ANOVA Table further shows that F value is very small (1.001) and it is not significant even at .05 level. This suggests that the regression performed in this study is not a good fit of the model. Within the coefficients table, it can be determined that the relative importance of each of the independent variables in accounting for variance in the patients' serum creatinine level. This study reveals that no variable in this equation explains the significant amount of variance in the serum creatinine level (Sig >0.05). Hence the aetiology still remains unknown.

Table 5: Anova test of multiple regression

Table: ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3.191	5	.638	1.001	.428[b]
	Residual	29.339	46	.638		
	Total	32.530	51			
a. Dependent Variable: Serum Creatinine						
b. Predictors: (Constant), Marital Status, Gender, Occupation, Educational Status, Age						

Source: Compiled by author

Conclusion

In conclusion, it is evident that CKDu has a massive impact on demographic and socio-economic status of the patients such as age and gender, marital status, occupation, education etc. It was observed that most of the patients of kidney disease are relatively mature in age and almost all CKDu patients are hard workers engaged in farming or other laborious manual work. This disease has become a main cause of death in many provinces which limit the contribution of the labour force. Social stigma built around the disease has made it dangerous as it limits the person's opportunity for curative treatments. Moreover, it could be noticed that people do not have a proper awareness and understanding about the disease. It could be suggested as a timely measure if immediate actions could be taken to educate people via officers close to the ground level like PHIs and Midwives.

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The Malay community of Sri Lanka: A preliminary analysis of the decline in the population between 1981 and 2012[1]

K. Boyagoda[2] and R. Rassool[3]

Introduction

The underlying aim of the 2030 Agenda for Sustainable Development which is to ensure that "no one is left behind" indicates a commitment to ensure that no one is excluded or discriminated against based on variables such as gender, social class, disability, age, sexual orientation, religion or ethnicity. Underpinning the above declaration is an acknowledgement of the importance of recognizing and accepting the complex and multifaceted identities of the various ethno-religious communities of a country. This is especially true in the post-conflict context of Sri Lanka, a country which is struggling to recover from decades of internal conflict which has led to violence.

Within this context, it is important to recognize how the diverse populations of Sri Lanka are identified, categorized, and enumerated as this is a telling reflection of how the various groups, particularly the numerically small and otherwise vulnerable groups, are recognized and included within the larger polity in general, and in demographic studies in particular. Although Sri Lanka is a multi-ethnic country, demographic discussions surrounding ethnicity have been dominated by the situation of the Sinhalese, Sri Lankan Tamil, Indian Tamil, and Moor[4] communities, perhaps because together they have constituted above 95 percent of the total population in all censuses since 1871. By 2012, 99.5 percent of the total population belonged to these four groups. All other communities are considered numerically small and therefore inconsequential, and through the years, several ethnic groups[5] have been assigned to the category labelled as "Others". It is important to realize that within this 0.5 percent there are diverse groups that define their identities in multiple ways and that to overlook them in contemporary socio-demographic and political discourses and thus

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[4] Moor is the term used by the European colonisers to refer to the Muslim traders whose presence in Sri Lanka dates back to the 7th century (Hussein 2007). The Moors constitute the largest number of Muslims in Sri Lanka.

[5] The most significant group that is unfortunately rendered invisible through this process is the Aadivasi (Veddha) community, the original inhabitants of Sri Lanka.

deny them their identity does them a grave disservice and ignores their presence in the rich tapestry that forms Sri Lanka's ethnic composition.

Research objective

Against the backdrop presented above, the objective of this paper is to discuss the situation of one of the minority communities - the Sri Lanka Malays - the fifth largest population group in the country. The Sri Lanka Malays are descendants of soldiers, exiles, slaves, and convicts whose presence in the country is due to western colonialism. The term 'Malay' is a misnomer because the group of people who have now united under this common ethnic term of reference are from various parts of present-day Indonesia, Malaysia, and Singapore and are descendants of several distinct ethnic groups living in these regions. They arrived in Ceylon[1], during the Portuguese, Dutch, and British periods and settled in various parts of the island. As stated by Hussainmiya (1987) and Adelaar and Prentice (1996), since arrival in Sri Lanka, Malays have had a close relationship with the 'Moors' with whom they share the common religion of Islam. In fact, Adelaar and Prentice (1996, p.24) state that "it is to them [the SL Moors] that the Malays owe the maintenance of their religious identity and possibly even their identity as a separate ethnic group".

This shared religious identity has led to some confusion among other communities of the country, who frequently conflate the Malays and the Moors. Adding to this confusion is the religious label 'Muslim' which is claimed by both ethnic groups as they are both adherent of the religion of Islam. As discussed below, this conflation and resulting confusion could have a significant impact on the enumeration process.

The census records reveal a 20 percent decline of the Malays from 55,352[2] in 2001 to 44,130 in 2012, indicating a decline from 0.3 percent of the total population to 0.2 percent during the inter-censal period. This drop in number has been viewed with alarm by some of the more educated members of the Sri Lanka Malay community (Rameez, 2017) who are aware how critical numbers are in accessing seats of power and claiming a 'voice' in a political landscape that is increasingly viewed by minorities as favouring the majority population of the country. From a sustainable development perspective, the examination of the distinct social and demographic behaviours and specific issues of these minority ethnic groups is crucial to prevent these matters from going unnoticed or being rendered invisible, which may, in the long run, lead to the loss of the unique identity of a community.

[1] Sri Lanka was known as Ceylon before 1972.
[2] Estimated figure as the 2001 Census fully covered only 18 districts.

Based on the above, the research questions of this study are:

(a) Where in Sri Lanka has the decline in the Malay population taken place between 1981 and 2012 and to what extent has this decline occurred?
(b) What could be the possible reasons for the reduction in the number of Sri Lanka Malays in the census records between 1981 and 2012?

This study has been conducted by analysing the census reports of the years in question and referring to various other secondary sources.

Results and discussion

This study focuses on the period 1981 to 2012, the period which shows a marked peak and drop in the Malays. The numbers recorded against the SL Malays in the above censuses are as follows (Table 1).

Table 1: Total population and inter-censal difference of Malays, 1981-2012

Census Year	Population	Inter-censal increase (%)
1981	46963	-
2001	55352[1]	17.9
2012	44130	-20.3

Source: Department of Census and Statistics, 2015

As stated earlier, one of the major concerns of the SL Malay community is that there is a decline of 11,222 (20.3%) in the number between 2001 and 2012. However, this decline needs to be viewed against the larger context, where, as presented in Table 1, the total decline between 1981 and 2012 is 2,833 or 6 percent. While still a cause for concern, the picture is not as grim as when studying the difference between 2001 and 2012 in isolation. It is worth noting that the Malays have increased by 8,389 or 18 percent between 1981 - 2001.

The first research question is related to where the decline is witnessed and to what extent. In order to investigate this, we undertook a detailed study of the number of Malays in each of the 25 districts of Sri Lanka during the period 1981 - 2012. The findings are presented in Table 2.

[1] As stated above, in 2001 the census was conducted only in 18 of the 25 districts. The number presented here is a projection of the total population; the actual number of Malays in the 18 districts that were enumerated is 54,782.

Table 2: Malays by district and inter-censal difference 1981-2012

District	1981	2001	2012	Inter-censal difference 1981-2001 (%)	Inter-censal difference 2001-2012 (%)
Colombo	22233	21778	14444	-2.05	-33.68
Gampaha	8675	13683	12720	57.73	-7.04
Kalutara	762	973	689	27.69	-29.19
Kandy	2755	2668	2444	-3.16	-8.40
Matale	574	523	392	-8.89	-25.05
Nuwara Eliya	1136	1059	543	-6.78	-48.73
Galle	186	178	106	-4.30	-40.45
Matara	79	87	58	10.13	-33.33
Hambantota	4445	7255	8164	63.22	12.53
Jaffna	72	-	23	Not enumerated in 2001	Not enumerated in 2001
Mannar	35	-	11	Not enumerated in 2001	Not enumerated in 2001
Vavuniya	34	-	8	Not enumerated in 2001	Not enumerated in 2001
Mullaitivu	19	-	11	Not enumerated in 2001	Not enumerated in 2001
Kilinochchi	-	-	2	Not enumerated in 2001	Not enumerated in 2001
Batticaloa	46	-	28	Not enumerated in 2001	Not enumerated in 2001
Ampara	168	225	187	33.93	-16.89
Trincomalee	831	-	356	Not enumerated in 2001	Not enumerated in 2001
Kurunegala	1259	2150	1220	70.77	-43.26
Puttalam	954	1214	631	27.25	-48.02

Anuradhapura	338	279	161	-17.46	-42.29
Polonnaruwa	109	48	46	-55.96	-4.17
Badulla	1419	1813	1351	27.77	-25.48
Monaragala	193	127	63	-34.20	-50.39
Rathnapura	412	444	288	7.77	-35.14
Kegalle	229	278	184	21.40	-46.76

Source: Department of Census and Statistics, 2001; 2015

Malays are domiciled in all the districts of the country. However, the largest numbers are found in Colombo and Gampaha, in that order. In 1981, 47 percent of the Malays were from Colombo and 18 percent from Gampaha. In 2001, 39 percent were from Colombo and 25 percent were from Gampaha. In 2012, 33 percent were from Colombo and 29 percent were from Gampaha. These statistics indicate that, though Colombo district is still home to the largest proportion and number of Malays, the proportion and number are declining there. Meanwhile, in Gampaha, there is an increase of 57.73 percent between 1981 and 2001 and a decrease of 7.04 percent. Overall, between 1981 and 2012, there is an increase of 46.63 percent in Gampaha. Since there is a possibility of considerable movement between these two adjacent districts it could explain the increase in one and decline in the other.

The decline in the overall total number of Malays between 2001 and 2012 is also reflected in the district-wise breakdown (Table 2). One noteworthy observation is that out of the total decline between 2001 and 2012, 74 percent is witnessed in Colombo and Gampaha. From 1981 to 2001 the Malays in Colombo declined by 2 percent while the decline from 2001 to 2012 was 34 percent. In Gampaha, the proportion increased by 58 percent between 1981 and 2001 and declined by 7 percent between 2001 and 2012.

Overall, there is a steeper decline between 2001-2012 than during 1981-2001. Between 1981 and 2001, the steepest declines are witnessed in Polonnaruwa, Moneragala, and Anuradhapura. During the 2001-2012 period, the largest declines are witnessed in Moneragala, Nuwara Eliya, Puttalam, Kegalle, Kurunegala, Anuradhapura and Galle. Colombo has recorded the 9th largest decline for the period 2001-2012. While it is possible to speculate that the decline witnessed in some of the smaller districts could be due to some members of the Malay community migrating to the large cities like Colombo and Kandy for education or employment, this does not explain the decline in the number of Malays in the district of Colombo.

The 7 districts displaying a Malay population of 1000 or more in 1981 were subjected to a close analysis. These were Colombo, Gampaha, Kandy, Nuwara Eliya, Hambantota Kurunegala, and Badulla. By 2001, all of these districts and Puttalam showed a Malay population of 1000 or more. However, while the number of Malays in Gampaha, Hambanthota, Kurunegala and Puttalam increased from 1981 to 2001, in Colombo, Kandy, Nuwara Eliya, and Badulla it decreased. The district of Hambantota presents a quandary to the researchers. Although the census records an increase of 63.22 percent between 1981 and 2001 and an increase of 12.53 percent between 2001 and 2012, reliable evidence from the community members of this district reveal that around 2000 Malays died during the tsunami in 2004. Of the remaining 17 districts (having less than 1000 Malays), the numbers increased in five and decreased in five. Seven districts were not covered in 2001. However, the total Malays in these 7 districts was 1037 in 1981, and other than in Trincomalee, the number in the rest was less than 50. This pattern changed in 2012 when, other than in Hambantota, the Malay population decreased in all districts; in 14 of the districts the decline is more than 25 percent. Based on the above it is evident that the number of Malays in almost all the districts is on the decline in 2012.

The second research question posed in this study is related to the possible reasons for this decline in the number of SL Malays. Although this question is still under investigation by the researchers, early findings indicate that one possible reason could be Malay marriage practices. Although the members of the Malay community prefer endogamy, it is documented that when there are instances of exogamy, Malay parents consider it more acceptable for their children to marry from within the Moor community because of the shared religion (Rassool, 2013). Nordhoff (2009) estimates that approximately 10-15 percent of Malay marriages are with SL Moors, but this Figure needs more thorough investigation.

This fairly common practice of Malays marrying Moors could possibly be a reason for the decline in numbers. In the case of a Malay woman marrying a Moor man, it is possible that she might self-identify or be identified by an enumerator as belonging to the Moor community. In the case of children of a mixed parentage, the practice of the Sri Lankan censuses is for the father's ethnic identity to be the ethnic identity of the children. Therefore, it is possible that children born of the union of a Malay woman and a Moor man are enumerated as Moors, which would lead to a further 'decline' in the number of Malays.

Another reason for possible misrepresentation is related to nomenclature. As stated earlier, Malays and Moors are Muslims by religion, and although the term Muslim refers to a religious category (those of the Islamic faith), in Sri Lanka, 'Muslim' is

frequently used as a synonym for 'Moor'. However, as noted by Nuhman, the Sri Lankan Moors have appropriated the term 'Muslim' to denote their religious identity as well as their ethnic identity and therefore, in Sri Lanka, "the term Muslim is used to refer to both religion and ethnicity" (Nuhman 2007, p.13). In this (confusing) context, since there is evidence that the Malays increasingly view their religious identity (being Muslims) as superseding their ethnic identity (being Malays), it is possible that they too might state their ethnicity as 'Muslim' rather than 'Malay'. Therefore, it is possible that the census enumerators could enumerate the Malays with the Moors, especially since the number of Moors shows an increase of 80.8 percent during the period 1981-2012[1].

Apart from the above, possible demographic explanations for the decline could be one or any of the following: a high rate of mortality, a drastic decline in the fertility rate, and large numbers of Malays out-migrating. This study has not yet analyzed the mortality, fertility, and migration patterns of Malay community yet, and therefore it will not give a definite conclusion regarding these points, which are the next points to be investigated in this detailed study. However, available information suggests that these are unlikely.

Conclusion

The preliminary findings of this paper indicate that there is indeed a decline in the number of Malays between 1981 and 2012. However, it is noteworthy that there is an increase in the numbers between 1981 and 2001 and then there is a drastic decline between 2001 and 2012, which has led to an overall decline of 6 percent between 1981 and 2012. A similar pattern is seen in the numbers by district as well.

The possible reasons for this decline most likely include issues such as confusion regarding the nomenclature used to denote religious vs. ethnic identity, the enumeration of Malays engaging in inter-ethnic marriages and children of such marriages, and misrepresentation in the census possibly due to enumerator bias or respondent bias. It is evident that these as well as other demographic reasons such as the fertility, mortality, and out-migration patterns of the SL Malay community need to be studied in detail in order to arrive at a full understanding of the reasons for this decline, and these are being investigated by the researchers at the moment.

[1] Obviously, this would not be the only reason for the increase in the number of SL Moors. But the possibility that Malays are enumerated as 'Muslims' is one that has been documented (Rameez 2017) and is being investigated by the researchers at present.

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A sociological study on the discrimination experienced by transgender individuals when accessing public health services

M. K. Darsha[1]

Introduction

It is essential to study the prevailing gaps in the health care facilities available to transgender individuals in Sri Lanka since many have been denied general health services or have been judged because of their gender identity or expression. Transgender individuals lack access to basic healthcare, including HIV services. There is even less access to publicly funded gender-affirming health services for those who seek medical transition. Furthermore, these individuals experience high and chronic levels of stress which is linked to social exclusion. This includes disproportionately low emotional wellness and poor mental health resulting in relative anxiety and suicidal ideation and behavior. Social Stigma limits their access to appropriate and sensitive mental healthcare and as a result, obtaining counselling services has become a limited opportunity to the transgender community.

Transgender individuals in Sri Lank have experienced discrimination and marginalization when accessing public health care such as counselling support, hormone therapy, chest or breast reconstruction surgeries, genital surgeries, or other body modification surgeries.

Research objective

The objective of the study is to identify the issues experienced by transgender individuals in Sri Lanka when accessing public health.

Methodology

In terms of the methodology used for the study, a total sample size of 20 respondents consisting of 10 female to male transgender individuals (FTM) and 10 male to female transgender individuals (MTF) participated in in-depth interviews. Participants were selected using a non- random, purposive sampling method based on the accessibility to respondents. Thematic analysis was used to analyse the data.

Results and discussion

The findings revealed that many transgender individuals have been denied general health services due to stigma; this includes trans women being referred to as men or

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trans men being called women. Health records also disclose a trans person's sex at birth and this exposes the person to judgement and discrimination from the health staff. This includes being discriminated or harassed in sex-segregated hospital wards or clinics.

The data reveals that male to female transgender people find it more difficult than female to male people to feminize their bodies using hormones due to the prevailing hormone shortage in Sri Lanka. Usually, in general hospitals, female to male transgender individuals are provided with testosterone shots once a month through the psychiatric clinic. In contrast, male to female people are not provided estrogens through the clinic but are instead advised to take a high dose of "Mithuri Tablets" as an alternative for estrogen. These practices have created some health issues in the transgender community. In addition to the hormone shortage, data shows that trans individuals experience discrimination by the minor health staff when using hormone therapy provided by the general hospitals.

Data also reveals that trans persons experience discomfort in showing their body and revealing the trans identity due to the lack of knowledge on transgender related matters of the health staff. For many trans people having to show their body to a health professional triggers discomfort about having a body that does not match their gender identity. As a result, many trans people avoid seeking care or receive little attention to their health needs.

As data suggests, access to counselling has become a limited opportunity among the transgender community. It does not cover the whole community except for those who have the economic capacity to some extent in order to consult private medical practitioners who are willing to provide their services for transgender related health concerns.

Conclusion

The Sri Lankan transgender community is privileged to have some services like body modification surgeries from government hospitals. Even though it seems a progressive, inclusive step, field data shows that transgender individuals experience discrimination when they try to align their bodies by undergoing a sex reassignment surgery.

As data shows, trans individuals experience psychological abuse and physical abuse when accessing public health services due to transphobic responses.

Since there is a considerable gap in the local research literature on the transgender community, this study contributes to fill the gap in existing literature. This research

is also important as different dimensions of the transgender community need to be explored with the community's increasing visibility.

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Knowledge on contraceptive-use of conceived rural women in the second reproductive age span (35-49 age group): A case study of Kuruwita Medical Officer of Health area in Ratnapura District

H.A.C. Darshanee[1]

Introduction

The Royal College of Obstetricians and Gynecologists, United Kingdom (2009) has declared later maternal age as an "emerging public health issue" that needs to be thoroughly studied (Sobotka and Beaujouan, 2017). In Sri Lanka, there is a sudden increase of fertility and large contribution was made by the old age women (Dissanayke, 2014). He further emphasized that this is a temporary phenomenon. According to the 2012 census data, we find that the TFR (Total Fertility Rate) has increased to 2.51[2] in 2012, and it is an increase of 6.4 percentage points from its previous level of 2.36 in 2006/07. Most importantly, data demonstrates that age-specific fertility rates in the SLDHS (Sri Lanka Demographic and Health Survey, 2017) data of 2006/07 have increased among all age groups compared to the values obtained in the SLDHS data of the year 2000, but surprisingly, ages 35 and above showed a remarkable increase in 2012 compared to the SLDHS data of 2006/07. Statistic suggests that the increase of the TFR was mainly due to the increase of fertility among the female in the final stages of the reproductive age span (Dissanayake, 2014). This is considered as a very unusual fertility behavior for women in the second reproductive age span.

Therefore, it is essential to explore the reasons for this fertility pattern among females aged 35-49 years to scrutinize newly emerging reproductive health issues. Furthermore, the percentage of unwanted births has risen for women 35 years and older in the SLDHS 2006/07 sample (Department of Census and Statistics, 2009). It was reported that 10 percent of unwanted births were reported by women who had their last birth at age less than 35 years, while 17.5 and 28.0 percent of unwanted births were reported for women in the age groups 35-39 and 40-44 respectively (Dissanayake, 2014). This phenomenon shows that these older women's contraception needs are not adequately addresses by the country's family planning programmes.

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[2] In the absence of fertility data from the Department of the Registrar General for the year 2012, the Dissanayake L. computed age-specific fertility rates for 2012 with the use of 2012 census data on children ever born tabulated by age of mother using the method suggested by Arriaga (1983).

The main reason for unwanted and unplanned pregnancy reported in later maternal age is, the inadequate contraception knowledge and education of women who are in their latter part of childbearing age (Woods and Bachmann, 2017). Existing empirical research in local context doesn't pay much attention to this matter either.

Research objectives

This study mainly attempts to identify the knowledge on contraceptive-use of women who have conceived in their advanced maternal age (35-49 age group) in the rural sector. In addition, this study aims to reveal three specific objectives: whether having there is any interconnection between being conceived at second childbearing age and their knowledge of contraception, the source of knowledge on contraception and respondents' future desire of contraceptive-use.

Methodology

This study is primarily based on quantitative data which was gathered from selected PHM (Public Health Midwife) areas; Delgamuwa, Parakaduwa, Pussalla and Kosgoda in Kuruwita MOH (Medical officer of Health) area by using an interviewer administered questionnaire. Lottery method in simple random sampling was used to select the above PHM areas from 29 PHM areas in Kuruwita MOH area. Data was collected from a purposively selected sample of 105 respondents. The study sample was drawn from among the respondents with reference to women who conceived or have ever given a birth to one child in the second half of their childbearing stage (35-49 age group) and who attended maternal and child health clinics during the period of 2014 – 2018 by using the clinical records that maintain by the public health midwives. Quantitative data was analyzed with SPSS and the study uses univariate and bivariate analysis.

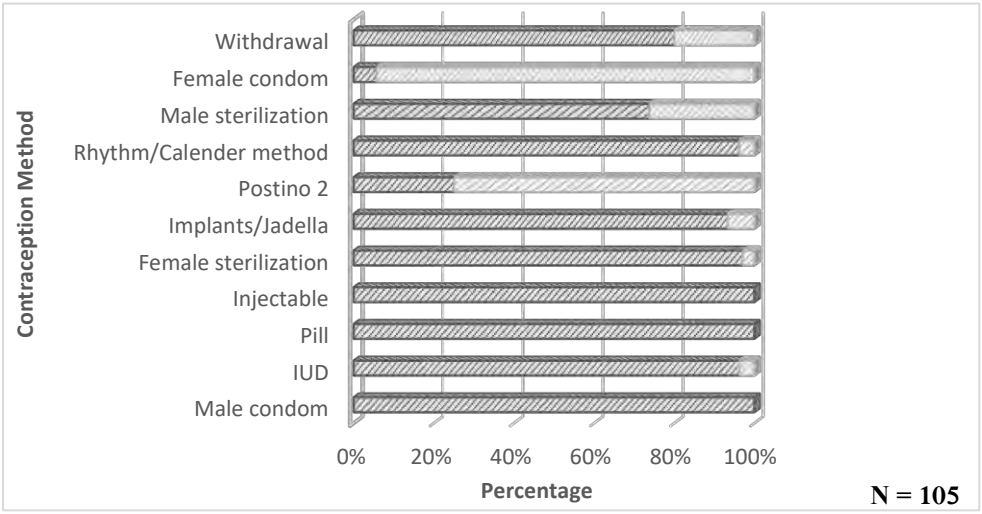
Results and discussion

In this study, information on the knowledge on contraception was collected in two ways. A list of 11 contraception methods including 9 modern methods and 2 traditional methods mentioned in the questionnaire for that. First, respondents were asked to state all the methods of contraception that they had heard of. Secondly, for methods not stated spontaneously, the interviewer described the method and probed for whether the respondent recognized it. In addition, a provision was made in the questionnaire to record any other methods named by the respondents. Their responses for those questions are shown in Graph 1.

The findings of this survey revealed that all most all respondents knew at least one or more methods. Knowledge of a wide range of methods helps women to choose the most suitable or preferred method. Though, contraceptive knowledge of respondents'

is of high-quality, of the level of knowledge from one method to another was varied. As per the Figure 1, most widely known methods among respondents were pills, injectables and male condoms. Frequent introducing of those methods in knowledge awareness programmes conducted by public health midwives and availability of pills and male condoms without prescription from pharmacies are the most influential reasons for this result. Similar to this result Nouhjah and colleagues (2013) reported pill, condom and tubal ligation as the most known contraceptive methods among the women aged 35 years and older (Nouhjah, Amiri, Khodai, Yazdanpanah, and Baghu, 2013). Knowledge of the female condom was very low in the sample. Among traditional methods, the rhythm method was better known than withdrawal method.

Figure 1: Knowledge on contraceptive methods among respondents



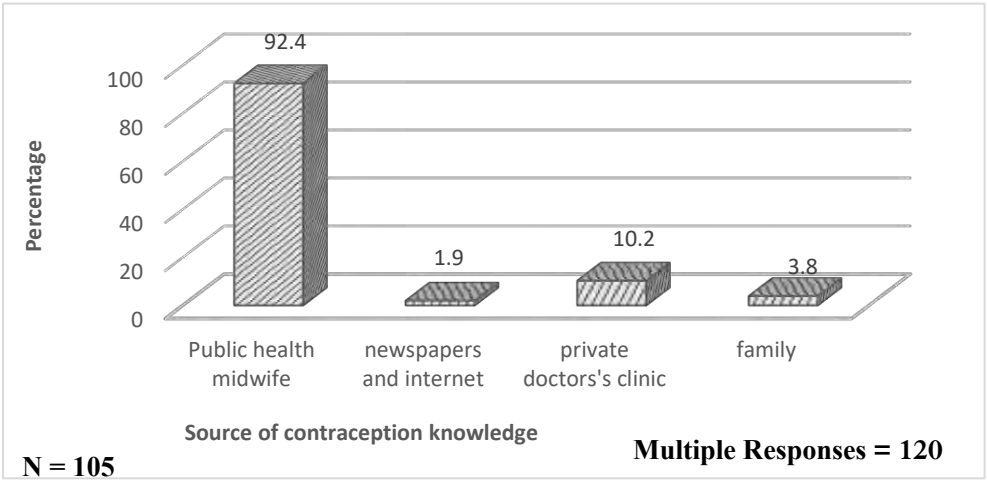
Source: Sample Survey, 2019

It was reported 29 pregnancies were unintended out of total 111 of pregnancies in the sample. Furthermore, it was reported the 18 pregnancies out of 29 unintended pregnancies were experienced because of their neglectful practice of not using contraception. Therefore, according to the study it can be assumed that there is no strong direct interconnection between knowledge of contraceptive methods and unintended pregnancies or child birth of respondents.

Information on source of contraceptive methods can help policy makers to evaluate the progress of family planning programmes implementing in the root level. Figure 2 shows that within the sample, majority of 92.4 percent of respondents have mentioned that they obtain contraception knowledge and services from their public health midwives. This result indicates that respondents have a reliable and easily reachable

source to get knowledge on contraceptive-use. The main problem, encounter by the women in the second part of their childbearing age is how to use this service to prevent unintended pregnancies and births in their married life effectively.

Figure 2: Source of contraception knowledge



Source: Sample Survey, 2019

As a part of achieving the objectives of this study, the intention to use a method of contraception in the future is very significant to know the future potential demand of family planning services for women in the latter part of the reproductive age span. Table 1 shows the intention to use contraception in future by age groups and Figure 3 shows the intention to use the contraception in the future by method. The study revealed that 83.8 percent intend to use contraception within the next 12 months, 3.8 percent stated that they have not decided at the time of research and 12.4 percent reported that they do not intend to use any contraception in future.

When concerned about the preferred method among respondents, nearly 60 percent of prospective and current users said they prefer to use female sterilization, while sizable proportion (15.95%) stated the injectable as their preferred method. In many prior studies surgical methods were reported as the most popular contraceptive methods in this age group of women in developed countries (Mosher, Martinez, Chandra, Abma, and Willson, 2004). Data indicates that almost all the respondents are most likely to rely on effective and efficient modern contraception in their remaining childbearing ages. There was a same evidence in Nepal that women who were exposed to family planning messages through reproductive health staff, were more likely to use modern contraceptives (Mishra, 2011). In contrast to this finding Nouhjah and colleagues (2013) reported that in spite of risk of pregnancy and

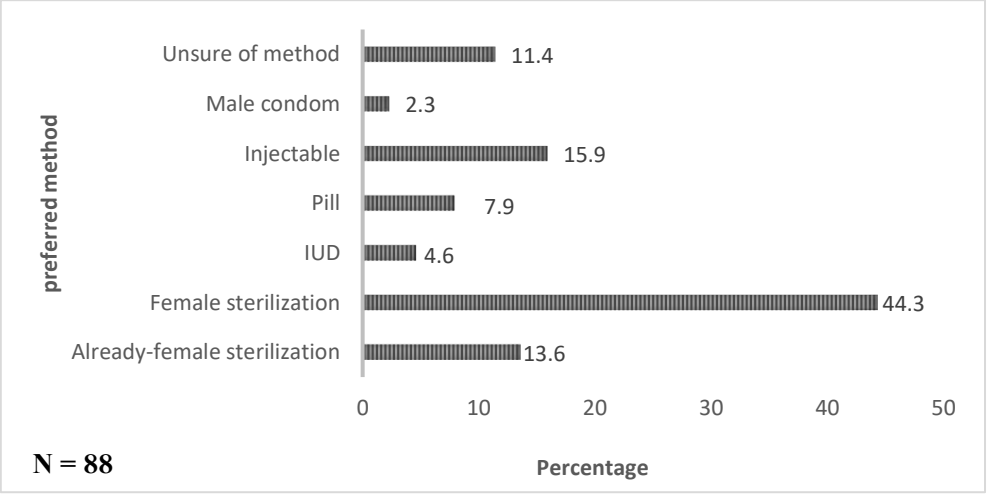
unintended pregnancy in this age group, about a half of them used less effective contraceptive methods (Nouhjah, Amiri, Khodai, Yazdanpanah, and Baghu, 2013).

Table 1: Intention to use contraception in future by age groups

			Do you expect to use any contraception in future			Total
			Yes	No	Not decided yet	
Age	35-39	Number	65	10	2	77
		Percentage	84.4%	13.0%	2.6%	100.0%
	40-44	Number	20	3	2	25
		Percentage	80.0%	12.0%	8.0%	100.0%
	45-49	Number	3	0	0	3
		Percentage	100.0%	0.0%	0.0%	100.0%
Total		Number	88	13	4	105
		Percentage	83.8%	12.4%	3.8%	100.0%

Source: Sample survey, 2019

Figure 3: Intention to use contraception in future by method



Source: Sample survey, 2019

Conclusion

The study concludes that the respondents who experienced an unintended pregnancy were more likely to report infrequent sexual intercourse, past experience with intolerable side effects of contraceptives, and perceive themselves to be at a lower risk of getting pregnant when they are in the second half of their childbearing age and thus neglect contraceptive use and its continuing in addition to their current fertility

desire. Misconception of women aged 40-49 that they are already infertile and there is no risk to become pregnant in sexual intercourse tended to negatively influence contraceptive use even they were already reached their fertility desires in marriage. The most important fact identified is that–the main reason for unintended and unplanned pregnancy in this group was the ignorance to use an effective contraception than the lack of their knowledge. And also, throughout the world, women ages 35 and older are often left out of the conversations on contraception. Therefore, this paper suggests that those mid-life women who wish to prevent unintended pregnancy should receive assistance and support from health care providers in choosing an effective method which would fits to their individual characteristics. Moreover, appropriate focus group awareness programmes and counselling programmes need to be implemented in addressing their risk of pregnancy at this stage to improve knowledge on contraception-use.

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A note on living arrangements in Australia during and immediately after COVID 19

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Introduction

Efforts to prevent the spread of the coronavirus pandemic (COVID 19) and reduce the incidence of new cases have resulted in self-isolation, quarantine and lockdowns. These have, in turn created wide ranging disruptions to people's lives including loss of jobs and income due to shutting down of businesses. A consequence of all of this, particularly for the young and young adult, who are living by themselves in lone or shared accommodation away from their parental homes could be for them to change their living arrangements by moving back or intending to move back to their families because, they might not be able to continue to pay rent or mortgages due to loss of incomes. There are anecdotal evidences of such happenings and reports of small surveys, some of which are recorded in the popular media (Domain 2020a).

This research looks at projected living arrangements in Australia and how they might be affected by COVID 19 in 2020 and the immediate future. This analysis could do better with more detailed data, but this note throws light on what could be done to understand the various implications of pandemics or widespread epidemics for people's lives and wellbeing.

Living arrangements in Australia are classified as follows (ABS 2019):

- Family households, which include couple families with children, husband, wife or partner, child, other related individual;
- Couple families without children, which include husband, wife or partner, or other related individual;
- One-parent families, which include male parent, female parent, child, or other related individual;
- Other families, which include related individual, unrelated individual
- Group households;
- Lone person households, which include male lone person, female lone person, or usual resident of a non-private dwelling

The most prevalent living arrangement is that of Family Households, accounting for nearly one half (between 48% and 49%), and the least prevalent living arrangement

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is that of Group Households and Other Families. The rank order of living arrangement types is:

1. Family households
2. Couple families without children
3. One-parent families
4. Lone person households
5. Group households, and
6. Other families

There are only small differences between the prevalence of Couple families without children and One-parent families, and between Lone person households and Group households. The percentage of population living in family households is projected to decline over the 23-year period 2017-2040 while the percentages of population living in all other types of living arrangement are projected to increase during the same period. However, these reductions or increases are slow, but this slow rate of change is a function of the 'low rate of change' assumed in the projection of households, which forms the basis of the projections of living arrangements (McDonald and Kippen 1998).

Impact of COVID 19 on living arrangements in Australia

The COVID 19 pandemic may be seen to affect living arrangements in Australia in two ways: (i) by affecting the economic situation of mostly young and single Australians, and (ii) by affecting the major driver of population change in Australia, namely international migration. Both or either of these could result in young people moving back to live in their family households.

(i) Living arrangements affected by adverse economic situation

It is assumed that about 16 percent of Australians have changed or are changing their living arrangements, according to a St George Bank survey of 1,000 Australians (Domain 2020a).

These 16 percent of people who stated that they changed or wanted to change their living arrangements, appear to have done so to move away from Lone Person Households to other forms of living arrangements as follows:

- 8 percent moving back into Family Households
- 7 percent moving into Group Households
- 1 percent moving into smaller property but remaining in a Lone Person Household.

Assuming that these intentions would remain in force until the economy recovers from the shocks of COVID 19 which, for the sake of this note could be taken as five

years, and applying the above figures to the projected distribution of households over the five-year period 2020 through 2024, Family households and Group household would gain by small amounts at the cost of Lone Person households. However, the rank order of living arrangements would remain as that before COVID 19, namely,

1. Family households (with a very small increase in prevalence)
2. Couple families without children
3. One parent families,
4. Lone person households (with a very small decline in prevalence),
5. Group households (with a very small increase in prevalence), and
6. Other families

(ii) Living arrangements affected by reduced international migration to Australia

With travel restrictions and ban on regular international travel due to COVID 19, at least until the end of 2020 Australia's net migration intake is to suffer a huge reduction compared to previous years. "On the 2018-19 year for net overseas migration, there would be just over a 30 percent fall in 2019-20, the current financial year, and in 2020-21, an 85 percent fall-off those 2018-19 levels as well" (SBS News 2020). By applying these fractions of percentage decline, the reduced migration intake to Australia in the year 2020 is estimated to be 108,110 (instead of 250,503 implied in the assumptions of the Population Projections). It is expected that by 2022, net overseas migration will be restored to the assumed level under Series B.

However, notwithstanding the assumptions about net overseas migration used in the population projections (ABS 2018), the actual migration intake in 2018-19 was 239,600. After applying the 30 percent and 85 percent reductions in migration as predicted above, the estimated migration intake would be 101,839 in the year 2020, much less than what the assumptions in the projections would otherwise indicate.

The 2018-19 Migration data (ABS 2020) show the breakdown of migrants by visa categories (in rounded figures) which are shown in Table 4. By far, the largest group of net arrivals in 2018-19 is that of Students (47%), followed by Visitors (22%) and Family (19.4%). In 2019-20 and probably also in 2020-21, NOM of Students, Visitors and persons on Working holiday would be reduced to almost nil. Therefore, the reduction in migration due to COVID 19 would likely reduce the percentage of people living in Group households and probably increase, very slightly the percentage living in Family or Couple Family households. Thus, If the living arrangements of migrants are considered to be similar to those of the resident population in general, this reduction in the number of net overseas migrants and change in the composition of net migrants due to COVID 19 would not greatly affect the living arrangements prevalent in Australia.

Discussion

The COVID 19 pandemic, which has created a havoc with the economies of the world, including Australia is commonly believed to produce a much adverse effect on living arrangements in Australia, because people, mainly young, and living in non-family households or non-couple families without children would probably be compelled to move back with their families due to loss of income resulting in an inability to pay rent or mortgages and buy sustenance. However, there is little hard data to support this hypothesis. It is also worth remembering that the surveyed sample whose intentions about changing their living arrangements were enquired at the St George Bank survey, comprise only a small proportion of the population in general and only 16 percent of them expressed any intention of changing living arrangements. This is not going to make any massive change in the living arrangements prevailing or projected to prevail in Australia in the grand scheme of things as it were, although living arrangements may have changed more within states/territories as opposed to across the country due to travel restrictions.

By applying the findings of this survey, it is found that the prevalence of living in Lone person households would decline very slightly during 2020-2024, and the prevalence of living in Family households and Couple families without children would increase, very slightly during 2020-2024.

COVID 19 has also affected Australia's migration intake, which is now the major driver of population growth in Australia. While COVID 19 is expected to reduce migration intake by 30 percent in 2019-20 and by 85 percent in 2020-21, its effect on living arrangements is not deemed to be immense.

It would be interesting to consider what, if any impact did the SARS epidemic of 2004-06 or Global Financial Crisis (GFC) of 2007-08 had on living arrangements of Australians. It may be worth mentioning that, neither the SARS epidemic of 2004-06 nor the GFC of 2007-08 warranted lock downs, self-isolation or quarantine in Australia such as what has happened with COVID19. As such, these two past events would not have created job losses and economic hardship due to travel restrictions and closure of businesses on the same scale as did COVID 19. Therefore, one would not expect much change in the living arrangements of Australians due to SAARS 2004-06 or GFC 2007-08.

Any change in living arrangement attributable to the SAARS epidemic of 2004-06 could be inferred from the changes in living arrangement between 2001 and 2006. Likewise, any change in living arrangement attributable to the GFC of 2007-08 could be inferred from the changes in living arrangement between 2006 and 2011. However, the percentages of people living in each type of household has remained very stable

over the three periods indicating apparently no effect of either the SAARS epidemic or the GFC on living arrangements.

In addition to considering that the survey findings on which the present analysis is based, may or may not be generalisable for the entire population, a few other points need to be considered in the context of a not so large effect of COVID 19 on living arrangements. Financial support from the government and other non-government organisations might, to some extent have helped absorb the economic shock of COVID 19, and interstate travel restrictions might have prevented the single-family dwellers from going back home to their parent families. Another point worth considering is that the uncertainties brought about by movement restrictions and job losses due to COVID 19 might have created some inertia among the people to even think about changing their living arrangements.

Conclusion

As time goes on and after travel restrictions are eased one might be able to get a better picture of the impact of COVID19 on the economy and living arrangements. One will also have to wait and see whether job losses will be recouped and how people will respond to possible higher rates of rental vacancies.

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Causes of poverty among elderly people living alone in Sri Lanka

T.H.A.S. De Silva[1]

Introduction

The ageing of the population is commonly defined as the increase in the relative proportion of the elderly in the population (United Nations, 2013). Population ageing in Sri Lanka is accelerating at a faster rate than other South Asian countries and has been increasing rapidly since the 1980s. Between 1981 and 2012, the proportion of the population aged 60 years and above has increased from 6.6 percent to 12.4 percent (Department of Census and Statistics, 2012). The proportion of elders living alone and of those over the age of 60 living in households in which all the other residents are also above the age of 60 increased steadily from 1996 to 2014. However, this system has been eroded due to many reasons, such as fast replacement of extended family by the nuclear family mainly due to decrease in family size and children migrating to urban areas and abroad seeking employment and greener pastures, and specially the female labour force participation (Kaluthantiri, 2014).

"Fundamentally, poverty is a denial of choices and opportunities, a violation of human dignity. It means lack of basic capacity to participate effectively in society. It means not having enough to feed and clothe a family, not having a school or clinic to go to, not having the land on which to grow one's food or a job to earn one's living, not having access to credit. It means insecurity, powerlessness and exclusion of individuals, households and communities. It means susceptibility to violence, and it often implies living on marginal or fragile environments, without access to clean water or sanitation (United Nations, 1998)."

However, the incidence of poverty among older persons is not only based on income, it also depends on factors such as health, education, and labor market opportunities. Thus, poverty is certainly multidimensional (Khan, Khan, Swee Leng, Chen and Vergara, 2017, McKee, 2009).

Poverty among the elderly has been a global concern, as stipulated in the Madrid International Plan of Action on Aging 2002 (Khan, Khan, Swee Leng, Chen, and Vergara, 2017). In the Sustainable Development Goals, reducing Poverty has been discussed as the first topic (United Nations, 2018). Discussions on poverty recognize the elderly population as a group vulnerable to poverty.

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In 2016 in Sri Lanka, the highest poverty headcount ratio at 5.8 percent among males was for those aged 80 years and above and for females in 2016 was 4.9 percent in the 75–79 age group. The national poverty line, which is above $1.90 a day (2011 purchasing power parity [PPP]), shows a different pattern of higher poverty among elders compared with the international poverty line, indicating that the elderly are vulnerable to falling to extreme poverty (Asian Development Bank, 2019). Reducing poverty is one of the prominent objectives of development and identifying the incidence of poverty in old age is an important first step in understanding it. Nevertheless, measurement alone does not explain the causes of poverty. This paper discusses the causes of poverty among elderly people living alone.

Research objective

The objective of this study is to examine the causes of poverty among elderly people living alone.

Methodology

Sample population was consisted of population aged 60 years and above and data were taken from the heads of the households. The aimed respondents were households composed of only the elderly living alone. The study defined "poor" as people with an income below Rs. 5,000 by considering the poverty line of Income and Expenditure Survey 2017 in Sri Lanka (Rs. 4,440). The sample was households (based on the voting lists) from 3 GN Divisions in Balapitiya Divisional Secretariat in Galle District as Galle district was the district with the third highest number of elderly people in 2012. This study used a mixed method approach. Both primary and secondary data were used. Primary data were collected through survey questionnaire and interview method from 120 household heads by using purposive sampling method. Secondary data were selected from the Department of Census and Statistics reports, Divisional Secretariat reports, Grama Niladhari reports etc. Quantitative data were analyzed through SPSS and qualitative data based on causes of poverty among elderly people who were living alone and they were analyzed using thematic analysis.

Results and discussion

The research findings indicate the Causes of Poverty among elderly people living alone. According to their social status 42.5 percent of them were married, 34.2 percent were widowed and 23.3 percent were unmarried. Majority of them had a low level of education and 42.5 percent elders have not received a formal education due to their families' socio economic difficulties.

Financial background

Considering the elderly respondents who live alone, the majority of respondents were low income earners with an income below Rs. 5,000 (83.3%) and they have reported their expenses as approximately Rs. 15,001-20,000. According to their monthly income, this study considered the poor people as the income below Rs. 5,000 by considering the poverty line of Income and Expenditure Survey 2017 in Sri Lanka (Rs. 4,440).

Respondents have a high expenditure on health. For the year 2002, the official poverty line is Rs. 1423 (Real total food and non-food consumption expenditure per person per month). According to the income and expenditure in the sample population, 83.3 percent of the elderly living alone were living under the poverty line. Between 2002 and 2012–2013 alone reduced poverty from 13.2 to 3.2 percent of people living on less than $1.25 a day (United Nations, 2016). Nearly one in four people live on less than $2.50 a day (2012–2013). The living standards of the near poor are closer to those of the poor than those with over $2.50 per day (United Nations, 2018). Respondents could identify the reasons for their current economic situation.

Table 1: Reasons for poverty by sex

Causes	Male (%)	Female (%)	Total (%)
No permanent job	35.5	24	29.75
No plan for elderly life	20.5	30.5	25.5
No government support	10	20	15
Addicted to drugs	20	0	10
Death of spouse	4.5	9.5	7
No formal education	5.5	6	5.75
Divided the property among children	2	6	4
Disabilities	2	4	3
Total	100	100	100

Source: Sample survey, 2017

Global perspective on causes of poverty can be examined with different dimensions such as Government support, Financial planning, Social demographic, Social support (Khan, Khan, Swee Leng, Chen and Vergara, 2017). Many gender differentiated reasons were identified for poverty (Table 1). The majority of elderly women living alone had no plan for their elderly life (30.5 percent). 25.5 percent of the sample population think that because they don't have any government support, they become poor elders. It means that before they became an elderly person they did not receive Samruddhi, Divi Naguma or any other financial or social security support. The lack

of a comprehensive social security system in most developing countries increases vulnerability of the elderly to poverty; especially among older women and the self-employed (Khan, Khan, Leng, Chen and Vergara, 2017). 20 percent of the male elderly respondents have been addicted to drugs from their young ages. Accordingly, poverty is the outcome of personal decisions such as becoming addicted to drugs/alcohol (Khan, Khan, Swee Leng, Chen, and Vergara, 2017). About 6 percent of respondents haven't got a formal education and 3 percent of them were disabled. According to the social demographic reasons for elderly poverty, the incidence of poverty among older persons is not only based on income. It also depends on factors such as health and education (Khan, Khan, Swee Leng, Chen, and Vergara, 2017).

Regarding the age groups of the elderly persons who were living alone, the majority lived under poverty. In their older age, they had to face many difficulties such as disabilities, depression, some of them (5.3%) have neglected to form any social bonds. 15 percent of age 80+ living alone were living in poverty because they didn't have any government support and income security and had also experienced the death of a spouse. The majority of them were female elders. 11 percent of elderly living with a spouse were poor because many of them had divided their poverty among their children and they also didn't have any government support.

Table 2: Reasons for poverty by level of education

Causes	Grade 1-5 (%)	Grade 6-11 (%)	A/L (%)	Higher Education (%)	Total (%)
Haven't a permanent job	53.41	18.52	28.07	-	100
Haven't a plan about elderly life	57.02	18.31	16.82	7.84	100
Haven't any government support	36.67	33.33	30.00	-	100
Addicted to drug	40.00	20.00	20.00	20.00	100
Death of spouse	64.29	21.43	14.29	-	100
Haven't got a formal education	59.13	40.87	-	-	100
Divided the property among children	25.00	50.00	25.00	-	100
Disabilities	32.67	40.33	7.00	20.00	100
Total	46.02	30.35	17.65	5.98	100

Source: Sample survey, 2017

According to the study, from the total respondents, 46.02 percent have only received primary education and the highlighted issue is that 46.02 percent have many reasons for being poor. According to the above table, the level of education has been the major problem for their poverty because a few respondents have received higher education and a considerable majority have a low level of education. Thus, it is clear that when the educational level decreases, it will have a major impact on increasing poverty in

old age. Poorer individuals with low levels of formal education and English language skills, in particular, have less chances of obtaining necessary formal and technical education as they cannot meet the qualifying criteria of most technical and vocational education courses (Arunatilake, 2005).

When examining the poverty by current employment status, majority of the poor elders could identify form agricultural sector. Because they have to expend money for their day-to-day life needs and for seeds, equipment, fertilizers etc.

In developing societies, low savings of the elderly and weak pension schemes make life challenging for the elderly (Kaluthantiri, 2014). Considering the causes of poverty, increasing savings and benefits for senior citizens in the country, and implementing an updated and systematic social security should be considered in policy making. Planning early for elderly life should be considered by younger people. Especially the elderly people who live alone should be considered as the most economically vulnerable community.

Conclusion

This paper indicates that the majority of the elderly living alone are poor people. Among them, female elders were highlighted for many reasons. According to multidimensional poverty elders were poor in income, education, social status and labour participation. Majority of elderly women who live alone have no plan for their elderly life. Considering these reasons, it can be concluded that a higher number of elders live in poverty due to many socio-economic reasons. This is very important in addressing the issues of this vulnerable group.

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Low female labour force participation in Sri Lanka

D.S.P.A.K. de Silva[1]

Introduction

Labour force participation means the active engagement or willingness of people of working age to engage in economic activities included in the System of National Accounts (Semasinghe, 2017). However, the female labour force participation is quite low all over the world compared to the male labour force participation. According to the modeled estimates of the International Labour Organization the global female labour force participation is 47.14 percent, whereas it is 74.20 percent for the males. According to Samarakoon and Mayadunne (2018), about two thirds of the working age women in Sri Lanka do not participate in the labour force but stay at home (Samarakoon and Mayadunne, 2018). The female labour force participation in Sri Lanka is at a low level without much changes overtime. The Labour Force Survey data in 2018 confirms that the female and male labour force participation rates are 33.6 percent and 74.5 percent respectively. The female labour force participation is low due to various economic and social factors which keeps them out from the labour markets. The women's labour force participation tends to be a driver of economic development as it provides the required possibility for the economy to grow and develop with more labour inputs.

Research objectives

The main objective of the study is to identify the Sri Lankan situation of female labour force participation. Specific objectives of the study can be identified as, to examine the trends in female labour force participation in Sri Lanka, to recognize the factors relating to low female labour force participation in Sri Lanka and to suggest policy remedies to improve the female labour force participation in Sri Lanka.

Methodology

The main sources of secondary data were the Labour Force Surveys in Sri Lanka conducted by the Department of Census and Statistics and other official sources in addition to the local and international publications, and unpublished manuscripts. The mixed method is used to analyse data and to draw conclusions. The secondary data were analysed through Descriptive statistics such as line graphs and bar charts using the Microsoft Excel as a quantitative approach where the study is also using the qualitative methods in analysing data.

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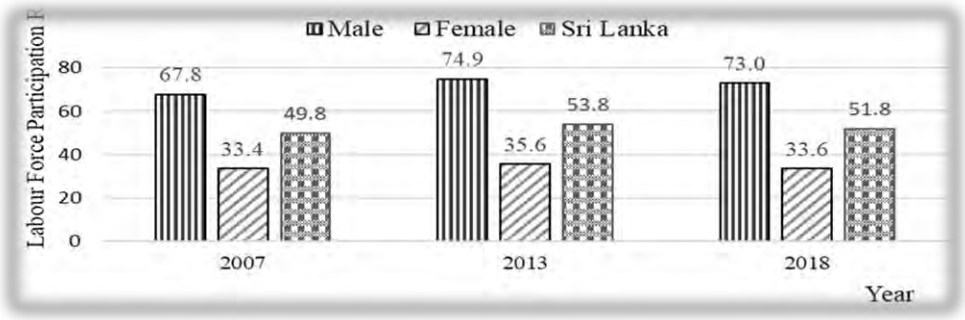
Results and discussion

Current Female Labour Force Participation in Sri Lanka

Figure 1 clearly indicates the low performance of female labour force participation in Sri Lanka over the past decade. It demonstrates that male labour force participation is twice when compared to the female labour force participation.

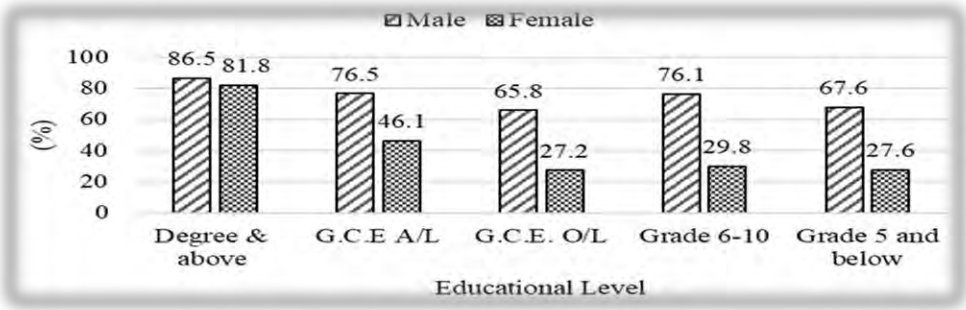
Figure 1: Labour force participation rate by gender 2007, 2013 and 2018



Source: Author's creation based on Labour Force Survey Annual Reports, 2007, 2013 and 2018

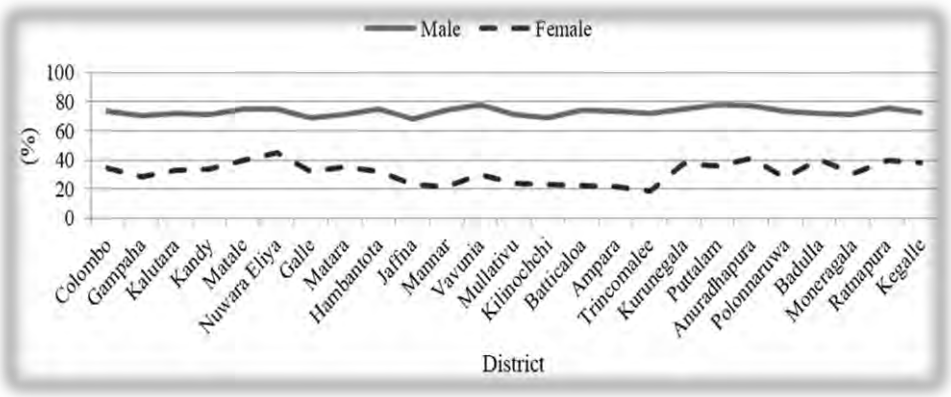
However, it is noteworthy that female labour force participation rate rises as their level of education rises. Moreover, the male-female gap in labour force participation rates is lower at higher educational levels compared to the gap at lower education levels as depicted by Figure 2.

Figure 2: Labour force participation rate by gender and level of education, 2018



Source: Author's creation based on Labour Force Survey Annual Reports, 2018

Figure 3: Labour force participation rate by gender and district, 2018



Source: Author's creation based on Labour Force Survey Annual Reports, 2007, 2013 and 2018

When district-wise performance in female labour force participation is considered, the highest female labour force participation is seen in the Nuwara Eliya District and the lowest female labour force participation is seen in the Trincomalee District. The reason for higher female labour force participation in Nuwara Eliya is probably due to the gender-based role played by women in the plantation sector (Figure 3). Female labour force participation was lowest among the age groups of 15-19 and 40+ in 2018 and those rates were 6.8 percent and 33.8 percent respectively. Female labour force participation in Sri Lanka is lowest in the urban sector recording 30 percent whereas it is 33.6 percent and 48.7 percent in the rural and estate sectors respectively (Labour Force Survey Annual Report, 2018).

Factors associated with low female labour force participation

a. Safety Issues in travelling:

The private sector typically expects women to work night shifts, often without transport facilities. Women sometimes face harassments while traveling and, in such situations, they opt to quit work at such workplaces, or in the worst scenario, to give up their jobs forever.

b. Care giving role:

The caring and rearing role laid on women takes the largest share of their time, especially after marriage. In addition to childcare, caring for the elderly in the household persistently cuts into the time of women hampering their involvement in the labour force.

c. Lack of information about employment opportunities:

Women spend a longer job search time compared to men as they have smaller networks through which they can get information on employment opportunities. Unlike women, men are generally in wider networks and therefore, they have easy and quick access to such information.

d. Social and cultural norms and attitudes:

Social perceptions of women's primary responsibility being housework and childcare rather than labour force activities has a significant impact on female labour force participation.

e. Marital status:

After marriage, most women decide to leave their jobs either on the request of their spouse or due to the domestic responsibilities loaded on them after marriage.

f. Lack of education and skills:

When the education level is lower women are sometimes reluctant to do a job. On the other hand, the skills gained by educated women do not suit the labour market, which highlights a work-education mismatch.

Policy Recommendations

Current gender disparities in labour force participation suggest a misallocation of talent that impedes the achievement of maximum productivity and curbs economic growth. Hence it is critical for policy makers to pay attention on this serious issue. It is encouraging to note that, a task force formed under the aegis of the National Human Resources Development Council (NHRDC) with the goal of increasing the Female Labour Force participation (FLFP) rate to reach 40 percent by 2020. Some policy recommendations on this issue are given below.

Strengthening online vocational training for females is necessary as such initiatives can focus on reducing gender-specific barriers for women to enter the workforce. Facilitating females with the necessary connectivity equipment, toolkits and communication networks would allow them to participate in online vocational trainings that would build their capacity resulting in the creation of a platform for them to support household finances.

Job matching is another essential aspect to explore through suitable coordination mechanism. This could be supported by improving information awareness through programs that focus on awareness-raising, gender equality in the household, livelihood counselling, and job sources. A coordination mechanism between the Ministry of Women and Child Affairs and the Divisional Secretariat Divisions can be easily implemented to reach unemployed women at the Divisional Secretariat Division level. If the mechanism can map all unemployed and willing females with relevant

information on qualifications and skills, the Ministry of Women and Child Affairs can match their profiles with the available job opportunities. This mechanism would be great for the unemployed females to find matching employments.

Governments and all stakeholders need to work together towards eradicating harassment of women in public transport. Well planned female-only transport services can reduce the risk of harassment in existing forms of public transport and provide a socially acceptable way to travel between work and home. Local governments can work together with the transport related authorities to implement a public safety policy to transform public transport into a safe and hazel free mode of transportation.

Conclusion

The share of females in labour force participation has remained at a considerably low level in Sri Lanka for a long period of time**.** This study examined the Sri Lankan situation in female labour force participation and the factors affecting the low female labour force participation. The findings proved that the male labour force participation is nearly two times than the female labour force participation in Sri Lanka. Another finding is that the female labour force participation rates have increased gradually at higher levels of education. Moreover, the male-female gap in labour force participation rate is lower at higher educational levels and the variation in male - female labour force participation is higher at lower education levels. Additionally, when comparing the district performance in female labour force participation the highest female labour force participation is found in Nuwara Eliya district and the lowest female labour force participation is found to be in the Trincomalee District. The results of the study revealed that the safety issues in travelling, caregiving role, lack of information about employment opportunities, social and cultural norms and attitudes, marital status and lack of education and skills as the factors leading to lower the female labour force participation in Sri Lanka. The findings indicate strengthening online vocational training for females, job matching and female-only transport services as key areas requiring policy interventions. A policy framework encouraging and enabling women's participation should be constructed with active awareness of the "gender-specific" constraints that most women face. Failure to address this issue adequately signals an ever-worsening issue for Sri Lanka's economy.

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Non communicable diseases among male inmates and associated factors: A case study of inmates between 30-50 years at Mahara Prison

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Introduction

Non-Communicable Diseases (NCD) are increasingly recognized as a considerable global public health issue. Cardiovascular diseases, cancers, diabetes, and chronic respiratory diseases are the four most common NCDs, causing an estimated number of 36 million deaths each year – 63 percent of all deaths globally (Kuzwayo, 1985). While these diseases affect people of all nationalities, ages, and wealth, there are clear global inequalities in the burden of NCDs, with those in vulnerable situations particularly get affected. There is a clear link between the socioeconomically disadvantaged and NCDs; given that most of the 10 million people imprisoned worldwide are from the poorest and most marginalized sections of society, they are likely to be at greater risk for NCDs. The primary prevention and treatment of NCDs in prisons have, however, been largely neglected. In part, this may be because of a lack of awareness of the global importance of NCDs, but there is also a perception that prisoners tend to be younger than the general population and thus NCDs are not likely to be an issue – even though 44 percent of all deaths in the general population are in people under the age of 70 years (Emma et al., 2019).

The Mahara Prison is a maximum-security prison and is one of the largest prisons in Sri Lanka. Situated in the old city of Mahara in the Western Province, it was built in 1875 by the British colonial government to ease the congestion at the Slave Island prison. It was used to house the prisoners employed in crushing stones at the Mahara quarry. Since its establishment, it has had a police post attached to it. The prison is administrated by the Department of Prisons.

The place where a person is detained for a certain period under various laws is called a prison and the community that has been incarcerated are known as the prison inmates. A person imprisoned may have a communicable disease or non - communicable disease. Therefore, those patients should be considered and given appropriate medication.

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Research objectives

The main objective of the study is to examine the impact of socio-economic characteristics of imprisoned male inmates on their disease status. The sub objectives of the study are to identify the economic and social characteristics of prisoners**,** to study the reasons as to why the prisoners are faced with non-communicable diseases and to study the problems faced by inmates due to incarceration and the action taken by the prison to reduce them.

Methodology

For this study, a sample of 100 inmates from Mahara Prison were selected considering the non-communicable disease conditions of the imprisoned male inmates. The study is based on samples of 100 Mahara prison inmates. Details of data collection is given in Table 1. Quantitative and qualitative data analysis methods were done using SPSS and Excel software.

Table 1: Data Collection Methods

Type of Data	Source of Data	Methods of Data Collecting	Data analysing	Data Presenting
Information's of prisoners in Mahara Prison 1st,2nd,3rd objectives	Primary Data	Mahara Prison (Year – 2019) Questionnaire and Focus group discussion	Descriptive statistical methods	Charts, Tables
Road Data and Land Use Data	Secondary Data	Survey Department	Spatial Analysis	Using Sis Maps (Google Earth)
Reports in prisoners and Health organizations reports	Secondary Data	Mahara Prison (Year – 2019) (reports)	Descriptive statistical methods and Inferential statistical methods	Charts, Tables

Source: prepared by author based on primary and Secondary data, 2019

The Mahara Prison is one of the safest trinity prisons included in the prison systems in the western province - Gampaha district in Sri Lanka. Experiments on health and civics do not happen through the educational system. This study is special as this experiment has been analysed only through quantitative information.

Map 1: Location of Mahara prison

Source: Prepared by author, 2019

Results and discussion

The researcher identified that more than 30 percent of inmates may have a non – communicable disease before coming to prison, but believes that they should be free from that disease when returning to the society. More than 50 percent of the inmates were married and most of them worked in the informal sector. About 60 percent have completed secondary education, but their language skills were not of a high standard. The majority of these detainees were from the Sri Lankan labour force but the researcher believes that if most of them had these non – communicable diseases, the process of rehabilitation and release to society would have failed.

About 60 percent of inmates are free when it comes to non – communicable diseases and their causes but 10 percent of inmates were in poor health. It has revealed that 44 percent are with the poorest health level in the present situation. Eighty percent have used drugs before coming to prison. According to the focus group discussions the prisoners who had used drugs were suffering from heart attacks, diabetes, and high blood pressure. Two persons /inmates who are deeply addicted to smoking were suffering from blood cancer, heart attack, and asthma, etc.

The researcher could identify that diseases like diabetics and heart diseases are common among them when they are prisoned; cancer, Arthritis, High blood pressure are other noticed diseases. The study had been done to identify the procedure in solving the problems that patients face because of non-communicable diseases.

Prisoners mainly faced many problems because of non-communicable diseases and chronic diseases, such as safety issues, inability to undergo treatments and attend clinics, etc.

Conclusion

Most of the group of prisoners were between 30 -50 ages, according to the results, which was done through the study. Most of them were with mental diseases, but had a less tendency to have a remedy, because of the poor knowledge about the disease. Therefore, a dislike for going through remedies and getting the necessary steps for that was to be seen. From this study, the researcher hoped to study the situation of these non-communicable diseases and what steps were taken by the prison for that. It has been exposed through the research that most prisoner's diseases affected not only their jobs, matrimony and educational level but also their economic status and adventurist behaviour.

According to the overall study, preventing non-communicable diseases, the procedures that have to be taken, and upliftment of their policies can be hoped. Meanwhile, it is necessary to see to their health situations, especially in the prison, in the hope of minimizing the prisoners' health problems and making systematic programs. Through these methodologies, prisoners' health and fitness can be protected.

Recommendations

The guiding principle for all prisoners with cardiovascular diseases, cancers, diabetes, or chronic respiratory diseases must be of equivalence of care, that is, they should receive the same standard of care and treatment for their disease in prison as they would if they were in the community. Care and treatment for these chronic diseases have some key elements that should also be provided in the prison setting.

Identification of NCDs

Initial screening when prisoners are first received in prison; they should undergo health screening, including the detection of NCDs. Prisoners who are aware that they have an NCD must be allowed to tell health care staff about their condition and medication. The initial screening also allows staff to diagnose hitherto undetected diseases, such as diabetes by urinalysis or blood test and hypertension by blood pressure monitoring (Emma, 2019). This is particularly important for prisoners who, for a variety of reasons, are often not in contact with the appropriate health services in the community.

Encouragement of self-care

In the community, patients with long-term conditions are encouraged to care for themselves. The prison environment poses particular problems for self-care as security concerns preclude many prisoners from keeping their medication and monitoring devices. The promotion of self-care runs contrary to the ethos of prison regimes, which are designed to disempower prisoners. There have, however, been some promising local initiatives in some countries.

Ensuring access to secondary care

While most prisoners with NCDs can be managed in primary care in prisons most of the time, many will need to visit hospitals for specialist care as outpatients. These visits can pose particular problems as appropriate transport must be arranged and escorts provided. Resource constraints often make this difficult for many prisons, but it is important to recognize and prioritize this particular health need. In some countries, innovative developments to circumvent these difficulties have encompassed the use of telemedicine or initiatives to bring specialists into prisons to visit patients. However, some aspects of the care of NCDs, such as the use of sophisticated scanning procedures, must necessarily be accessed in hospitals and prison regimes must adapt accordingly.

Throughcare

The majority of prisoners will be released into the community at some stage of their lives. Adequate planning to ensure appropriate throughcare is particularly important for those with NCDs. Prisoners should not be released without adequate medication and appropriate arrangements for follow-up in the community.

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Modelling Covid-19 pandemic in Sri Lanka

L. Dissanayake[1]

Introduction

In the context of covid-19 catastrophe, one of the most urgent policy issues is to obtain clearer view on how population dynamics can determine the spread as well as the subsequent containment of the corona virus in Sri Lanka. The world still encounters the severity of the pandemic, instigated by the emergence of a novel kind of coronavirus. Pharmaceutical interventions such as vaccination and antiviral drugs are still not available to suppress and eliminate the virus. It appears that addressing the coronavirus disease 2019 (COVID-19) outbreak will differ fundamentally on the successful implementation of public health measures including social distancing, shelter in place orders, disease surveillance, contact tracing, isolation, and quarantine (Phelan et al., 2020; Pan et al., 2020). Sri Lanka seems fortunate for its effort in handling corona virus spread because of its robust healthcare infrastructure and government's right interventions in right time. Health experts from all over the world have praised Sri Lanka's healthcare system, which has already been made a case study for other countries. Epidemiology is the study of how changes taking place in disease patterns within populations. Therefore, the objective of this study is to use our best understanding of the way the infection is spread through mathematical simulations in the context of epidemiology.

Research objective

The objective of the study is to explain the spread of covid-19 disease in Sri Lanka with appropriate mathematical simulations.

Methodology

Modelling is important because it permits us to make short-term forecasts of what may happen with some degree of uncertainty. These formulations are very useful for health care and other planners to contain further spread of the virus. Data for this study was obtained from secondary data sources available at the Epidemiological Unit of the Ministry of Health Sri Lanka. The type of data used for this study are number of covid-19 cases and number of deaths recorded due to covid-19 during the period from 28th January 2020 to 6th July 2020. Data derived from WHO website for Chile' was also used for this modelling, especially by considering infection rate and

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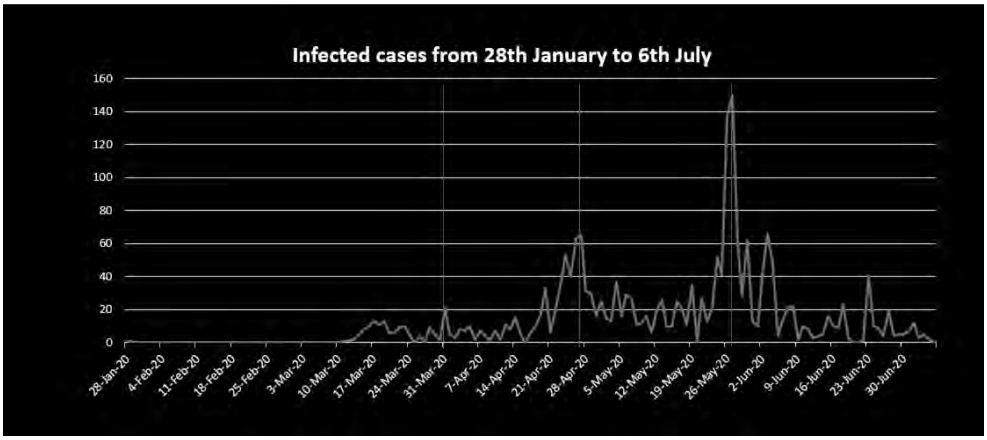
age-specific crude fatality rates. The modelling in this study was done with the use different mathematical functions after several simulations to come up with an appropriate function for a demarcated time period and then its predictability was checked.

Analysis and discussion

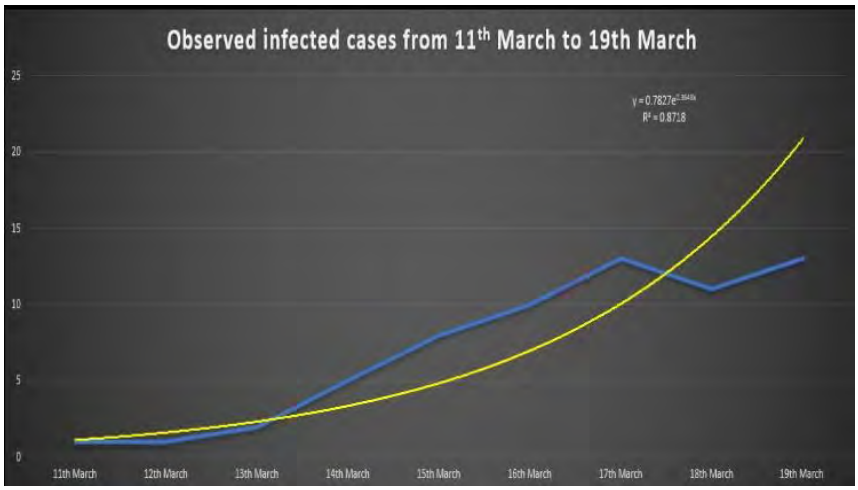
The infected cases from 28th January to 6th July 2020 were examined and then divided them into three phases up to 31st March, 28th April ,26th May and so on and then the trend of the spread of covid-19 disease in Sri Lanka was detected (Figure 1). By looking at the observed infected cases from 11th March to 31st March, an exponential curve was fitted because the objective was to predict the number of covid-19 cases up to end of March in the absence of a proper policy directive. The analysis suggests that if Sri Lankan government had not taken any appropriate policy directive, Sri Lanka should have had 800 cases on 31st of March. However, in reality, only 21 cases were observed on that day. This suggests that the government has taken the right directive to contain the disease during that period. Most importantly, because of the proper action of the government, Sri Lanka was able to avert 779 probable cases (Figure 2 and 3).

Figure 1: Covid-19 Trend: Sri Lanka, 28th January to 6th July 2020



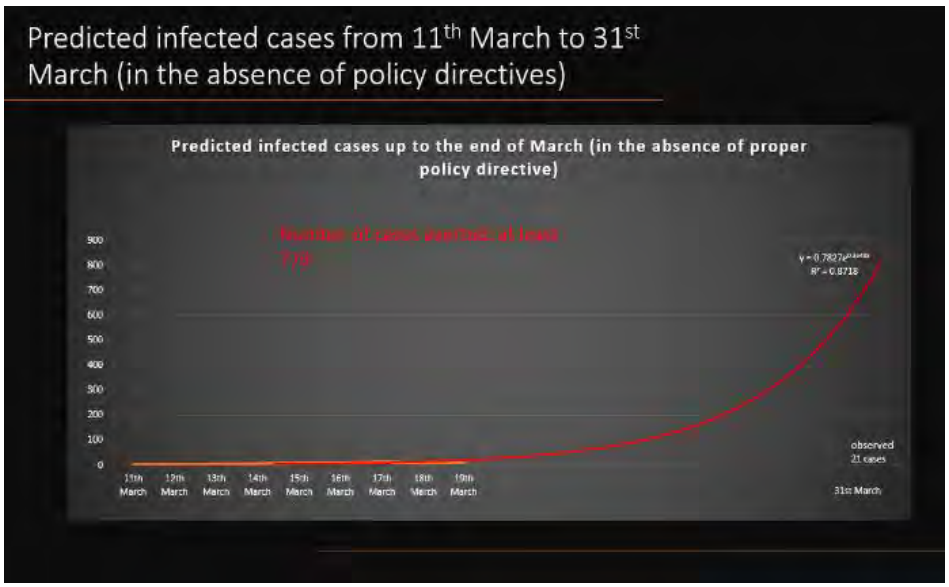
Source: https://www.hpb.health.gov.lk/en

Figure 2: Observed predicted infected cases from 11th March to 31st March 2020



Source: Author's calculations

Figure 3: Predicted infected cases up to the end of March 2020, in the absence of proper policy directive)

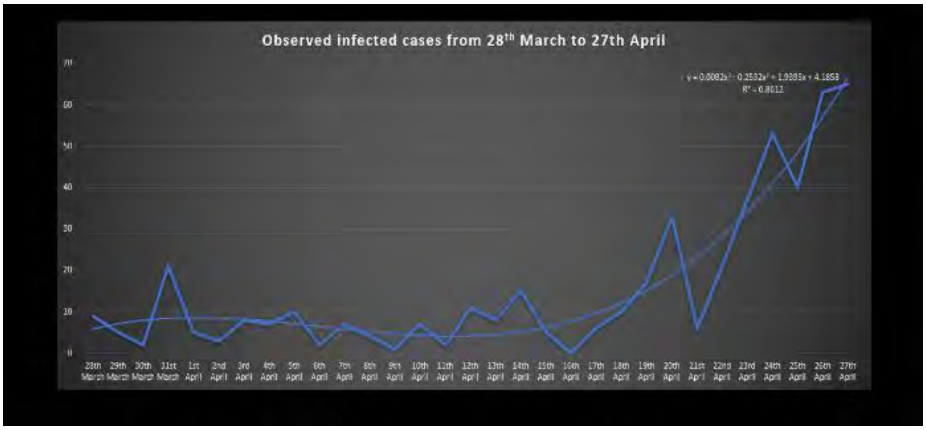


Source: Author's calculations

Similarly, the observed infected cases from 28 March to 27th April 2020 were examined and then fitted the third-degree polynomial function by looking at the trend during the period under study (Figure 4). This helped to predict the infected cases up to 15th May 2020, if there were no any policy directive taken by the government.

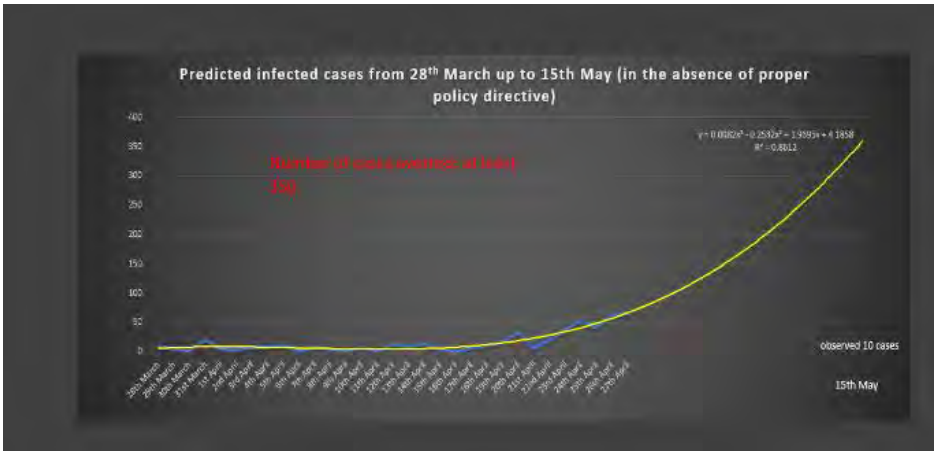
According to this prediction, Sri Lanka would have had 360 cases on the 15th May 2020 but only 10 cases were observed on that day. This suggests that the proper action taken by the government has made possible for Sri Lanka to avert 350 cases (Figure 5).

Figure 4: Observed infected cases from 28th March to 27th April 2020



Source: Author's calculations

Figure 5: Predicted infected cases from 28th March to 15th May in the absence of proper policy directives

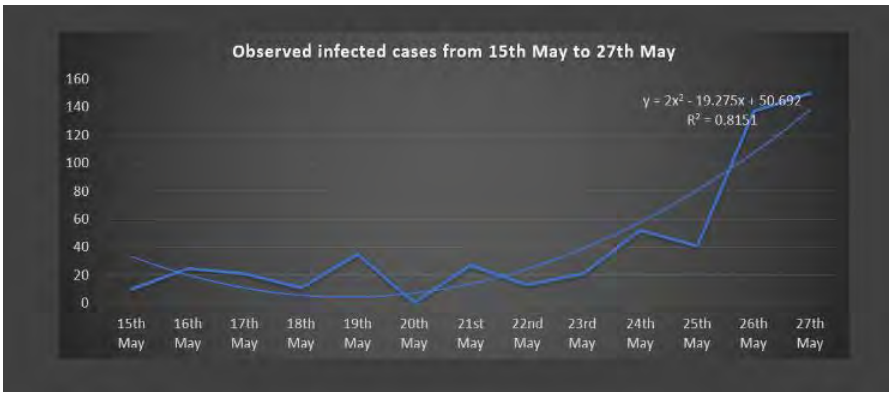


Source: Author's calculations

For the observed infected cases from 15th May to 27th May 2020, second-degree polynomial function was fitted after few simulations. And again, the trend up to 27th June 2020 was predicted. It was found that Sri Lanka would have had 1,242 cases if Sri Lankan government had not taken any proper policy directive. However, because

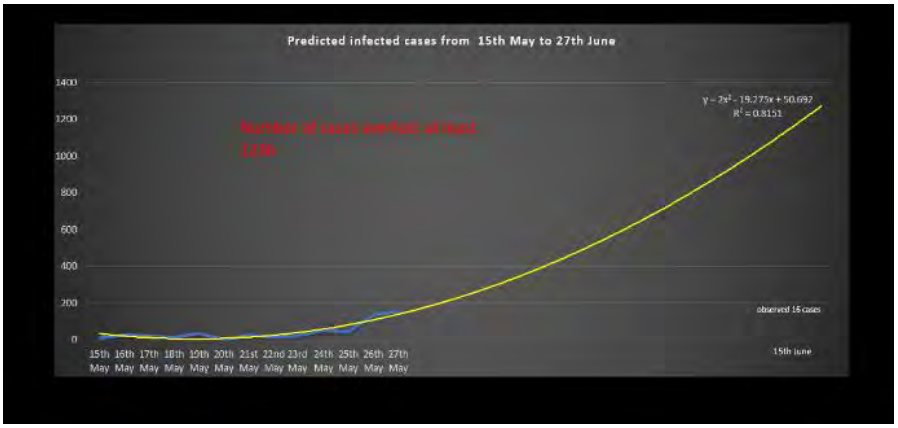
of the right decision taken by the government, Sri Lanka observed only 6 cases, which means the country has possibly prevented 1,236 cases.

Figure 6: Observed infected cases from 15th May to 27th May 2020



Source: Author's calculations

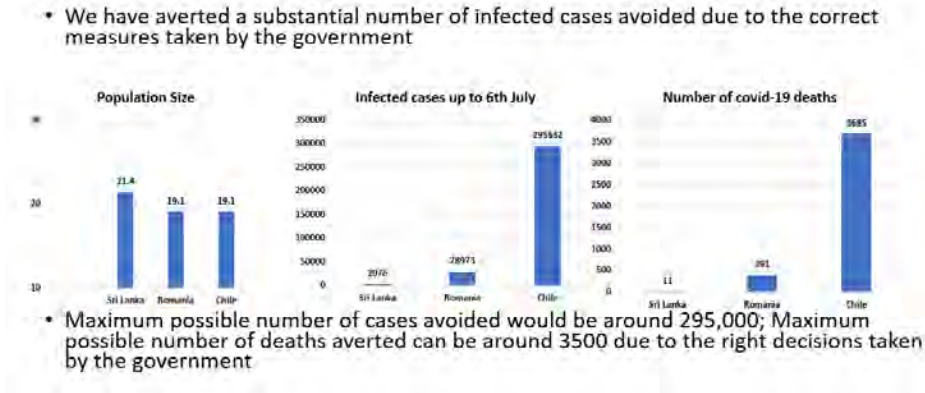
Figure 7: Predicted infected cases from 15th May to 15th June, 2020



Source: Author's calculations

After considering the last stage of the trend, as available data permits to carry out the analysis only for the period from 3rd June to 11th July 2020, a second-degree polynomial function was fitted and then predicted infected cases from 3rd June to 31st July 2020. The prediction shows that number of infected cases would go in an exponential manner. By looking at the trend of the observed infected cases and also the prediction that was made with the use of certain mathematical functions, it reasonable to claim that Sri Lanka has averted a substantial number of infected cases solely due to the correct preventive measures that have been taken by the Sri Lankan government.

Figure 8: Number of possible covid-19 cases avoided, and number of deaths averted by Sri Lanka



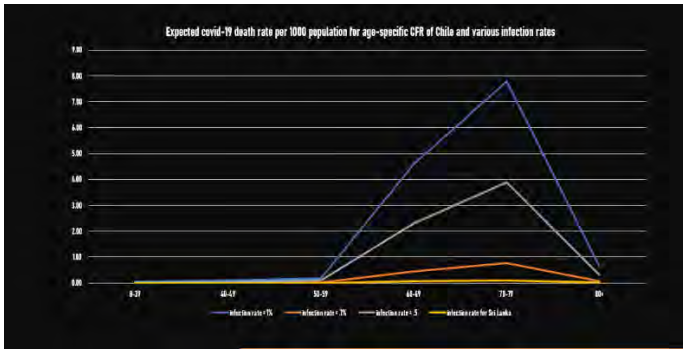
Source: Author's calculations

For comparative purpose, this study used two other populations which are very close to the size of Sri Lankan population although it is important to consider many other aspects in order to find similarity between those populations. In this respect, Sri Lanka was compared with Romania and Chile which have closer to 20 million population. When the number of infected cases as well as Covid-19 deaths up to 6th July 2020 were examined, it was found a substantial difference between Sri Lanka's infected cases to those countries, and especially with Chile. Chile had 295,000 infected cases and 3,685 covid-19 deaths. Therefore, it is reasonable to claim that maximum number of possible infected cases avoided by Sri Lanka up to now would be around 295,000. Similarly, if Sri Lankan government had not taken the right policy decisions, the maximum possible number of deaths occurred could be around 3500. It appears from this analysis, that Sri Lanka has averted about 3,500 deaths because of its correct and timely decision taken to prevent further spreading of covid-19 disease (Figure 8).

Modeling covid-19 disease with age structure of the population will be very useful for the policy planners to understand how the disease affects the age structure and also what type of decisions have to be taken further in order to prevent further spread of the disease. For this, the infection rate and the age-specific crude fatality rates (CFR) were used in the analysis. In the absence of age-specific fatality rates for Sri Lanka, Chile's rates were used in the analysis since the size of the population is similar to Sri Lanka's population. Another important aspect of using Chile's fatality rate is the comparison that can be made between two countries in relation to number of covid-19 deaths, with the assumption that if Sri Lanka had the same age-specific fatality rates, what would be the number of deaths occurring to Sri Lankan population. The analysis suggests there is a strong relationship between infection rate and case-

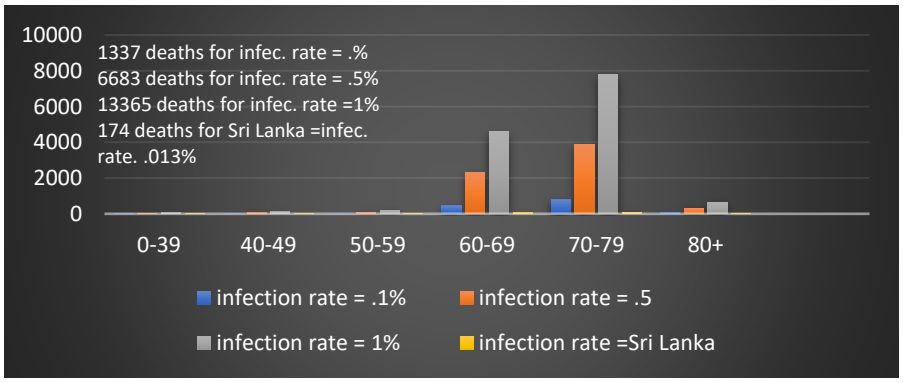
fatality rate. For various levels of infection rates, age-specific fatality rates of Chile, it was found that most affected will be the elderly population (Figure 9 and 10). This analysis further shows that even with current infection rate, Sri Lanka would be performing well. However, if infection rate start increasing, then Sri Lanka will be risking badly to the covid-19 pandemic, especially the country's elderly population. With the CFR values of Chile, and different infection rates, the study calculated the possible deaths that could occur. If Sri Lanka had the same fatality rate with current infection rate, Sri Lanka would have observed 174 deaths occurring to our population. The country is very fortunate to have 11 deaths which is a very low number. If Sri Lanka had eve 0 .1% infection rate, the country would have observed 1,337 deaths. This suggests that controlling infection rate is very important to control the covid-19 disease.

Figure 9: Age structure effects of covid-19



Source: Author's calculations

Figure 10: Expected number of age-specific deaths for various level of infection rate and CFR for Chile



Source: Author's calculations

Conclusion

In order to model covid-19 pandemic, mathematical functions were fitted to the trends observed in the infected cases observed over different time periods and then compared with Chile', which has a similar population size by applying its age-specific crude fatality rates by holding infection rate of Sri Lanka to the Sri Lankan population. This modeling provided a clear understanding of how many covid-19 infected cases and deaths were averted by Sri Lanka because of the use of health infrastructure and government's right intervention strategies. The analysis proved that maximum number of possible infected cases avoided by Sri Lanka up to now would be around 295,000. Similarly, if Sri Lankan had not taken the right policy decisions, the maximum possible number of deaths occurred could be around 3,500. It appears from this analysis, that Sri Lanka has averted about 3,500 deaths because of its correct and timely decision taken to prevent further spreading of covid-19 disease. The analysis further showed that controlling infection rate is very important to contain the covid-19 disease.

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Characteristics of aging population in Sri Lanka and its economic implications

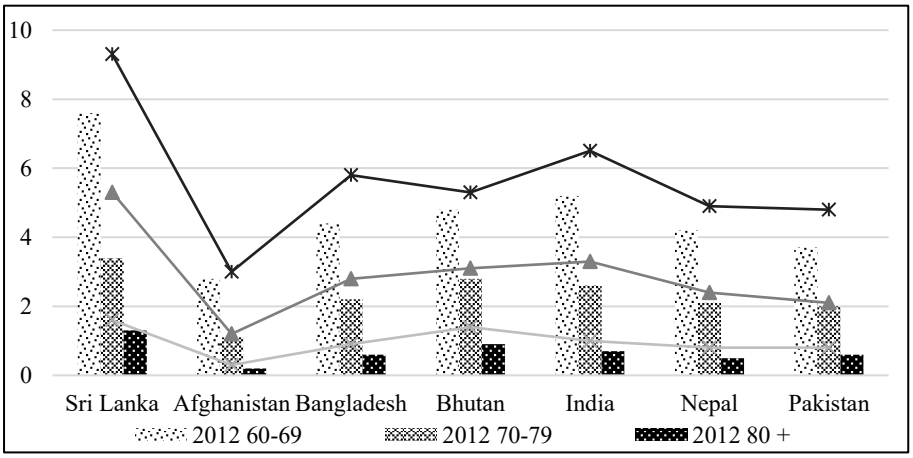
A. N. Fernando[1] and Y. K. N. Kandewatta[2]

Introduction

Population ageing, is identified as a key global demographic, economic and social challenge involving an increasing share of older persons in the population, and is more commonly experienced in developed nations. The greatest change which could be called as achievement of the last century is the drastic decline in fertility and mortality and improvement in the life expectancy and greater longevity. The result of this greatest achievement is an increase in the aged population throughout the world. Therefore, the consequences of ageing in the short and long term have become the subject of heated discussion among the demographers, sociologists, economists, and policy specialists.

In 2018: persons aged 65 or above outnumbered the children under five years of age globally. According to World Population Prospects: the 2019 Revisions; by 2050 one in six people in the world will be above the age 65 (16%) compared to the 11 percent in 2019. Furthermore, the number of persons aged 80 years or over is projected to triple from 143 million in 2019 to 426 million in 2025. With this global backdrop, as stated by Perera (2017) projections for South Asia for 2022 illustrate that Sri Lanka will continue to have higher proportions of aged population than the other South Asian countries as it did even in 2012 – a decade ago.

Figure 1: *Ageing population in South Asian Countries* (2012 vs. 2022 est.)



Source: Authors' creation based on UNPF, 2017.

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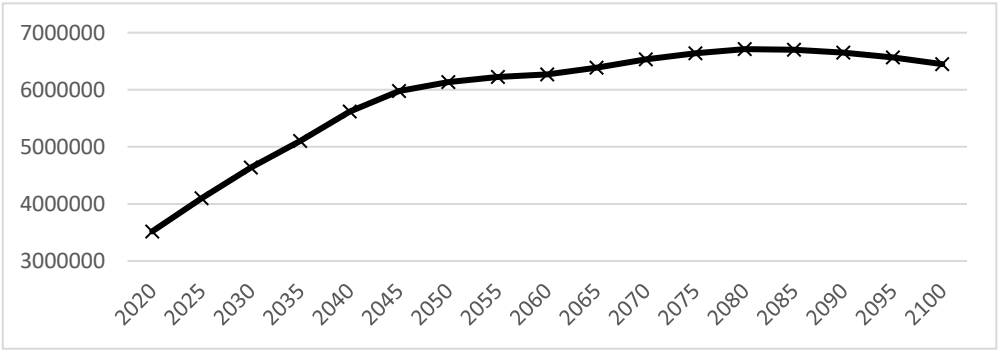
Literature on population studies identifies that Sri Lanka is one of the first countries to have achieved demographic transition in South Asia. The process of ageing in Sri Lanka has been somewhat rapid since 1980s and it is expected that it will reach the level of 24.8 percent in 2041 (Perera, 2017). This means that by 2041, one in every four persons in the Sri Lankan population will be an elderly person.

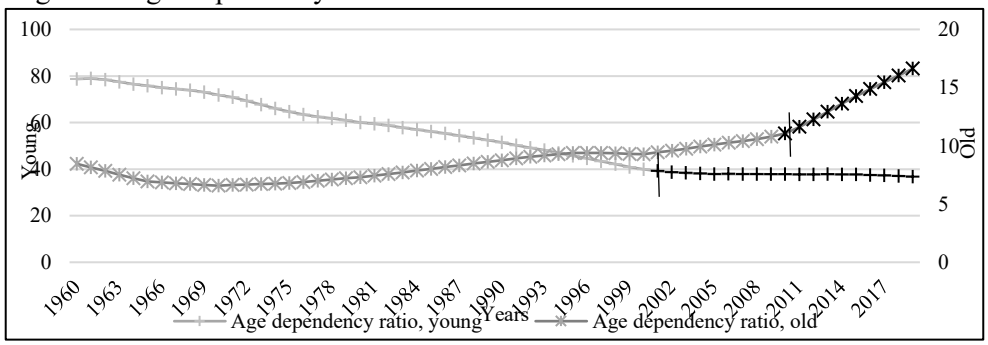
Figure 2: Population Projections - aged 60+



Source: Authors' Creation based on World Population Prospects 2019

These demographic changes will have diverse effects on the economy. These changes will require policy interventions and behavioural changes not only from the perspective of the elderly but across the life cycle of all individuals including the young today (ADB, 2019). In other words, it will be necessary to prepare for an ageing society. The ever-growing elderly population, the contracting labour force and the declining trend among young dependants (see Figure 3) propose challenges and opportunities to the country in a multidimensional design. Thereby, it is of timely importance to investigate the socio-economic impacts that Sri Lanka is facing in a contemporary sense as well as possible prospects for the future, by studying the characteristics of the ageing population in Sri Lanka.

Figure 3: Age Dependency Ratio – Sri Lanka



Source: Authors' creation based on Health Nutrition and Population Statistics, 2020

Research objectives

This study aims to investigate the characteristics pertaining to the ageing population in Sri Lanka and thereby draw implications to the country through an economic perspective. The sub objectives of the study are to identify the demographic, economic and social characteristics pertaining to aged population, analyse the social and economic impacts on a contemporary sense and draw inferences about possible future challenges and opportunities that could arise due to projected trends in ageing population in Sri Lanka.

Methodology

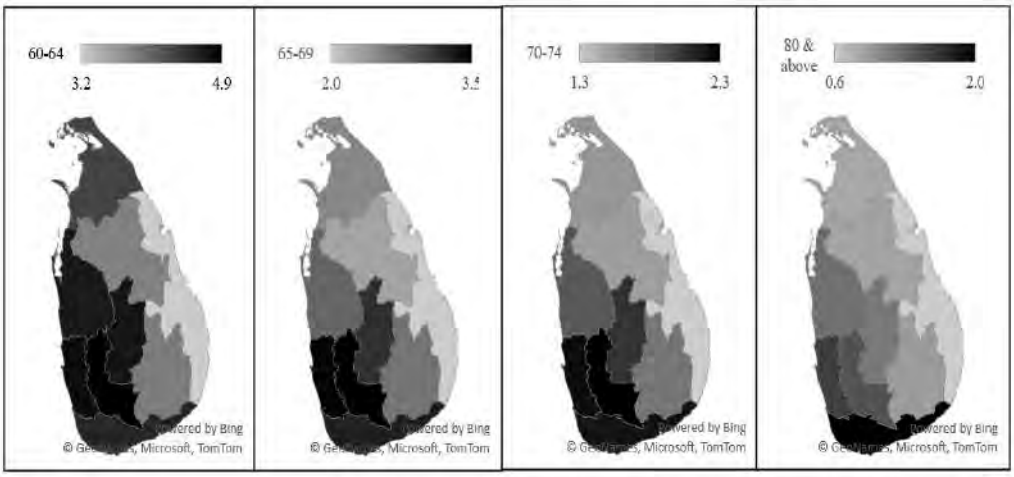
The study uses secondary data from different sources including the Census of Population and Housing Reports, World Population Prospects, United Nations Population Fund, Health Nutrition and Population Statistics. The study conducts a basic descriptive analysis in identifying the characteristics of aged population in Sri Lanka and an extensive SWOT (Strengths – Weaknesses – Opportunities – Threats) Analysis in discussing the implications of ageing population in an economic perspective on a contemporary as well as futuristic approach.

Results and discussion

The discussion as described in the methodology will be segregated into three parts according to the objectives listed above. Thereby initially the analysis will focus on recognizing the salient characteristics of the aged population in Sri Lanka.

In terms of the distribution of the aged population according to different age categories it can be observed that most of the old-old population were distributed in the Southern Province while data suggests that the young old were widely distributed in the Western and Sabaragamuwa provinces in 2012, who may have now be approaching the old-old category.

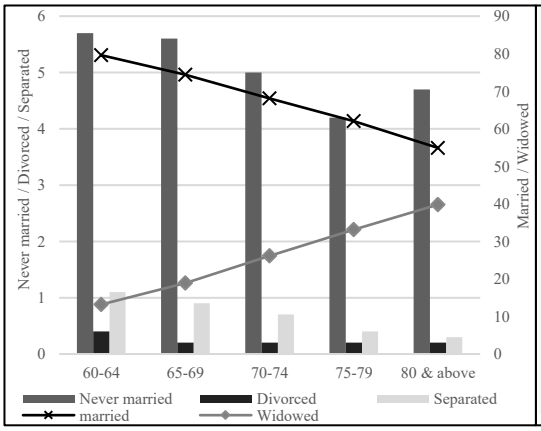
Figure 4: Percentage distribution of ageing population according to province



Source: Author's creation based on Census of Population and Housing of Sri Lanka, 2012

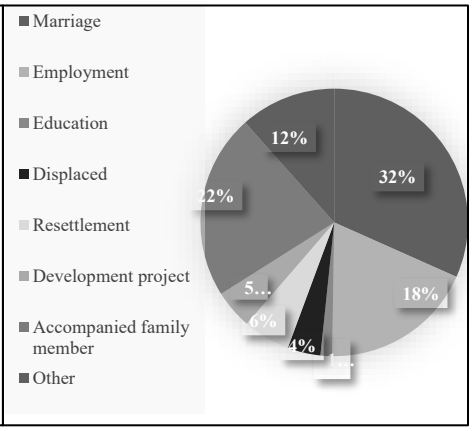
It is interesting that the female percentage distribution of aged population is greater than that of males across all age categories, for example at 4.7 verses 4.3 at 60-65 and 1.6 verses 1.1 at 80 and above and, is consistent in terms of the differentials of life expectancy at birth. It was observed that nearly 80 percent of the young-old were married, it was disturbing to identify that close to 50 percent of the old-old population as a percentage of the population 15 years and older were either never married or widowed.

Figure 5: Percentage Distribution of Ageing Population according to marital status



Source: Authors' creation based on Census of Population and Housing of

Figure 6: Percentage of migrant ageing population



Source: Authors' creation based on Health Nutrition and Population

Figure 6 refers to the percentage distribution of migrant population aged 60 years and above; out of which 41 percent have migrated due to marriage and 30 percent as an accompanied family member. There have thus been, close to 23 percent of aged population who have migrated due to displacement, resettlement, development projects and other unclassified reasons.

Elderly population also depicts certain inevitable characteristics of disability in terms of visual and hearing impairments. In this sense, among the old-old population nearly 40 percent suffered from visual impairments while another close to 35 percent reported hearing impairments. Other types of difficulties such as walking, communication, cognition and self-care are also commonly observed among the aged population in Sri Lanka in 2012. Another salient characteristic among the elderly community with difficulty was that less than 20 percent of the young old remained economically active while among those who were economically inactive close to 60 percent of young-old were those who were unable to work or too old to work and less than 10 percent received an income or pension.

By and large, majority of the population serves in the private sector and serve as own account workers which also accounts to informal sector of the economy. Among the aged population more than 50 percent of the economically active population are own account workers which implies characteristics of informal and daily wage earnings.

All these features create the platform to bridge the dialogue to analyze the economic implications of the identified demographic changes and characteristics in Sri Lanka.

Economic implications

Contemporary characteristics provided useful insights to the income opportunities and exposure to expenditure patterns among the aged population. The minute sources of income generation and the vulnerability of the economically active segment of aged population pose challenges to manage their expenditures with rising health complications resulting from ageing process. Healthcare expenditure can be expected to be compromised by consumption-based needs while rising out of pocket expenditure and declining personal savings would be more salient.

Large informal sector dependence and impact on daily wage earners among the aged population is another economic concern. It was observed that the proportion of population employed in public services were much lower in the population across all age groups depicting the lack of government pension schemes to support their finances in old age. Furthermore, private sector employment which was also at average levels which offers EPF and ETF provides some relief at retirement. However, most of the population does not possess such luxury. This could also be depicted through violation of decent working conditions where the aged population

engage in employment under minimum working conditions to finance their needs in old age. Another inevitable socio-economic aspect of ageing is the role of female headed households. It was observed that in 2012: 52.7 of households were headed by married females and 35.6 were headed by females who were widowed across all aged categories of elders.

Figure 7: SWOT Analysis

Strengths	Weaknesses
✓ Educated people ✓ Health System coverage around the country ✓ Can learn from countries that are already going through similar situations	✓ Low quality health in rural areas ✓ Economic opportunities are limited in rural areas ✓ Lack of financial resource availability ✓ This may lead to high dependence of the country on debt
Opportunities	**Threats**
✓ Improve retirement age ✓ Improve health facilities – expand ✓ Change lifestyles ✓ Increase female labourforce participation ✓ Invest in lifelong learning -increase productivity ✓ Formalize the economy	✓ Public Health expenditure may increase substantially ✓ Informal sector dependance ✓ Trade union actions against policy changes ✓ Rising debt would generate economic drawbacks ✓ Delays in establishing needed policy changes

Source: Authors' comments

Finally, prospects of shrinking nature of the labour force participation rate and expanding ratio of elderly dependents signal the need for planning for population ageing in Sri Lanka. Thereby, the economic implications identified in the previous section can be analyzed in terms of the strengths, weaknesses, opportunities, and threats of ageing population in the context of Sri Lanka.

Conclusion

This paper identified the predominant need to explore the underlying characteristics among the aged population in Sri Lanka as implications of population aging is likely to have widespread repercussions far reaching from the spear of demography. Thus, identifying population trends and their future behavior is mandatory for sound policy making to deal with this development without compromising the economic wellbeing of the country. As per above analysis: it illustrates the under-utilization of the young aged population, insecurity of women-headed households and income insecurity of people who are engaged in informal economic activities are areas that needs to be paid careful attention to in policy making in order to manage these issues effectively. In order to do so the SWOT analysis presents a critical path assessing different aspects

of strengths, weaknesses, opportunities and threats that Sri Lanka is facing with the ageing population.

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A sociological study on Alzheimer's disease related stigma in society and its effect on family members caring for the elderly person with the disease

H.M.W. Fernando [1]

Introduction

Alzheimer's or senile dementia is now considered to be the single most devastating illness of old age. There are several causes of Alzheimer's disease (AD) such as structural abnormalities, neurofibrillary tangles, senile plaques, the role of genes, and the role of environmental factors. However, the characteristics of AD are strongly associated with aging as well as ageism and aging stereotypes beyond the medical sphere. Therefore, AD is more than a disease; it is also a socially constructed illness with powerful labels that can engender fear and amplify the negative impact of the illness. Most of the time, people with AD face isolation and social withdrawal, interpersonal stress, depression, and loss of dignity because of the stigma related to it. It is also important to note that although it is widely assumed that elderly persons with AD are victims of stigmatization, limited attention has been paid to family stigma: i.e., the phenomenon of family caregivers also being victims of stigmatization. Therefore, this study mainly focused on the experience of courtesy stigma of family members that care for elderly persons with the AD.

Research objectives

The research objectives of the study is to explore AD related stigma in society and how it affects family members who care for the elderly person with the disease. The research questions of the study were identified as: What are the stigmatizing conditions associated with the disease in society? How does AD related stigma affect the family life of the family members caring for the elderly person with the disease? How does AD related stigma affect the social life of the family members caring for the elderly person?

Methodology

The sample of the study consisted of 15 family members of elderly persons diagnosed with Alzheimer's disease in the Colombo district and all of them were primary caregivers of the elderly person. The sample selection method was purposive random sampling, regardless of the gender of the respondents. In addition, primary data collection was undertaken using in-depth interviews with all the respondents in order

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to collect qualitative data to identify how AD related stigma existed in society and how it affects the family and social life of the family members caring for the elderly person with the disease. Thematic analysis of qualitative analysis was used to analyse how the AD related stigma in society affects family members caring for the elderly person with the disease under different themes.

Results and discussion

The findings of the study revealed that it is not possible to distinguish Alzheimer's disease from aging. Furthermore, AD is basically associated with ageism and stereotypes of aging in society. It was also revealed that persons with AD are likely to experience double discrimination since it is linked to aging. The findings elaborated that the social stigma attached to mental health illness is related to the stigma attached to AD in the society. Therefore, elderly persons with AD are considered as people who are suffering from an incurable mental illness and are associated with connotations such as loss, confusion, danger, dependence or devastation. In addition, in the cultural context, stigma associated with AD arose under the concept of prevalence. That is, as a consequence of sin in a religious sense. On the other hand, these elderly people with AD were also identified as displaying deviant behavior that was inappropriate in society. One of the major stigmatizations associated with AD, in particular, was identifying them as people experiencing death in slow motion. This study then focused on how Alzheimer's disease related stigma affects family and social life of the family members caring for the elderly person with the disease. As mentioned above, the public cultural view of AD related stigma in society presents a negative representation of what AD means for people who have it. Furthermore, the study revealed that when one member of the family has a stigmatized illness, other members fear and experience courtesy stigma. Therefore, it is not only the victim that suffers; families suffer as well and they also become victims of stigmatization.

However, in terms of concerns about how Alzheimer's disease related stigma affects family life the findings revealed that family members caring for the elderly person with the disease are more susceptible to a great deal of interpersonal stress due to the stigma associated with old age as well as the disease. The data also showed that staying with a person who is considered as dying in slow motion and considered as mentally ill was stressful and a burden on the family life of the family members. According to the findings of the study, family members caring for the elderly person with AD always try to fix misbehavior of the person with AD. Most of the time this is undertaken because their bizarre behaviours challenge dominant social norms regarding appropriate conduct, and encounters with others can be awkward. In

addition, concerning how Alzheimer's disease related stigma in society affects social life, the findings revealed that they had experienced embarrassment or shame in situations when the ill family member's behaviour was described as a clear violation of social norms. It further reveals that maintaining social contact can be particularly challenging for people living withAD as well as their family carers. Furthermore, most of the respondents stated that they experience stigmatization because of their affiliation with the stigmatized individual rather than through any characteristic of their own. Therefore, most of the respondents stated that they are identified as a family member of the elderly person with the disease and had experienced a loss of dignity.

Conclusion

The findings of this study have shown that family caregivers of persons with Alzheimer's disease experience courtesy stigma, the complexity of the stigma, and its negative impact. In addition, ageism and the stigma attached to it not only affect people with mental health illness including Alzheimer's disease, but also those affiliated with the stigmatized individual. This occurs at all levels of society. Therefore, it is important to evaluate the longitudinal effects of stigma on family and social support in order to develop a more definitive causal model of stigma and its consequences. Therefore, a better understanding of the causes and effects of stigma can lead to interventions that reduce its impact.

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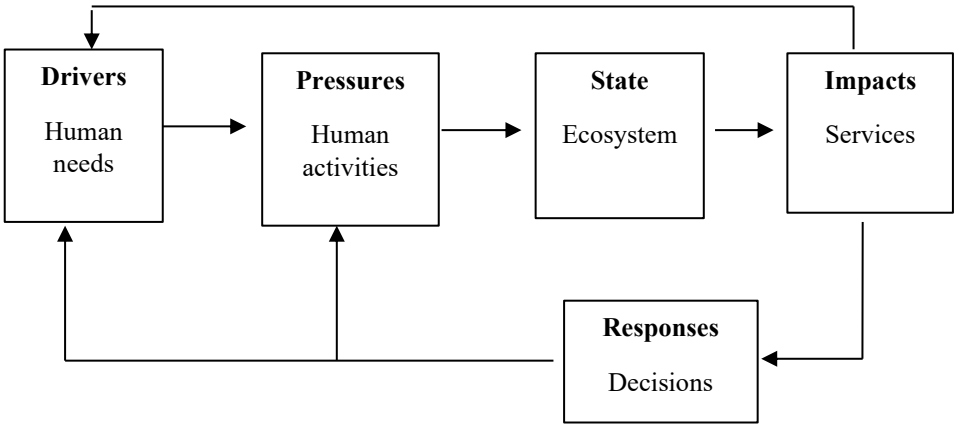
An application of the DPSIR framework in assessing household carbon emission

K.L.W.I. Gunathilake[1] and C.M.K.N.K. Chandrasekara[2]

Introduction

An approach using a conceptual framework will essentially help researchers to avoid deviations from the objectives of the study. The Driver-Pressure-State-Impact-Response (DPSIR) framework is a flexible structure that can be used to strengthen the interconnectivity of a study process. This framework provides a platform to streamline the collection, the analysis and the response to data related to the environment (EEA, 2001; Svarstad,et al, 2008; Coponigro and Iannucci, 2010). The DPSIR framework can further be illustrated as follows using a diagram (Figure 1).

Figure 1: DPSIR Framework



Source: European Environment Agency, 2001

This framework can be used as an effective approach to address many social, economic, and environmental issues prevailing in the world and this research discusses one of the case studies conducted to assess the regional trends and spatial distribution of household carbon footprint using the DPSIR framework. Being the basic building block of living beings, carbon plays an important role in the existence of living beings while being available in all three forms; solid, liquid and gas. The carbon budget is available to balance the cycling of carbon between different pools of carbon and this equilibrium is often interrupted by higher admission of carbon from human activities. Population growth, economic development, energy use and fossil

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fuel combustion are identified as the major trends and drivers of carbon emissions (Carbon Trust, 2007). These drivers have paved the way to quantify the emission amounts with the introduction of the carbon footprint calculator by developed countries in 2000. This study has been conducted to identify the Drivers, Pressures, States, Impacts and Responses for regional trends and the spatial distribution of household carbon footprints in Balangoda Divisional Secretariat Division.

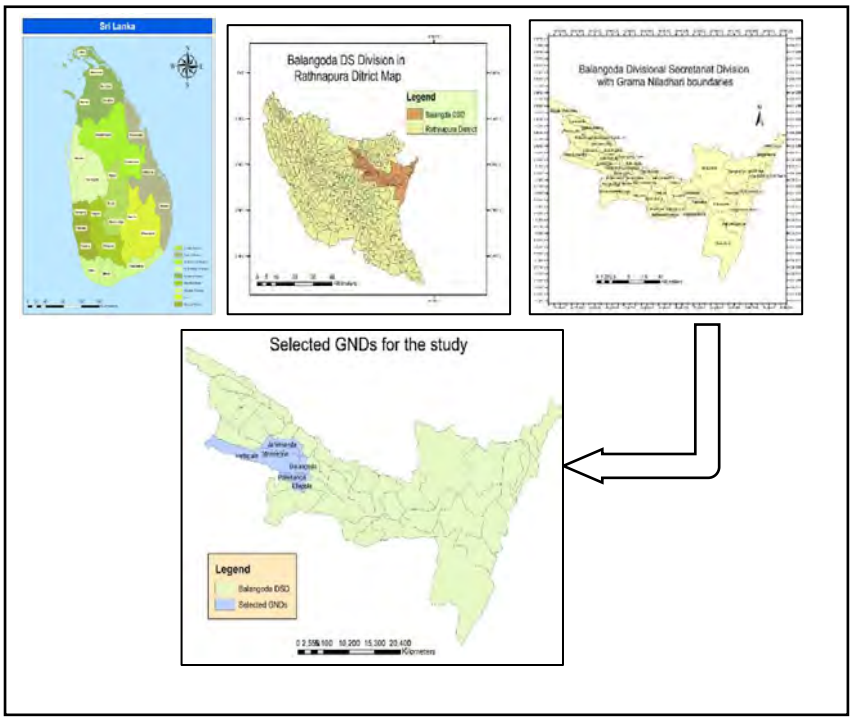
Research objective

The objective of the study is to identify the Drivers, Pressures, States, Impacts and Responses of household carbon emission in Balangoda DS Division.

Methodology

Balangoda Divisional Secretariat (BDS) located in Rathnapura district Sabaragamuwa province was selected as the study area for this study. The BDS area includes 53 Grama Niladhari Divisions (GNDs) and 23527 households (Balangoda Divisional Secretariat Division, 2017). Figure 2 shows the absolute and relative location of the study area.

Figure 2: Location of Balangoda Divisional Secretariat Division



Source: Prepared by the author using Arc GIS

The study was carried out in six selected GNDs namely Pallekanda, Massenna, Ellepola, Jahinkanda, Balangoda and Pettigala by compositing a set of separate maps showing the spatial distribution of different carbon encouraging potentials (fuel consumption, electricity consumption, land surface temperature, vegetation index, population density and land use) using the secondary data obtained from the resource profile of BDS, 2018. A questionnaire survey was done in 10 percent (251) of the total households belonging to each GND to collect quantitative data related to the fuel consumption in food preparation, transportation and the data related to household secondary expenses. A handheld Garmin eTrex 10 GPS receiver was used to record the geographic coordinates of the locations of the households.

Compositing and reclassifying options available in Arc GIS 10.5 were used to identify the areas with high, medium and low magnitudes of the distribution of the potentials of carbon emission to identify the GNDs for questionnaire survey. Carbon footprints pertaining to each household were calculated using an online carbon footprint calculator. The principal component analysis was performed using IBM SPSS Statistics v23 software to identify the major drivers of carbon emission. Inverse Distance Weighted (IDW) interpolation technique in the spatial analysis tools in Arc GIS 10.5 software was used in the final analysis to identify the most vulnerable and critical areas of carbon emission.

After analyzing the data through the integrated use of Arc GIS software packages along with statistical analysis methods, DPSIR framework has been applied as a cause and effect analysis tool in identifying Drivers, Pressures, State, Impacts and Responses related to the spatial distribution and regional trends of household carbon footprint. Maps and graphs have been prepared in visualizing the results of the analysis.

Results and discussion

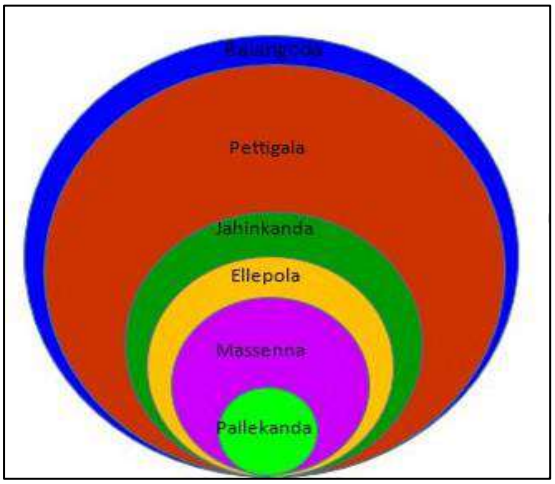
Overall emission of the area

Table 1: Summary of the carbon emissions in selected GNDs.

Carbon emission Magnitude Level	Name of GND	Emission Amounts in $MTCO_2e$	Nature of Settlement
High	Balangoda	106.25	Urban
	Pettigala	102.35	Urban Estate
Medium	Jahinkanda	64	Ruban
	Ellepola	54	Ruban
Low	Massenna	45	Rural
	Pallekanda	23	Rural

Source: Sample survey, 2018

Figure 3: Overall Carbon footprints of the six selected GNDs.



Source: Sample survey, 2018

The carbon emission amounts have been measured in Metric Tons of Carbon Dioxide equivalent ($MTCO_2e$). According to the findings, Balangoda which is identified as an urban settlement records the highest emission while Pettigala which is an estate settlement with more closely located line settlements records the second highest. Jahinkanda and Ellepola GNDs which were urban areas, recorded moderate levels of emission which ranged between 50-65 $MTCO_2e$ where the two rural settlements Massenna and Pallekanda recorded the lowest emission levels. After identifying the overall carbon emission of the area, the DPSIR framework has been applied to identify the Drivers, Pressures, State, Impacts and the Responses to manage the emissions.

Driving forces of household carbon emission

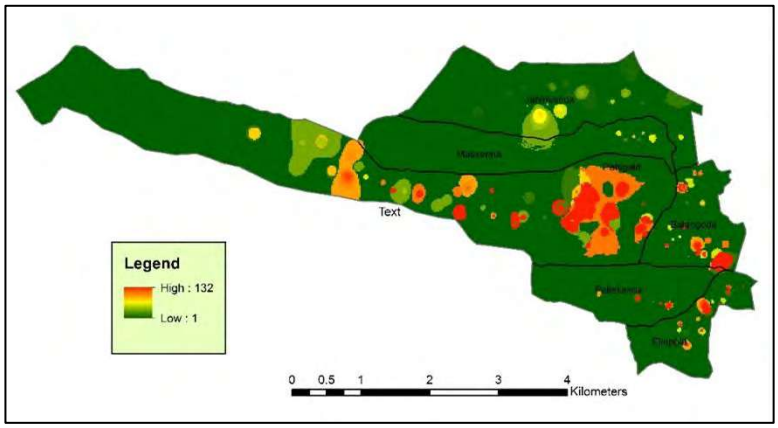
Principal Component Analysis was performed to identify the most prioritizing components among the carbon emission factors in the study area and five major components were identified namely, secondary expenses based on primary necessities, household size and electricity consumption, transportation, finance and media, and energy consumption for food preparation. The combination of interpolation maps prepared under each factor could be identified. Pettigala GND was the most vulnerable area for household carbon emission in the study area (Map 1). The study further revealed that the nature of the settlements, household size, income levels and low education are the main driving forces that have enhanced the carbon emission of the area. Pettigala which was highly vulnerable for carbon emission was an estate settlement where more than 85 percent of its households were closely located line settlements. Nearly 88 percent of the households had more than five members in each and they were all living under minimum basic facilities. Majority

of the population (77%) only had primary education. The study emphasized these factors as the major driving forces that have encouraged carbon emission in the area.

Pressures of household carbon emission

The identified driving forces of household carbon emission have exerted pressures on major sources of anthropogenic carbon emission such as household fuel consumption (2.24 $MTCO_2e$), electricity consumption (2.91 $MTCO_2e$), vehicle usage (8.65 $MTCO_2e$) and secondary expenses (381.86 $MTCO_2e$) to emit more carbon to the environment. The emissions based on secondary expenses show an increased amount as they mainly depend on the lack of awareness and lower educational levels of the people. These anthropogenic sources are identified as the major pressures of household carbon emission in the study area.

Map 2: Area of Balangoda Divisional Secretariat Division



Source: Sample survey, 2018

State of household carbon emission

"State" in the DPSIR framework can be identified as an eye opener for the study as the State shows the current status of the problem. Currently, Balangoda and Pettigala GNDs (urban areas) have the highest contributions mainly from secondary expenses (101.04 $MTCO_2e$) based emissions and from vehicle based emissions (0.54 $MTCO_2e$) marking the least total emissions in Massenna (45 $MTCO_2e$) and Pallekanda (23 $MTCO_2e$). These emissions have caused a considerable impact on the health of the people and on the environment of the area.

Impacts of household carbon emission

The study has identified both visible and invisible impacts of household carbon emission. 89 percent of the informants suggested that there is an increased heat in the

urban areas compared to the last three decades. Approximately 30 percent of the informants in rural areas suggested that they are suffering from respiratory diseases like wheezing due to direct exposure to smoke emitted from firewood and husk hearths. Although the impact on the environment is not visible to the naked eye, it is immense. Therefore, it automatically directs the responsible authorities to derive responses to reduce carbon emissions.

Responses of household carbon emission

Responses for the impacts of household carbon emission still remain untouched as this quantification is relatively new for countries like Sri Lanka. The study reveals that the awareness and the knowledge of people on eco friendly energy sources like biogas and solar energy is low. The use of electric vehicles and lower secondary expenses may also reduce the hidden contribution to the total carbon footprint of the country. This study focuses on bringing awareness among the responsible authorities to encourage the general community to lead a lifestyle that produces lower carbon emissions.

Conclusion

The DPSIR framework which has been applied in this study identifies the Drivers, Pressures, State, Impacts and Responses related to the household carbon emission of the area. The study further identifies some different aspects that are needed to be addressed in providing solutions for environmental issues. Therefore, the results of this study conclude that identification of main causes and effects of household carbon emission of a region is vital for developing countries like Sri Lanka.

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The (in)adequacy of public expenditure on tertiary education in Sri Lanka

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Introduction

Sri Lanka's share of working-age population is declining and it is a main challenge encountered in the implementation of Sustainable Development Goals (SDGs). This can hinder the country's growth process. Policies to improve the economy's overall productivity must be a part of the response to the declining working-age population. Education and training are traditionally considered as productivity boosters. In this aspect, increasing access to higher education remains a challenge. Of the 17 SDGs, SDG 4 is dedicated to education. Higher education is mentioned in the target 4.3 of SDG 4 and it also forms an important part of other goals (SDGs 1, 3, 5, 8, 12, 13 and 16).

In almost all the countries in the world, there are both private and public sector educational service providers. Investment in education, which essentially is an investment in the future, is a strategic imperative. Investment in public education benefits the society at large. Education finance systems are evaluated based on the three criteria of adequacy, efficiency and equitability. In recent years, the (in) adequacy of public expenditure on education in Sri Lanka has been discussed extensively. The Federation of University Teachers' Association (FUTA) seeks six (6) percent of Gross Domestic Product (GDP) for education. The counter argument is that, the demand is sensational and insensible; given that government expenditure and net lending as a percentage of GDP was only 19.4 percent in 2019 (Central Bank of Sri Lanka, 2020). On the other hand, previous studies have indicated that one of the major reasons for the decline in the quality of education is the inadequate investment in education. Thus, the adequacy of public expenditure on education has become a major topic of concern among the policymakers. Policies to improve labour force participation in the economy must be a part of the response to the falling share of the working-age population. The gender gap in the Labour Force Participation Rate (LFPR) is less among the people with university education (Solotaroff et al., 2020). Thus, this study is an attempt at critically evaluating the (in) adequacy of public expenditure on tertiary education in Sri Lanka.

Research objective

The objective of the study is to assess the adequacy of government expenditure on tertiary education in Sri Lanka and to propose measures to improve the adequacy.

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Methodology

This study is based on secondary data obtained from the World Bank. As indicated by Ranasinghe et al. (2016), the adequacy in educational finance refers to the adequacy of the allocated financial resources "to meet its intended needs" (p. 3). In order to measure the adequacy of educational financing, education spending as a percentage of GDP and the percentage of government expenditure that goes to education can be used. These measures are used to compare with the other countries.

Results and discussion

Public spending on tertiary education in Sri Lanka is modest in comparison to middle income countries and developing countries that are at a comparable level of development, or are exemplar countries, to Sri Lanka (countries in Table 1 are selected based on Aturupane, 2013). Government spending on tertiary education as a percentage of GDP is 0.44 percent and as a percentage of government expenditure is 2.35 percent (Table 1). This is the second lowest share of government investment in tertiary education (lowest being Nepal) among the selected group of comparable nations with a similar level of development, or are exemplar countries, to Sri Lanka. Government expenditure in tertiary education in Sri Lanka is lower than the given Latin American countries (Argentina, Brazil, Costa Rica and Colombia); East Asian countries (Malaysia, Thailand, the Republic of Korea, and Singapore); and other South Asian countries (India, Bangladesh and Pakistan).

Table 1: Ratios of Government Expenditure on Tertiary Education

Country	Government expenditure on tertiary education as % of GDP	Expenditure on tertiary education as % of total government expenditure
Sri Lanka	0.44	2.35
Malaysia	0.97	4.21
Thailand	0.64	2.97
Republic of Korea	0.94	..
Singapore	0.82	5.27
Argentina	1.21	2.93
Brazil	1.34	2.55
Costa Rica	1.63	6.04
Colombia	1.05	3.73
Russian Federation	0.81	2.37
India	1.10	4.01
Bangladesh	0.51	3.80
Pakistan	0.64	3.22
Nepal	0.40	1.83

Note: Data for the closest available year are used

Source: Developed by the author, based on data from UNESCO Institute for Statistics (2020)

Several reasons for the low level of government spending on tertiary education in Sri Lanka can be identified: (1) the Sri Lankan academic staff receives considerably less salaries (as a proportion of national per capita income) than academics in tertiary education institutions in other Asian countries such as India, Bangladesh, Pakistan, Thailand, South Korea, and Malaysia, and also less than comparable nations in Latin America (Aturupane, 2013); (2) the expansion of higher education institutions' capital stock during the 1950s-1970s, which resulted in a reduction in the need for major investments such as investment in new tertiary education institutions (World Bank, 2005); and (3) the competition for funds from numerous publicly funded projects, including free universal health care and poverty alleviation programmes.

As pointed out by Ranasinghe et al. (2016), civil war "was often highlighted as one of the reasons for low public expenditure allocation for education" (p. 9). Nevertheless, the end of the war did not result in a higher percentage of public expenditure allocation for tertiary education nor for education in general. Allocation of public expenditure for universities has increased over the past years. However, student enrolment too has increased. As a result the per capita expenditure on students has steadily decreased over the past few years.

Low investment in a higher education system can have several undesirable consequences in the long run. As projected by Millot (2012), less than desirable levels of capital expenditure negatively affect the ability of a tertiary education system to accrue modern education spaces and equipment, such as modern lecture halls, information technology (IT) equipment, information technology laboratories (ITL), science equipment, science laboratories, libraries and teaching-learning material. Consequently, this can negatively affect the quality of teaching and learning as well as in research and development (R&D). On the other hand, low recurrent expenditure implies low salaries of the academic staff which in turn makes attracting qualified academics to tertiary education institutions, increasingly difficult. Not only that, this could also result in brain drain of the academics already employed in universities. It also undermines the ability of tertiary education institutions to properly and regularly maintain their equipment and buildings, as well as the ability to be updated with the latest technology.

Unarguably, there is a need for Sri Lanka to increase the resources allocated to the education sector, including the tertiary education sector. Middle-income countries in East Asia and Latin America with more advanced economies than Sri Lanka spend significantly more in education. In order to implant employability skills, required by the 21st century, among the undergraduates, universities need to purchase the latest technology and equipment. For that purpose, the country undoubtedly needs to increase its public expenditure in tertiary education. Aturupane (2013) suggests

several avenues to increase investment in the education sector. Some of those options require radical reforms in the tertiary education sector as well as in other sectors. The Sri Lankan government has explicitly stated that it will seek to open the tertiary education sector to investment and service delivery from the private sector. In this environment it is advisable that policy makers study the policy options of the World Bank (2011), which provides different models to promote public-private partnerships (PPPs) in the tertiary education sector. Furthermore, given the inadequacy of government expenditure on tertiary education, it is imperative that Sri Lanka reforms its tax system. The tax-free threshold requires re-evaluation, after a comparative analysis with other countries.

Conclusion

Public spending on higher education in Sri Lanka is modest in comparison to other middle income countries and comparable developing countries. Relatively low salaries of lecturers, the reduced need for major investments in the establishment of new tertiary education institutions and the competition for funds from numerous projects are the key reasons for government investment in tertiary education in Sri Lanka to be at a level lower than desired by the educationists. Low investment in a tertiary education system can have several negative consequences in the long run. Thus, there is an urgent need for Sri Lanka to increase its investment in the tertiary education sector.

If Sri Lanka is to join the group of high-income countries, it will have to broaden access to tertiary education. Reaching this objective requires the authorities to make changes, particularly in the areas of tertiary education, financial resources and governance. This would require PPPs and student aid schemes. Through different schemes, such as student loans and student vouchers, education access opportunities for students of low income families could be enhanced. On the other hand, revising academic staff salary is essential if the tertiary education system is to attract and retain the needed human capital. An income tax reform, broadening the tax base and ensuring tax compliance, is essential and urgent.

A tertiary education system demands a reliable supply of resources. Thus, it is needed to ensure that government spending on tertiary education is stable, predictable and receptive to changes in prospective and current undergraduate population. Also, further studies are necessary to evaluate whether the allocation mechanisms encourage accountability in publicly funded tertiary education institutions.

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Hypertension and behavioural risk factors of the elderly population: A self-reported case control study of elders in Colombo District

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Introduction

During the 21st century, the share of elderly in the total population of the world has increased steadily. Population ageing in Sri Lanka is accelerating at a faster rate than other South Asian countries. In 2012 12.4 percent of the population were above the age of 60 years (Department of Census and Statistics, 2012). At present, many countries, including Sri Lanka, are experiencing the third stage of epidemiological transition which is the phase of degenerative and man-made diseases. The emergence of non-communicable diseases is the pioneer of this phase. Cardiovascular diseases, cancer, diabetes and respiratory diseases are the leading causes around the world. Hypertension is one of the main sub-types of cardiovascular disease. It can be defined as high or increased blood pressure, and is a state in which the blood vessels have obstinately increased pressure, putting them under increased stress. Non-communicable diseases are highly affected by behavioural risk factors. The literature reveals these foremost risk factors as the use of tobacco, alcohol consumption, improper diet and physical inactivity (World Health Organization, 2015). More than 80 percent of the deaths reported in Sri Lanka have occurred due to NCDs (Ministry of Health, 2012). Mortality due to NCDs and morbidity could have a significant impact on the social, economic and the health standards of a country. According to the Ministry of Health, a rapid growth and a distribution of NCDs can be observed in the country.

There is growing recognition of the importance health plays in advancing global health and sustainable development goals. In response to the call to "leave no one behind" which is at the core of the UN 2030 Agenda for Sustainable Development, governments, humanitarian and development actors should integrate health needs into global and national plans, policies and strategies across sectors and across borders in accordance with the 17 Sustainable Development Goals (SDGs) and their targets. Goal no 3; Good health and well-being explicitly discuss the importance of paying attention to the NCDs in each and every context.

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Table 1: Hospitalizations, Hospital Deaths and Case Fatality Rates for Selected NCDs, 2016-2017

Disease	ICD Code	2016					2017				
		Live Discharges		Deaths		Case Fatality Rate *	Live Discharges		Deaths		Case Fatality Rate *
		Male	Female	Male	Female		Male	Female	Male	Female	
Diabetes mellitus	(E10-E14)	39,846	47,297	387	386	0.88	38,745	45,436	401	402	0.94
Essential hypertension	(I10)	36,660	53,148	240	259	0.55	34,705	50,088	225	315	0.63
Other hypertensive diseases	(I11-I15)	3,574	4,406	84	66	1.85	2,891	3,836	49	54	1.51
Ischaemic heart diseases	(I20-I25)	60,904	47,664	3,392	2,649	5.27	61,887	48,714	3,792	2,857	5.67
Cerebrovascular diseases	(I60-I69)	26,670	17,606	2,076	1,457	7.39	27,922	18,800	2,086	1,499	7.13
Chronic obstructive pulmonary diseases	(J40-J44)	29,074	7,365	793	170	2.57	32,288	8,578	1,140	191	3.15
Asthma	(J45-J46)	82,583	83,823	266	263	0.32	82,896	88,736	289	341	0.37
Alcoholic liver diseases	(K70)	2,902	307	272	20	8.34	2,365	285	277	23	10.17
Other diseases of liver	(K71-K76)	7,979	3,291	1,122	468	12.36	8,205	3,308	1,121	477	12.19
Neoplasms	(C00-D48)	58,130	72,516	2,878	2,270	3.79	58,248	73,823	2,720	2,218	3.66
Renal failure	(N17-N19)	24,315	12,455	1,198	605	4.67	31,286	16,605	1,254	628	3.78

Source: Ministry of Health, 2017

Table 1 provides information on hospitalizations, hospital deaths and the case fatality rate for a selected number of non-communicable diseases for the year 2016 and 2017. The cerebrovascular diseases, other diseases of liver, neoplasms and renal failure, which show a decline, have declined only by meagre levels. Increase in hospitalizations can be identified for both males and females by the year 2017 and the number of deaths have also increased for both males and females by the year 2017. Considering essential hypertension, it can be seen that the female hospitalization is significantly higher compared to the males. At the same time, the number of deaths by hypertension can also be identified as higher among females compared to males and there is also an increase when the two years of 2016 and 2017 are compared.

Table 2: Mortality and Morbidity by Disease groups, 2017

Disease Group	Live dischargers (%)					Deaths
	Sex		Age group			
	Male	Female	17-49	50-69	70+	
Neoplasms	44.8	55.2	26.5	49.8	14.4	4,938
Diabetes mellitus	46.0	54.0	25.8	55.1	17.8	803
Diseases of the nervous system	51.1	48.9	41.2	27.8	11.4	638
Ischemic heart diseases	56.0	44.0	18.4	53.6	27.8	6,649
Hypertensive diseases	41.1	58.9	20.8	48.0	30.8	643
Cerebrovascular diseases	59.8	40.2	11.4	47.1	41.0	3,585

Source: Ministry of Health, 2017

Table 2 provides information on morbidity statistics by age and sex and the number of deaths by disease group for the year 2017. Morbidity statistics by sex indicate that prevalence of cerebrovascular disease is highest (59.8 percent) among the males whereas the prevalence of hypertensive diseases is highest (58.9) among the females. Morbidity statistics by age point out that between the ages of 17-49 years, highest percentage of deaths occur due to diseases of the nervous system and highest percentage of deaths occurs due to diabetes mellitus (55.1) in the age group of 50-69 years. Given the old age group of 70+ years, highest percentage of deaths have occurred due to Cerebrovascular diseases (41.0) followed by hypertensive diseases (30.8). Number of deaths reported for the year 2017 indicates that higher prevalence rates are reported for the hypertensive diseases, number of persons dying cause of the disease is the lowest (643) as the majority of the deaths have been reported has occurred due to ischemic heart diseases (6649).

Research objective

Although the literature reveals the association between non-communicable diseases and behavioural risk factors, less attention has been paid to identifying the level or the strength of the association. The objective of the study is to identify the association between a hypothesized risk factor and hypertension. At present, Sri Lanka is experiencing the third stage of the epidemiology transition. As a consequence, there is a visible increase of the NCDs in society. Furthermore, although the life expectancy of the population has increased, there is an emergence of an elderly population suffering from long term NCDs (Dissanayake, 2014).

Methodology

This study predominantly focuses on the non-communicable disease hypertension as it shows the highest prevalence in Sri Lanka. The respondents of the study are categorized as elderly persons with the disease and the control group of disease-free individuals from the Colombo district. In order to measure the association between disease and behavioural risk factors, hypotheses were tested. In the process of data collection, a questionnaire was administered. 90 control individuals and 90 cases for each disease were sought from patients visiting 2 medical institutions: a public hospital and a private hospital. Sample was selected from those who came for the check-ups of the above-mentioned medical institutions using the purposive sampling method.

Colombo district has been selected as the location of study as the highest number of deaths caused by non-communicable diseases has been reported from this district according to the Self-reported Health Survey (Department of Census and Statistics,

2014). It is further justifiable as the majority of the hospitals are located in the Colombo district and it denotes a higher prevalence rate of NCDs.

Results and discussions

As described in the methodology, the association between hypertension and identified risk factors has been measured through hypothesis testing. The null hypothesis (H_0) can be identified as "There is no association between factor and the disease" and the alternative hypothesis can be identified as "There is an association between factor and the disease". Results revealed that hypertension has different levels of association with different risk factors. This finding is further discussed below.

The data collected through the case control study has been utilized to run chi-square analysis. 95% confidence intervals were created to check the significance of the odds ratios. The results of the chi-square test indicate that when considering the relationship between hypertension and alcohol consumption, the chi-square test statistic value obtained was 22.4649 and it was tested at 5% level of significance. Since the test statistics value is greater than 5% critical value (3.84), it can be said that there is a significant association between hypertension and the consumption of alcohol. Odds of getting hypertension is 5 times higher for people who consume alcohol compared to those who don't consume.

Table 3: hypertension and behavioural risk factors

Exposure	Odds ratio	Confidence interval	P value
Hypertension			
Alcohol consumption	4.8866	2.5365,9.4121	22.4649
Smoking	4.1250	2.1983 to 7.7404	19.027
Balanced diet	2.9130	1.5536,5.4617	10.422
Physical activeness	0.4396	0.2365 to 0.8170	6.0863
Chi square critical value – 3.84			

Source: Author's calculations using survey data, 2018

When considering the status of smoking, the test statistics value is noted as 19.02. Since it is greater than the critical value, and the Ho was rejected at 5% level of significance. It concludes that there is a significant association between hypertension and smoking. Odds of getting hypertension is 4 times higher for people who smoke

compared to those who don't smoke. Chi-square test statistic value of 10.422 has been observed when the relationship between hypertension and dietary patterns were considered. It fitted between the confidence interval of 1.5536-5.4617. Since it is also greater than the Chi square critical value of 3.84, we reject Ho at 5% level of significance. Therefore significant association between hypertension and diet could have been noticed. Similarly the test statistic value of 6.0863 is less than the chi square critical value, we reject the null hypothesis with one degree of freedom at 5% level of significance. Odds of getting hypertension is 2 times higher for people who are physically inactive compared to those who are physically active. It concludes that there is significant but comparatively low association between hypertension and physical inactivity.

Conclusion

Considering elderly persons who are 60 years and above, hypotheses were tested to identify and measure the relationship between hypertension and selected behavioural risk factors i.e. alcohol consumption, use of tobacco, dietary patterns and physical inactivity. The results revealed that there is a significant association between hypertension and alcohol consumption and smoking to a higher extent. Also recorded was a significant relationship with dietary patterns and physical activeness as per the self-reported data. Further it has been noted that the use of tobacco and alcohol consumption are significantly associated with hypertension with high impact. Odds of getting hypertension is 5 times higher for people who consume alcohol compared to those who don't consume and odds of getting hypertension is 4 times higher for people who smoke compared to those who don't smoke. It concludes there is significant association but comparatively low association between hypertension and physical inactivity.

Findings indicate the importance of having awareness programmes related to NCD health particularly on hypertension which emphasize the behavioural risk factors and that it is necessary to implement such awareness programmes at the micro and macro levels.

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The impact of sexual orientation on day to day life among sexual minorities: issues and challenges faced by gay men in Sri Lanka

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Introduction

Issues and challenges faced by sexual minorities such as gays have become a public topic of great interest to researchers and policymakers of gender and demographic related fields. According to the scholarly literature found worldwide, gay men face many challenges and issues due to their sexual orientation and sexual behaviors as homosexual men (Fisher, 2013; Wienke, 2013). This is especially heightened in social, mental, health, and economic related areas due to the neglect and discrimination shown by the general public. Several studies show that gay people were refused educational opportunities, terminated from employment, and nearly all of them were neglected by their friends as well due to their sexual orientation. Moreover, most gay people were refused medical assistance and faced sexual harassment due to their sexual orientation. It reveals that the gay community is viewed negatively and experiences discrimination in day to day life due to their sexual orientation.

Sri Lanka is a multi-ethnic and multi-religious country where the concept of homosexuality has not been taken up as a major topic in the field of gender and gender-related rights. Especially due to strong religious, cultural, and law-related barriers, homo-sexuality and same-sex marriages are strictly prohibited in Sri Lanka (Caldera, 2017). Therefore, it can be fairly assumed that most of the sexual minorities such as gay men living in Sri Lanka have to face more challenges in obtaining their basic needs as well as in their education, health, and employment in the country due to their sexual orientation.

Research objectives

The main objective of the study is to determine the issues and challenges faced by gay men in Sri Lanka due to their sexual orientation. Further, this study is examining the socio, economic and demographic characteristics of gay men in Sri Lanka.

Methodology

The study was mainly based on primary data in the year 2020, collected through a google questionnaire and in-depth interviews. The questionnaire was sent via mobile phone and email to the respondents in both English and Sinhala language. The

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sampling technique was a snowball sample method and data gathered through 154 gay men and via 12 in-depth interviews. Quantitative data were analyzed by using SPSS version 22 and in-depth interviews were analyzed manually.

Results and discussion

According to the research objectives, results are discussed in two parts. The first part covers the characteristics of respondents and the second part covers the issues and challenges faced by the responded gay men.

Characteristics of the respondents

According to the basic characteristics of the respondents, the mean age of the gay respondents is 27.9 years with a Standard deviation of 7.518. The majority of respondents are from urban areas (55.8%) while more than two-thirds of respondents (84.4%) are Buddhists. More than 90 percent of respondents are Sinhalese. Remarkably 92.9 percent are unmarried while 7.1 percent of gay men are legally married to a woman (Table 1).

Table 1: Demographic and socio-economic characteristics of the respondents

Characteristic	Categories	Percentage
Age	Mean age	27.99 years
	Standard deviation	7.518
Sector	Urban	55.8
	Rural	44.2
Religion	Buddhist	84.4
	Catholic	11.0
	Hindu	1.3
	Islam	3.2
Ethnicity	Sinhala	92.2
	Tamil	3.2
	Muslim	3.2
	Burger	1.2
Marital Status	Married	7.1
	Unmarried	92.9
Educational Level	Grade 6-11	3.9
	Passed O/L	12.3
	Passed A/L	41.6
	Graduate	42.2
Employment Status	Employed	73.0
	Unemployed	27.0
HH Income	Below Rs.15000	3.9
	Between Rs.15000-35000	18.2
	Between Rs.35000-55000	22.1
	Between Rs.55000-100000	52.6
	Above Rs.100000	3.2

Source: Sample survey, 2020

Further study reveals that 42.2 percent of the respondents are graduates and more than 40 percent of respondents have passed their G.C.E. Advanced level. It emphasizes that the majority of gay men in the sample are highly educated. Nearly 75 percent are employed with most of the respondents working as teachers, administrators, health professionals, workers in the hotel industry, and government workers. Notably, more than 50 percent of respondents have a monthly household income between Rs.55000-100000.

Issues and Challenges Faced by Gay Men

As revealed in the literature, gay men have to face more challenges in their education, health, and employment due to their sexual orientation. According to the results of the study, 16.9 percent stated that their sexual orientation has influenced their education. (Table 2). According to the in-depth interview of Samudra (Age 25, Sinhalese, Buddhist), he stated that he dropped out of his school in grade 9 due to the physical and mental pressure from school teachers, friends, and his family on his sexual orientation.

"I like to study, but my mother always told me that, 'don't study anymore. With your behavior like a girl, you can't find a better job with good education'. Sometimes my friends rejected me because I didn't like to play cricket. They insult me by telling girls names to me. I was stressed due to these behaviors of my friend. Specially I could not tolerate that even some of my favorite teachers also laugh at me due to my physical appearance and my behavior. So, I decided to leave school and find a job as my mother told me".

Table 2: Issues and challenges faced by the respondents

Issues faced by the respondent	Yes (%)	No (%)	Total (%)
My sexual orientation has been impacted for my education.	16.9	83.1	100
I faced a lot of barriers and issues when I seeking services from government offices.	8.4	91.6	100
I have been neglected by my family due to my sexual orientation.	53.9	46.1	100
I have been neglected by my friends due to my sexual orientation.	23.4	76.6	100
I have faced many issues when receiving health services from hospitals due to my sexual orientation.	14.9	85.1	100
I have faced sexual harassment and related issues in public transport.	20.1	79.9	100

Source: Sample survey, 2020

According to Table 2, a low but notable percentage of 8.4 have faced some issues when receiving services from the government offices. Nevertheless, 14.9 percent of respondents stated that they have faced issues when receiving health services from hospitals due to their sexual orientation. According to the in-depth interview of Janaka (Age 29, Sinhalese, Buddhist), he stated that he had a bad experience during health checkups.

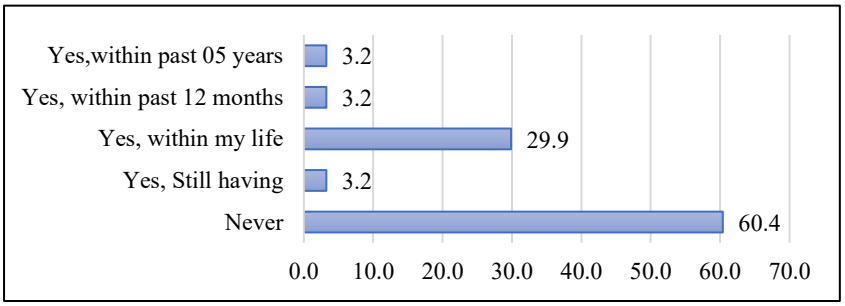
"I am disappointed about STD checkups. When I went to check my blood and other medical checkups for STDs, the male attendant laughs at me and told me that 'Ah..., with whom did you have sex? Are you a gay man? You all are useless to society. Shameless people'. So, I decided to stop medical checkups for STDs thereafter".

According to Table 2, nearly 54 percent of gay respondents were neglected by their family due to their sexual orientation. This is a significant finding that should be considered by policymakers in the field of gender. For instance, in the in-depth interview of Haleem (Age 22, Muslim, Islam), he stated that he faced a lot of physical and sexual harassment from his family members and was rejected by his family due to his sexual orientation.

"When I was 15, my mother went abroad to work as a housemaid. So, my father and I stayed alone at our home. When I was 16, I felt that I was attracted to men, but I didn't tell anyone. However, my father realized my behavior and he questioned me. I told about my feelings and he always blamed me due to my orientation. So, it was a turning point in my life and I left my home. I live in my cousin's uncles' home. He treated me well. However, my cousin brother got very close to me and he used me to fulfill his sexual needs every day. My cousin's uncle also sexually used me to fulfill his needs. So, I felt like a prostitute and useless guy for society".

Further, according to Table 2, twenty percent of respondents have faced sexual harassment and issues when they are using public transport. It shows that still a notable percent of gay respondents face different types of sexual harassments in their life. According to the study, nearly 30 percent of respondents have faced sexual harassment within their life time. Further, Figure 1 shows that still, 3.2 percent are experiencing sexual harassment.

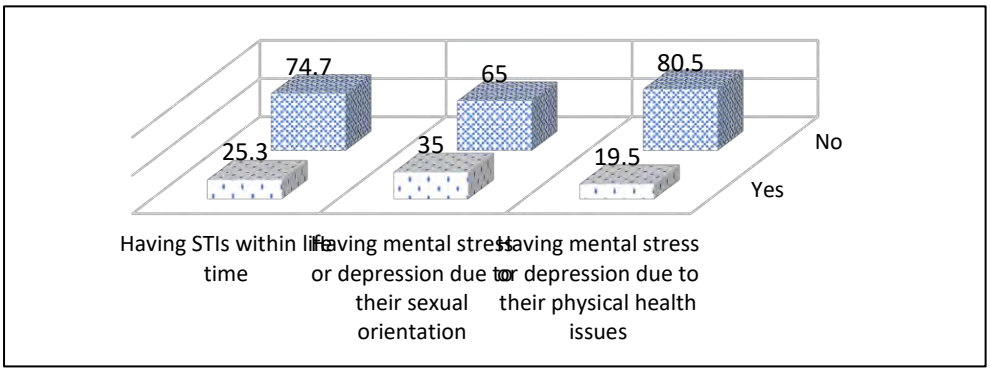
Figure 1: Experiencing Sexual Harassments by the Respondents



Source: Sample survey, 2020

Gay men have also faced a lot of health issues and the study reveals that 25.3 percent of respondents have had a sexually transmitted infection within their lifetime (Figure 2). Especially 35 percent of respondents stated that they are having mental stress or depression due to their sexual orientation. And also 19.5 percent of respondents are having mental stress or depression due to their physical health issues.

Figure 2: Health Issues Faced by Gay Respondents



Source: Sample survey, 2020

Conclusion

According to the results of the study, it can be concluded that gay men face a lot of physical, mental, social, and economic related challenges and issues due to their sexual orientation. Especially, it emphasizes that the issues they face are indirectly influencing their risk of having STIs and reducing their wellbeing as citizens of Sri Lanka. Organizing health awareness programs, promote mental and health counseling among gay communities, and organizing awareness programs for the general public regarding the LGBTQ community can be recommended to reduce the issues and challenges faced by gay men in Sri Lanka.

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Attitudes toward later life relationship and older adults' health and well-being: A national survey study from the Philippines

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Introduction

Although many studies have explored how negative ageism leads to worse outcomes, few have explored "positive ageism" and its association with healthy ageing. One qualitative European study showed how openness to being in love within a re-partnership was a form of positive ageism that facilitated healthy ageing by encouraging vitality in older age (Koren, 2015). Additionally, love and remarriage can provide benefits – financial security, companionship to mitigate loneliness after a divorce or widowhood, sexual fulfilment – beyond positive ageism that contributes to healthy ageing (Chiu and Ho, 2010; Cooney & Dunne, 2001; Davidson, 2001; Dykstra and de Jong-Gierveld, 2004; Koren, 2015). Thus, the effect of love and remarriage on healthy ageing may result from the interplay of multiple factors, including positive ageism.

In the Philippines, where over 16 percent will be sixty or older by 2050 (*Ageing population in the Philippines*, 2017) and with the likely legalization of divorce ("An act instituting absolute divorce and dissolution of marriage in the Philippines," 2020), the number of older adults remarrying could increase in the near future. Despite the increased likelihood of remarriage among older adults in the Philippines and a potential link between acceptance of later life re-partnership and healthy ageing, there have been no studies of Philippine older adults' attitude towards love and remarriage in later life.

Research objectives

This study is the first nationally representative, quantitative study of the attitude towards love and remarriage in later life among older adults in the Philippines. Specifically, this study aims to: 1) quantify the level of acceptance of love and remarriage in older adults in the Philippines, 2) assess factors associated with such

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acceptance, and 3) assess how such acceptance is associated with social activity and health behaviors.

Methodology

This study included data from the 2007 Philippine Study on Ageing (PSOA) and the 2018 Longitudinal Study of Ageing and Health in the Philippines (LSAHP). Both surveys were nationally representative samples of community-dwelling older adults aged 60 and over in the Philippines. Respondents were selected using a multistage sampling design with three sampling units: the province, village (barangays), and the individual older adults. Trained interviewers administered questionnaires via face-to-face interviews in the predominant language of the region being surveyed. All statistical analyses were conducted using Stata version 16 (StataCorp LLC, College Station, TX). Given the similarity between the surveys, the two surveys were merged into a single dataset. When separate analyses were performed to compare the two surveys, the results paralleled those from the merged dataset. Objectives stated in the introduction were explored using multivariable, weighted, logistic regression. All tests were considered statistically significant at $P < .05$.

Results

Table 1 summarizes the characteristics of the study sample. Only 17 percent of the respondents perceived love and remarriage in the 60s and 70s as acceptable, with little change from 2007 to 2018. Table 2 shows the factors associated with acceptance of love and remarriage in 60s and 70s. In the adjusted model, respondents who were male, were currently married, had greater than high school education, reported no ADL difficulties, and who had children but did not receive financial support from them were more likely to report acceptance. Although not statistically significant, acceptance declined with age. When the interaction between gender and marital status was further assessed, among men, those who were unmarried were more accepting compared to those who were currently married (Figure 1). However, the opposite was observed in females, where married female respondents were more accepting compared to those who were unmarried. Table 3 shows the association of acceptance of love and remarriage with social activity. In the adjusted model, among men, those who reported acceptance were more likely to engage in social activity. There was no association between acceptance and social activity in women. Table 4 shows men who reported acceptance were more likely to smoke than men who did not report acceptance (Figure 2). Women who accepted love and remarriage were less likely to smoke compared to women who disagreed with love and remarriage. For both men and women, acceptance was associated with increased drinking (Figure 3).

Discussion

Variability in acceptance of love and remarriage

Similarly low proportions of intent or desire to remarry among older adults have been observed in China, Singapore, and the United States (Chiu and Ho, 2010; Mehta, 2002; Vespa, 2012). Barriers to remarriage included familial disapproval – especially those of children (Bulcroft & Bulcroft, 1991; Mehta, 2002; Osmani et al., 2018). These barriers to remarriage are present in the Philippines, where older adults shoulder familial responsibilities and where living arrangement for older adults is predominantly co-residence with children (Cruz et al., 2016; Valdez et al., 2013). Thus, the same barriers to acceptance of remarriage in older age in prior studies are likely also important in the Philippines. Additionally, the little change in acceptance observed between 2007 and 2018, may indicate that ageist barriers against acceptance to love and remarriage in older age persisted even after eleven years. With the growing older adult population in the Philippines, as well as likely legalization of divorce in the near future, identifying these barriers should be of interest.

Factors associated with acceptance of love and remarriage

Consistent with prior studies, more men accepted love and remarriage compared to women (Davidson, 2002; Mehta, 2002; Van Den Hoonaard, 2002; Vespa, 2012). Women's social well-being is influenced by social interactions outside of marriage rather than prior marital history (Dykstra and de Jong-Gierveld, 2004). Thus, women can find social connections through relationships outside of marriage. Unlike women, men predominantly derive social connection through marriage, resulting in greater dependence on marriage for social well-being. This greater influence of marriage on men's social well-being could explain why men report overall higher acceptance of love and remarriage compared with women who can fulfill social needs in relationships outside marriage.

Older adults who received financial support from their children had a lower probability of reporting acceptance. These older adults may be less accepting of love and remarriage in later life due to fear of financial instability if their children disapprove of re-partnership. Although the percentage of older adults receiving financial support from children was lower in 2018 compared to 2007 (table 1), separate analyses of 2007 and 2018 data showed parallel results to those from the merged dataset.

Association of love and remarriage with social activity

Among men, acceptance was associated with more social activity. We found that unmarried men were more likely to report acceptance of love and remarriage in older age. These men, who are unmarried and open to love and remarriage in older age,

may be actively looking for partners through social activities. Furthermore, since men derive social well-being from their marriage, unmarried men may engage in social activities more frequently to achieve the same level of social well-being experienced in a marriage.
Acceptance of love and remarriage was not associated with social activity in women. Since women often derive social well-being from relationships outside of marriage, perception of love and remarriage may not strongly influence the non-partnership social networks women may have established (Dykstra and de Jong-Gierveld, 2004).

Association of love and remarriage with health behaviors
Acceptance of love and remarriage in older age was associated with more smoking, majority smoking a pack a day or less, in men but *less* smoking in women. A study observed that older adults who reported stronger perceptions of control over negative consequences of ageing (those with positive ageism) have increased smoking and drinking as potential coping behaviors (Villiers-Tuthill et al., 2016). Similarly, in our study, men who reported acceptance were more likely to be smokers. However, women who reported acceptance were less likely to be smokers. This could be due to the increased stigma women experience given that social inequity for women is prevalent in the Philippines (UNDP, 2019).

Acceptance of love and remarriage in older age was associated with more drinking, majority drinking less than once a month. Not only is drinking perceived as a coping behavior to counteract the negative consequences of ageing, but it is also often considered as a facilitator for social engagement (Kelly et al., 2018; Villiers-Tuthill et al., 2016). Therefore, the association between acceptance and drinking could be due to the higher level of social activity in individuals who report acceptance.

Table 1: Demographics and characteristics of older adults in the Philippines in 2007 and 2018

	2007 (n=3105)	2018 (n=5985)	2007&2018 (n=9090)
	%	%	%
Acceptance of love and remarriage	18.4	16.3	17.1
Age			
60-64	26.4	19.9	22.1
65-69	25	16.1	19.1
70-74	22	23.1	22.7
75-79	12.2	16.1	14.8

80-84	8.5	14.8	12.6
85+	5.9	10.1	8.7
Male	41.1	36.1	37.8
Currently married	55.6	40.5	45.6
Urban	48.8	43.3	45.2
High School education or above	29.4	31.2	30.6
Involved in religious group	17.8	12.5	14.3
At least 1 ADL difficulty	15.9	23.4	20.9
Average health or above	67.3	54.9	59.2
Receives financial support from child			
No, has kids	14.9	66.5	48.9
No, no kids	5.6	5.1	5.3
Yes, has kids	94.4	28.4	45.9
Social activity			
Few times a year or less	80.5	69.5	73.2
At least once a month	17.6	27.9	24.4
Currently smoking	26.2	13.4	17.8
Currently drinking	27.7	25.2	26

Missing values accounted for in percentages but not shown. Percentages are adjusted for weights specific to survey years.

Source: Author's calculations using secondary data

Table 2: Factors associated with acceptance of love and remarriage in 2007 and 2018 (logistic regression)

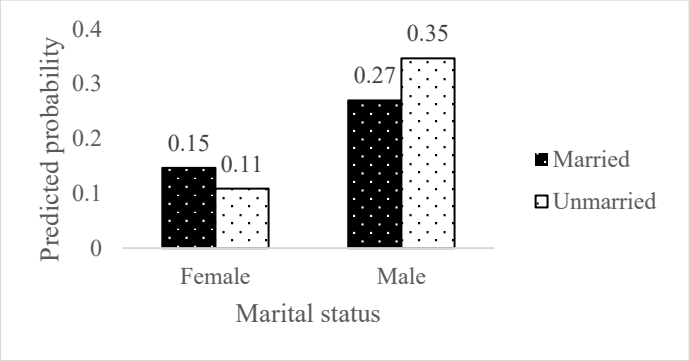
	Unadjusted	Adjusted+interaction
	OR [95% CI]	OR [95% CI]
Age		
60-64	reference	reference
65-69	0.85 [0.71-1.01]	0.90 [0.75-1.07]
70-74	0.83 [0.70-1.00]*	0.93 [0.78-1.12]
75-79	0.68 [0.55-0.84]***	0.81 [0.65-1.01]
80-84	0.71 [0.56-0.89]**	0.96 [0.75-1.23]
85+	0.59 [0.44-0.81]**	0.78 [0.56-1.08]
Gender		
Female	reference	reference

Male	3.05 [2.70-3.43]***	4.34 [3.63-5.19]***
Marital status		
Currently not married	reference	reference
Currently married	1.50 [1.33-1.69]***	1.41 [1.17-1.70]***
Education level		
High School education or below	reference	reference
High School education or above	1.31 [1.16-1.47]***	1.24 [1.09-1.40]*
Involved in religious group		
No	reference	reference
Yes	0.91 [0.78-1.07]	1.01 [0.86-1.19]
ADL		
No ADL difficulties	reference	reference
At least 1 ADL difficulty	0.67 [0.57-0.80]***	0.80 [0.67-0.96]*
General health		
Unhealthy	reference	reference
Average health or above	1.15 [1.01-1.31]*	1.07 [0.93-1.22]
Year		
2007	reference	reference
2018	1.00 [0.98-1.01]	0.98 [0.97-1.00]*
Receives financial support from child		
No, has kids	reference	
No, no kids	1.59 [1.28-1.98]***	1.63 [1.28-2.09]***
Yes, has kids	0.74 [0.65-0.84]***	0.69 [0.59-0.80]***
Gender#Marital status		0.50 [0.39-0.63]***

**p<0.05; **p<0.01; ***0.001<p; I: interaction term; adjusted for age, gender, marital status, education level, ADL, general health, year of survey, interaction between gender and marital status, and financial support from children. Weighted values. (n=8056)*

Source: Author's calculations using secondary data

Figure 1: Probability of acceptance of love and remarriage by gender and marital status



Source: Author's calculations using secondary data

Table 3: Association of acceptance of love and remarriage with social activity (logistic regression)

	Unadjusted	Adjusted
	OR [95% CI]	OR [95% CI]
Acceptance of love and remarriage	1.15 [1.01-1.30]*	0.99 [0.81-1.22]
Gender		
Female	reference	reference
Male	0.88 [0.79-0.98]*	0.80 [0.69-0.92]*
Acceptance X Male		1.36 [1.04-1.79]*

**p<0.05; **p<0.01; ***0.001<p; I: interaction term; adjusted for age, gender, marital status, region, membership in religious organization, ADL, general health, education level, year of survey, interaction between love and gender, and financial support from children. Weighted values. (n=7936)*

Source: Author's calculations using secondary data

Table 4: Association of acceptance of love and remarriage with health behaviors (smoking and drinking) (logistic regression)

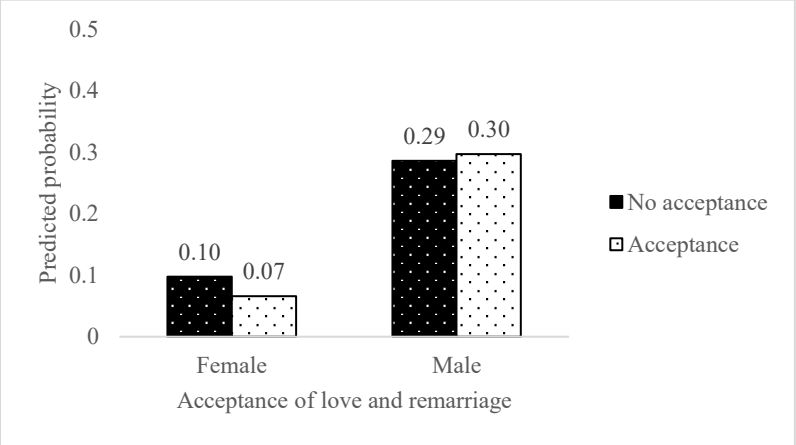
	Unadjusted (smoke)	Adjusted (smoke)	Unadjusted (drink)	Adjusted (drink)
	OR [95% CI]	OR [95% CI]	OR [95% CI]	OR [95% CI]
Acceptance of love and remarriage	1.36 [1.19-1.57]***	0.65 [0.47-0.91]*	2.07 [1.84-2.33]***	1.67 [1.35-2.08]***
Gender				
Female	reference	reference	reference	reference
Male	1.75 [1.55-1.97]***	3.70 [3.14-4.33]***	5.09 [4.60-5.69]***	5.15 [4.45-5.97]***

Acceptance X Gender	1.62 [1.11-2.36]*		0.73 [0.56-0.96]*

**p<0.05; **p<0.01; ***0.001<p; I: interaction term; adjusted for age, gender, marital status, region, membership in religious organization, ADL, general health, education level, year of survey, financial support from child, and interaction between love and gender (only for smoking). Weighted values. Smoke n=8056 Drink n= 8054*

Source: Author's calculations using secondary data

Figure 2: Probability of smoking by gender and acceptance of love and remarriage



Source: Author's calculations using secondary data

Figure 3: Probability of drinking by gender and acceptance of love and remarriage

Source: Author's calculations using secondary data

Conclusion

This study is the first to assess acceptance of love and remarriage in the Philippines as a potential positive aspect of ageism and in the context of healthy ageing. Our study starts to explore the complexities of ageism; a single ageist belief, namely attitude towards love and remarriage in older age, is associated with gender, marital status, social activity, and health behaviors (smoking, drinking, and social activities). As older adults often experience family changes in later life, the findings contribute to an understanding of how attitudes toward later life relationship impact older adults' health and well-being.

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Study on the push and pull motivation of direct labour-force participation in the Sri Lankan tourism industry

P.B.S.N. Kumara[1]

Introduction

The Labour force is the main asset for the country to build economically. It can be defined as the current active population via economics. Also, the number of people who are 15 years or above age, unemployed or employed during a considered one-week period (Department of Census and Statistics, 2020). Therefore, 51percent labour force participation was identified in the first quarter of 2020 in Sri Lanka. The unemployment rate was identified as 5.7 percent. (Department of Census and Statistics, 2020). Tourism is one of the main solutions to the unemployment problem. Because in the Sri Lankan labor market, the tourism industry created job opportunities for the Sri Lankan labour force. Table 1 illustrates that in the year 2019, it created 402,607 direct and indirect jobs for the skilled labour force in Sri Lanka.

Table 1: Total employment generation from tourism

Year	Direct employment	Indirect employment	Total employment generation
2017	156,369	202,846	359,215
2018	169,003	219,484	388,487
2019	173,592	229,015	402,607

Source: (SLTDA, 2019) (SLTDA, 2018) (SLTDA, 2017)

According to Table 2, many tourism businesses create direct employment through hotels, restaurants, travel agencies, airlines, tourist shops, national tourism organizations, etc.

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Table 02: Direct Employment in the Tourist Industry - 2017 to 2019

Category of Establishments	2017	2018	2019
Hotels and Restaurants	127,475	136,782	139,754
Travel Agents and Tour Operators	9,949	11,256	11,759
Airlines	7,521	8,267	8,629
Agencies Providing Recreational Facilities	996	1,104	1,144
Tourist Shops	2,040	2,231	2,338
Guides (Formal and Informal)	4,978	5,424	5,898
National Tourist Organization	735	827	855
State Sector	2,675	3,112	3,215
Total	156,369	169,003	173,592

Source: SLTDA, 2019

Before the COVID 19 pandemic, the tourism industry was the third-largest export category in the world. It was second only to automotive products and foods. Technological enhancements, growth of middle-class people's economic level, innovative business models, visa facilities, and affordable cost of travel helped to increase international tourist arrivals. In the year 2018, it exceeded the 1.4 billion mark (UNWTO, 2019).

Even though the COVID 19 pandemic has negatively affected the tourism industry, there is potential to generate new job opportunities for society. Based on the published data, in the year of 2020 month of May tourist arrivals declined from 58 percent to 78 percent. Also, recent international tourists' arrival declined closer to 70 percent. But expectations for 2021 to 2024 have been identified as a reverse evolution of the pandemic with considerable improvement in traveler confidence in travel. Within two and a half years to four years, tourism is projected to bounce back to the same amount as 2019 (UNWTO, 2020).

Therefore, some studies also found that push and pull motivations created local motivation for the community to find tourism jobs. The pull factor mainly created job opportunities for the locals. Socio-economic factors pull locals to the industry (Noorhayati et al., 2015). Therefore, this study was conducted to find out whether there is a significant push and pull factor with Sri Lankan labor force participation in tourism industry jobs.

Research objectives

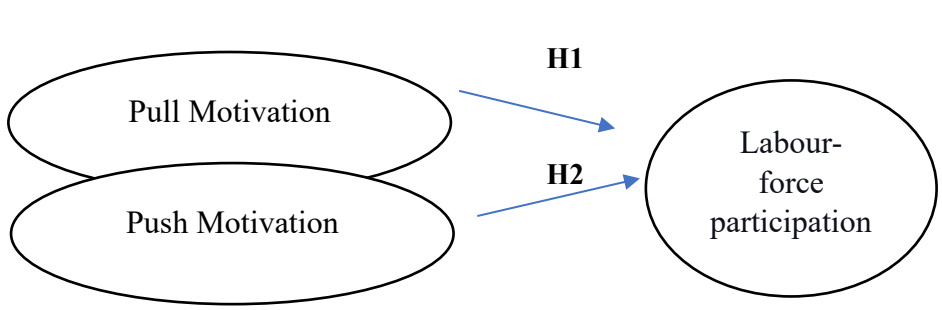
The objectives of the study are to determine the relationship between push and pull motivation and labour force participation in the tourism industry and to identify the

most significant motivation factors for labour force participation in the tourism industry.

Methodology

The researcher used a quantitative approach for this study. The population consisted of employees who worked in the tourism industry. The sample was identified as 100 tourism sector employees. Simple random sampling was used by the researcher. Both primary and secondary data and a five-point Likert scale questionnaire including demographic factors, push motivation, pull motivation, and Labour-force participation were used. Thereby, push motivation and pull motivation were identified as independent variables, and labour-force participation was identified as a dependent variable. SLTDA statistical reports, industry reports, research articles, web pages, etc. were used as secondary data. Collected data were analyzed by using SPSS, and validity, reliability, Pearson correlation, and T-test was conducted to determine study objectives.

Figure 1: Conceptual framework



Source: Developed by researcher, 2020

Results and discussion

According to the respondent's demographic analysis, 53 percent were male, and the remaining 47 percent were females. 9 percent of them had newly joined the tourism industry. 76 of respondents had more than 04 years of industry experience and the rest had between 01 and 04 years of experience. Respondents above the age of 36 years represented 38 percent, 41 percent were in the age group of between 29-38 age groups. 18-28 age group represented 21 percent. Regarding their level of satisfaction with tourism industry jobs, 56 percent of the respondents were highly satisfied, 36 percent were mostly satisfied, and the rest were moderately satisfied. Even though COVID 19 negatively affected the tourism industry, 87 percent of them had the intention to work in the tourism industry in the future. Among the respondents, 11

percent belong to the tourism education industry, 40 percent worked in the hotel sector, 24 percent were in travel agencies, 10 percent worked in restaurants, 3 percent in the event industry, 9 percent worked in public sector tourism organizations, and the rest were engaged in other tourism industry jobs.

Table 3: Descriptive statistics of the respondents

Measure	Options	Frequency	Percentage (%)
Respondent Gender	Male	53	53
	Female	47	47
Years of experience in the industry	Below 01 year	9	9
	Between 01 - 02 years	6	6
	Between 02 - 03 years	4	4
	Between 03 - 04 years	5	5
	More than 04 years	76	76
Age Group	18 - 28 Age group	21	21
	29 - 38 Age group	41	41
	More than 39 Age	38	38
Level of satisfaction with Tourism industry jobs	Highly satisfied	56	56
	Mostly satisfied	36	36
	Moderately satisfied	8	8
Intention to work in the future Tourism industry	Yes	87	87
	No	3	3
	Undecided	10	10
Field of Tourism Industry	Education	11	11
	Accommodation/ Hotel	40	40
	Travel Agency	24	24
	Restaurant	10	10
	Event	3	3
	Government organizations	9	9
	Other	3	3

Source: Sample survey, 2020

Also concerning the validity and reliability of the data set, the Reliability Statistics of statistics were measured by Cronbach's Alpha value. All variables are more than 0.7 and reliable. Also, the validity of the data set is measured by KMO and Bartlett's Test and all variables are higher than 0.6 and the data set is valid.

Table 4: Validity and reliability

Variable	No of items	Reliability Statistics Cronbach's Alpha	Validity test KMO and Bartlett's Test
Pull Motivation	05	0.824	0.703
Push Motivation	06	0.715	0.685
Labour-force participation	05	0.820	0.828

Source: Sample survey, 2020

To determine the results of the objectives, the researcher conducted a Pearson Correlation and T-test. According to the Pearson correlation, between Pull Motivation and Labour-force participation is 0.79 which means a strong positive relationship was illustrated by both variables. Also, Push Motivation and Labour-force participation created a 0.653 value of Pearson Correlation and it was a weak positive relation. Therefore, to test the hypothesis of the study, the T test was conducted and both variables show 0.000 value which was less than 0.05. Which means the null hypothesis was rejected. The accepted hypotheses are;

- H_0: There is a significant relationship between Pull Motivation and Labour-force participation.
- H_1: There is a significant relationship between Push Motivation and Labour-force participation.

Table 5: Correlation and hypothesis testing

Variables	Pearson Correlation	T test	Significant or not	Accepted Hypothesis
Pull Motivation and Labour-force participation	0.790	0.000	Significant	H1
Push Motivation and Labour-force participation	0.653	0.000	Significant	H2

Source: Sample survey, 2020

Therefore, push motivation of the respondents to lack of previous experience with other industry sectors, dissatisfaction with the previous job and fewer career development opportunities, unemployment, and personal interests, skills and capabilities have created a weak positive relationship with participation in tourism sector employment. But concerning pull attributes provided by the tourism industry, results affect employment decisions more significantly. The tourism industry offered a variety of career opportunities such as direct, indirect, and induced. Also, those careers offer a higher salary package than other jobs while ensuring salary increment, commission, and service charges, and the tourism industry is identified as a potentially developing industry in the Sri Lankan economic sector. It is involved with local culture and tradition, ensures sustainability, and increases the quality of life of

participants. These tested factors created a strong positive relationship with participation in tourism sector employment.

Conclusion

The tourism industry created job opportunities for the Sri Lankan skilled labour force. It is an effective solution in reducing unemployment in the country. Even though COVID 19 negatively affected the tourism industry, it created some pull factors to attract the labour force. The study identified that pull motivation created a stronger positive relationship with labour-force participation than push motivation. Push motivation created a weak positive relationship with labour-force participation.

Therefore, variety of jobs, salaries with increment, commission and service charge, the application of local culture in the industry, and higher quality of life positively affected employee participation in the industry. The study's findings recommend ensuring industry security and maintaining it in a healthy way during a new normal situation. The industry has future potential for the Sri Lankan economy, because the majority of tourism employees still have a positive perception. Also, responsible government organizations can ensure industry sustainability while securing the employment force in the tourism industry by promoting health tourism, providing an allowance, etc.

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Attitudes towards physical activities among ageing population: A special reference to Kirillawala – West Grama Niladhari Division

L. N. Liyanage[1]

Introduction

Systematic physical activities have shown many health benefits in all age groups. Ageing population practices physical exercises for four reasons: leisure, free time, recovery and competitions. There are many benefits that an elderly person can gain through physical activities such as high quality of life, prevention of diseases (osteoporosis, cardiovascular disease), maintaining health and fitness into old age etc. Elderly people undertake essential physical activities such as housework or walking short distances. Engaging in regular leisure time physical activity is a better way to increase or to maintain levels of physical activity during retirement.

According to Taylor and Johnson (2007) ageing is associated with many diseases due to the lack of physical activities. However, despite that, many elderly people are much less active than desirable. A study conducted by Bertoldo et al. (2008) assesses the relationship between the physical activity level and the mental health status among the ageing population. It has proven the significance of active lifestyles in preventing mental health problems among the elderly people. Benefits of physical activities in an old age appear in the physical, psychological and social health of the person. It was further revealed that people participating in sports activities were able to decrease their biological age by 10 to 20 years, in contrast to sedentary persons.

A study conducted in Sri Lanka revealed that the prevalence of sufficient physical activity among ageing population was 82.0 percent (CI = 78.5-85.0) for males and 79.7 percent (CI = 76.5-82.6) for females. It further revealed that the odds of having sufficient activity were lower with the increase in the level of urbanization, and that the physical activities were attained through domestic and transport related activity (Weliange, Fernando and Gunatilake, 2016). Even though the importance of physical activity is well known, an alarming percentage (30%) of people throughout the world is physically inactive (Litman et al. 2015). So, it is necessary to investigate the real situation in Sri Lanka.

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Research objectives

The objectives of this study are to investigate the attitude towards physical activities among ageing population and to examine the factors which encourage physical activity.

Methodology

A descriptive cross-sectional study was carried out in Kirillawala – West Grama Niladhari Division. Convenience sampling was employed to recruit elderly people to the sample. The final study group consisted of 52 adults. They were retired from their original job and had different social and professional histories. The subjects were relatively in good health, without serious health problems to limit their physical and psychological efforts. A structured, interviewer-administered questionnaire was used to collect data. The data was analysed using descriptive analysis: frequency analysis.

Results and discussion

Of the 52 participants, 32 (61.5%) were female. 9 participants (17.3%) were aged 55-59 years, 12 participants (23.1%) were aged 60-64 years, 13 participants (25.0%) were aged 65-69 years, 8 participants (15.4%) were aged 70-74 years, 7 participants (13.5%) were aged 75-79 years and 3 participants (5.8%) were aged 80 and above. Almost three quarter (73.1%) of the study population lived with their family members.

Table 1: Knowledge and beliefs about the physical activities

	Disagree		Unsure		Agree	
	N	%	N	%	N	%
Knowledge						
Help to prevent heart disease	15	28.8	9	17.3	28	53.8
Help to improve your health	15	28.8	9	17.3	28	53.8
Lengthen your life	10	19.2			42	80.8
Weaken your bones	18	34.6	20	38.5	14	26.9
Give you high blood pressure	30	57.7	8	15.4	14	26.9
Beliefs						
help me to improve my mental health	1	1.9	9	17.3	42	80.8
help me to improve my general health	12	23.1	12	23.1	28	53.8
give me a sense of accomplishment	9	17.3	28	53.8	15	28.8
help me to increase/maintain my levels of energy			10	19.2	42	80.8
help me to remain independent	14	26.9	24	46.2	14	26.9

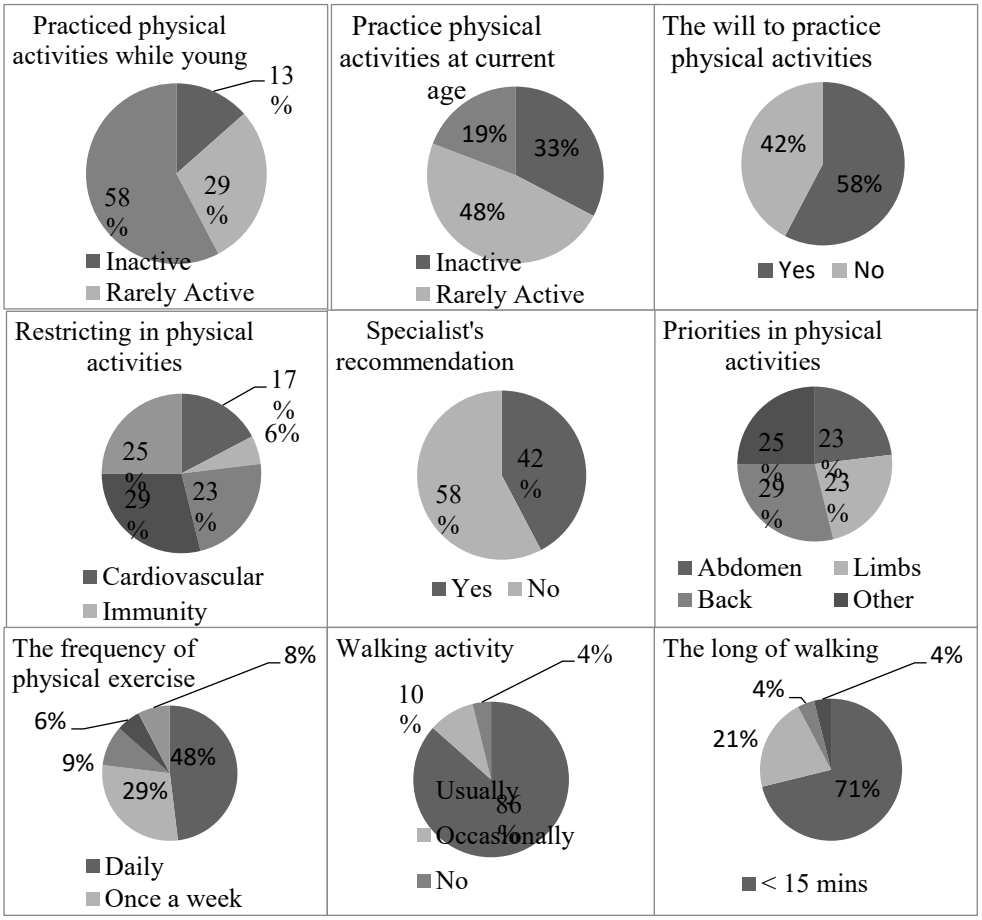
Source: Sample survey, 2019

Level of knowledge about the specific health benefits from participating in physical activity was high. More than half of the participants thought that physical activity can

improve one's health and prevent heart diseases (n=28, 53.8%). 42 (80.8%) participants agreed with the point that physical activities can lengthen life. A minority of participants thought that physical activity can lead to high blood pressure or can weaken the bones (n=14, 26.9%).

The majority of the participants believed that physical activities can improve both mental and general health (n=42, 80.8% and n=28, 53.8% respectively). 53.8 percent of the participants were unsure about whether the physical activities gave them a sense of accomplishment and 46.2 percent of the participants were unsure about physical activities helping them to remain independent. But they agreed that physical activities help them to increase their energy levels (n=42, 80.8%). There were a few more questions that were taken into consideration during this study. They are listed in Figure 1.

Figure 1: General questions related to physical health



Source: Sample survey, 2019

According to the study, a majority of elderly people practiced physical activities actively while young (58%), practice physical activities rarely at current age (48%), but have a higher will to practice physical activities (58%).

The majority of the respondents have restrictions on following physical activities due to bone-related issues and muscle pains (29%), while a minority of 6 percent were restricted from hard physical activities due to immunity problems. Only 42 percent of the participants have got specialists' recommendation to do physical activities. A majority of the respondents prioritize their backs when doing health related activities (n=15, 29%). Twenty five (48%) participants do some kind of physical activity on a daily basis. 86 percent of the respondents revealed that they usually walk while the majority (71%) walk less than 15 minutes. Majority of the participants believe that they have good health in spite of disease and age.

Conclusion

Ageing population should engage in some kind of physical activity, according to their age and health abilities. It was revealed that most of the people had done some kind of a sport activity when they were young. But with the ageing, they have stopped doing such activities. Among those who are still engaged in physical activities, many give priority to back muscles. Among the subjects who practice physical activities, most of them do not follow the doctor's recommendations. They prefer doing physical activities daily. The majority of the participants tend to walk less than 15 minutes.

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Geo-spatiotemporal data integration platform for social good and global citizenship: A case study on identify environmental impacts on public health

L. Liyanage[1]

Introduction

Primary aim of the study is to produce a Data Integration Platform tool to capture "Nationwide Core Data" to one platform including, Weather; Air and water pollution; Population demographics; GIS information on spatial distribution of population, vegetation and land-use, elevation, water streams and water bodies, and transportation, to ensure the integrated data is clean and ready for analysis and to extend the usability of the platform by adding data from several application domains.

Secondly the aim is to illustrate the functionality and the usability of the platform by integrating health data and using disease prevalence and severalty on selected diseases such as Asthma, Diabetes and Obesity, and Cataract. These analyses are led to public policy or services, to improve health, the environment or quality of life. Examples of quarries include finding the significant pollution and weather factors , the risk or vulnerable profiles, predict hot spots associated with a given disease or to predict next day weather and pollution levels and give warnings with respect to risk profiles to manage disease conditions and prevention, leading to policy making and more.

Similarly, with integration of data from other application areas such as bio security, agriculture, ecosystem and so on will generate limitless impact research where there are associated environmental risks, and by identifying associated risk profiles.

Impact:

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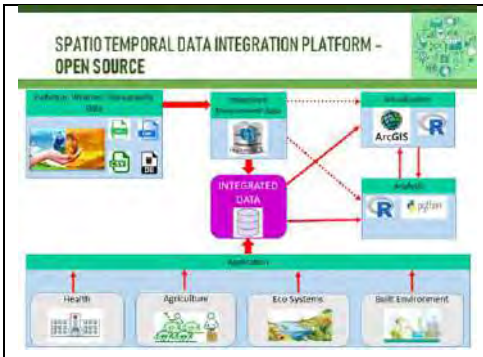
Significance: This Geo-spatiotemporal system will enable users to visually display input measurements of one's degree of health and wellbeing according to geographical groupings linking to patient's demographic data in a new way. This will allow users to integrate environmental conditions associated with patient's location and time enabling a multidimensional spatially distributed longitudinal system. With the capability to understand the dynamics of the multidimensional features and highlight health disparities across population groupings. Assist policy makers to take community centric approach to achieve health and well-being. Capabilities are not limited to mapping and monitor the spatial spread of disease prevalence, severity and outbreaks at district and sub-district levels, it will also generate environmental and risk profiles associated with disease prevalence and severity. Once next day or week weather predictions are available assisting in generating informed response strategies and policy making. Analysis and predictive modelling under a global setting. Provides dynamically real time data inputs, modelling updates, corresponding results and output updates for real time decision making.

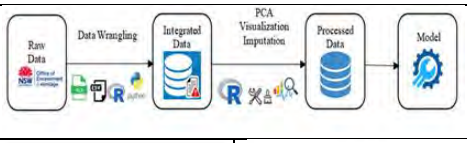
Innovation: A 2019 survey found that 55 percent of data collected is not used, in other words, most organisations have an untapped goldmine of data sitting in their systems to be analysed and value added. This survey reasons that, this untapped "dark data" isn't currently being harnessed as follows: No tool to capture and analyse 85 percent; Data missing or incomplete 66 percent; Too much data to handle 39 percent and similar. Even when data integration is done, majority of such systems are based on aggregate data or not integrated for analysis, the data is not clean with many missing values and so on. This is an innovative solution to address this urgent need.

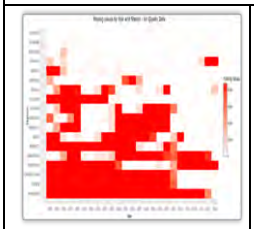
International Importance: This platform will assist in finding solutions addressing global health issues such as in Diabetes and Cataracts. For example, in 2014, 422 million adults were living with diabetes. "Halt the rise in diabetes and obesity in 2025", is one of the goals in Global Action Plan for the Prevention and Control of Non-Communicable Diseases (NCDs) (World Health Organization, 2016). More than 1.2 million Australians are suffering from diabetes and over 2 million are estimated to be at high risk (Sainsbury, Shi, Flack, and Colagiuri, 2018). Total annual cost of diabetes in Australia is estimated at AUD14.6 billion (Lee et al., 2013). According to WHO report in 2019, at least 2.2 billion people have a vision impairment or blindness worldwide, more than 1 billion have a preventable vision impairment, and 65.2 million have cataract (Blindness and vision impairment, 2019). Over 90 percent of people aged 65+ have cataracts and about 50 percent between 75 – 85 years have lost vision due to cataract. Cataracts are 10 times more prevalent in diabetic patients than the normal population (Cataract, n.d.). Thus, the data platform will promote significant benefits.

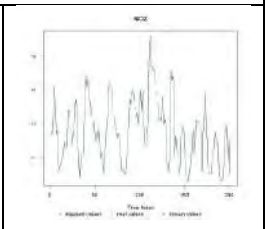
Approach and Methodology

Core elements, weather, pollution, and demographic data is uploaded and integrated via position and time variables using nearest neighbour approach creating a spatiotemporal environmental data source for Victoria. Currently extending to Western Sydney area of NSW for extension to cover all states. Open source software enables wider use. Integrated to GIS data to add geo spatial visualisation capabilities.









Geo-Spatiotemporal Data Integration Platform:

The above diagram illustrates the main components, respective roles, and connectivity within the platform. Pre-processing phase involved variable selection, date-time calculation, geo-referencing, and data integrity checking. Data repository was implemented using PostgreSQL and PostGIS as they support geo-referencing and storage of large data. The spatio-temporal visualization of data was done using QGIS application as it is integrated with PostgreSQL and PostGIS. Statistical analysis, spatial analysis was done using R and QGIS. Care is taken to use Open Source software.

Data Pre-processing Process:

The process flow from raw data to model building is given in the first figure above.

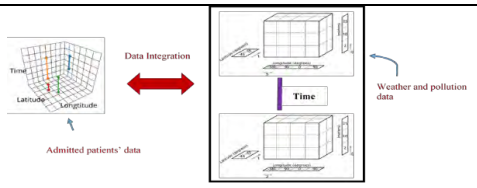
Data Visualisation and Imputation:

Second figure above, depicts an example of identifying missing values by year and pollution station and accuracy of imputation method used. The missing mechanism is Missing Completely at Random (MCAR). Each variable is subject to this algorithm to identify missing values and imputation will be carried out using Kalman smoothing on structural time series or ARIMA Kalman approach based on performance.

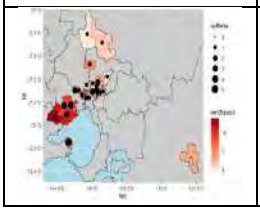
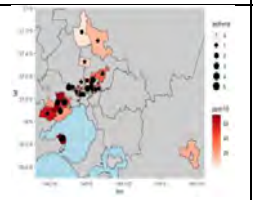
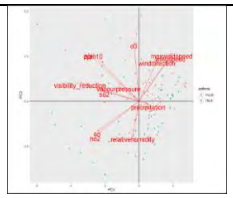
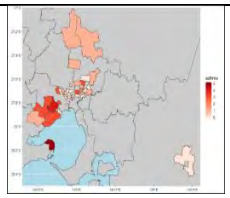
Data and Data Custodians for Victoria State, Australia:

. Environmental Protection Authority on air and water pollution-: 2007 to 2016; 15 stations and pollution species include CO2, CO, O3, NO2, SO2, particles as PM2.5 and PM10, visibility reduction and overall air quality index collected in hourly basis

. Bureau of Meteorology Automatic Weather Stations (AWS) 2007 to 2016 -: All 78 stations in Victoria. Variables include temperature, rain fall, wind speed, wind direction, air pressure; precipitation, recorded every half an hour interval
. Bureau of Statistics -: Population census 2011 data of Victoria; population demographic data collected at suburb and postal area level
. GIS information for Victoria -: Spatial distribution of population, vegetation and land-use, elevation, water streams and water bodies, transportation, and postal area boundaries
. Local Health Authority (Geelong Hospital) 2008 to 2015 -: Emergency admission data, arrival time, arrival date, triage level, diagnosis, type of accommodation, insurance type, age, gender, suburb, and postal code
-Ministry of Health -: Western Sydney Region of NSW and NSW health data

Data Integration Framework: Figure to the right is based on admitted patient data. Data Integration plays a vital role in this data platform. It is carried out based on Position, (Latitude, Longitude and Altitude) and Time variables as illustrated	
Spatiotemporal Data Analysis: Modelling Level 1: Bayesian Generalised Linear Model Level 2: Bayesian Hierarchical Spatial Model	Level 3: Bayesian Hierarchical Spatiotemporal Model Level 4: Operational Statistics Extension

Spatial Variation of Envoronmental Variables with Asthma Prevalance: Hypotheses generating for predictive modeling, visualisation in geo spacial setting together with time varient scale are few capabilities of the system. Tiny snapshot of it's capabilities are below.

Wind Speed (Weather) and Asthma Count	**ppm10(Pollution) and Asthma Count**	**Biplot: Association of environmental factors with asthma counts**	**Asthma counts in Victoria**
			

Beyond contributions to academia: In Health Domain alone, the data platform will add to enhance "Sustainable Community Health", by delivering a System to promote relevant adaptive practices in diverse settings. This takes a trans-disciplinary approach, and seeks to bridge the discourse between environmental justice, public health, community wellbeing and development for their mutual, interdependent influences on health disparities, equity, and social justice. Other application areas will open limitless contributions beyond academia. Providing the passport to "Global Citizenship".

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Identifying the socio-economic challenges faced by elderly women workers in the cleaning service: A case study related to the Faculty of Arts, University of Colombo

M.A.D. Madushanka[1]

Introduction

Ageing has become a global issue and it is not a new phenomenon. Population ageing is one of the major challenges mankind is facing globally (Sheykshi, 2017). It is not limited to one specific state or geographical region. Therefore population ageing cannot be simply defined as a single challenge, as it has become an interdisciplinary discourse combined with other aspects (Phillipson, 2009). Population ageing is not just a biological phenomenon; it is linked to the social policy mechanism, including economic development (Tibbits, 1960).

Although the social sciences, such as Demography, Economics, and Political Science have dominated the academic discourse on population ageing, the need for Sociological intervention in that regard has increased more than ever as it has become an issue that is inherently linked to social order (Perera, 2004).

Sri Lanka has also become a state with a high ageing population compared to other South Asian countries (Kaluthanthri, 2014; Perera, 2017). A number of studies on ageing have also been conducted in Sri Lanka, which discuss the socio-economic consequences of ageing (Perera, 2004; Perera, 2011; Kaluthanthri, 2014; Perera, 2017). Today, research orientation on ageing has changed, and it is not enough to limit ageing to a family or institutional context (Silva and Welgama, 2014). Instead, it is important to study the livelihood activities associated with ageing community (Department of Economic and Social Affairs, 2017). There is a recent trend to identify elderly workers living in urban and semi-urban areas, who have inherited some economic backwardness, turning to cleaning jobs.

Although different elderly working groups and their economic activities have been discussed, it is rare to find adequate studies of elderly labour groups engaged in cleaning services. Representation of these elderly workers can be observed in a wide range of areas, from institutional to non-institutional cleaning services. In that sense this sociological study can be emphasized as a unique study and it is conducted under

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the broad discourse on ageing which lays the groundwork for future research orientations of elderly workers in the cleaning service.

Research objectives

The main objective of the study is to examine the socio-economic challenges faced by elderly women in the cleaning service of Faculty of Arts, University of Colombo. Sub objectives of the study can be identified as to investigate the social challenges affecting the elderly women in the cleaning service, to identify the economic challenges faced by elderly women in the cleaning service and to inquire the social position of elderly women in the cleaning service within the university context.

Methodology

There are a number of elderly groups in the cleaning service who work in various institutions. This study was carried out in the context of Faculty of Arts, University of Colombo as a case study. Compared to other faculties, the Faculty of Arts has a large number of elderly women in the cleaning service and it is difficult to study all elderly workers in the cleaning service at the University of Colombo.

Currently 18 female workers are engaged in cleaning service in the faculty of Arts. For the sample of the study, all 18 elderly women were used intentionally. In-depth interviews were used as a main data collection tool and all the outcomes were analysed through the thematic and narrative methods of qualitative analysis.

Results and discussion

Emphasizing the socio-demographic background of these respondents, they are all over 60 years of age. 10 women have passed grade 8 and the rest of the women have studied up to grade 6. Currently they are living in Colombo urban and semi urban areas. 10 of them have been in the cleaning service for two years and the other 8 women have recently joined it.

The results reveal, the major economic risk faced by this group is that they do not receive significant income through this job. Unlike other jobs, these elderly women workers do not have regular daily working hours and a corresponding salary scale. Another major economic risk faced by these ageing respondents is that they do not receive a fixed pension or an employee provident fund.

It was clearly emphasized here that there is no saving of any kind to be spent on the physical ailments and diseases which are constantly occurring with age. Working on a daily wage basis as well as being at risk of losing that daily wage in the event of any illness is among these older women.

In discussing the social challenges they face, it was mentioned that with the changes in the family structure where more and more families have become nuclear from the traditional extended families, the added responsibility casted upon these elderly women have made them work as cleaning staff. Due to economic competition, children are busy working and their income levels are inadequate for family maintenance and adult welfare.

Within the university context, adults engaged in these cleaning services are more likely to have a lower social acceptance and they are positioned simply as cleaners, or "trash takers". They can also be identified as a marginal group in the university environment where they hardly get any companionship from any other. The decision-making authority over these elderly persons lies with the purview officer and they have their own sub culture with their words and gestures that they use. They share a collective lifestyle in the work environment.

Conclusion

In that sense, the elderly workers in the cleaning service can be identified as a social group that does not receive high social attention. Like other ageing communities, they do not receive any benefits from social and economic welfare programs. Therefore, in the broader discourse on ageing, women in the cleaning service are no longer subjected to positive discussion. Implementing a specific welfare mechanism for those elderly workers can be emphasized as a matter of urgency.

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Impact of child care and housework on employed women during the work from home situation in COVID-19 outbreak: Literature-based study

A.S. Manamendra[1]

Introduction

COVID-19 spreads at a rapid pace worldwide and has become the major global health crisis in the 21st century. This crisis not only affects human health, but also impacts the global economy. With COVID-19 crisis, social distancing and lock-down became associated with human day to day life and most countries have enforced the concept 'Work from Home'.

Work from home does not affect the males and females in a similar manner. Women play dual roles in the family. With this pandemic, most countries have decided to close schools and daycare centers. According to the UNICEF, at the height of nationwide and local lockdowns, around 1.5 billion schoolchildren were affected by school closures (UNICEF, 2020). In addition to that, given social distancing measures, sharing childcare with grandparents, neighbors and friends became very limited. This has dramatically increased the need for childcare during this outbreak. In most families, mothers are likely to be more affected than fathers with child care duties. Therefore, women need to engage with her reproductive role as well as productive role at the same time during this crisis.

Research objective

The main objective of this paper is to examine how child care and housework has affected the employed women in the COVID -19 work from home context.

Methodology

This is a study based on secondary data. International and local reports, books, and journal articles, e-sources related to this study were used as the secondary data.

Results and discussion

The COVID-19 epidemic has massively increased the amount of housework and childcare (Boca et al, 2020; UNFPA, 2020). This mainly resulted from the closing of schools and nurseries, and many women are struggling to make it to work at all, given the need for at least one parent to stay home and mind the children (Queisser et al.

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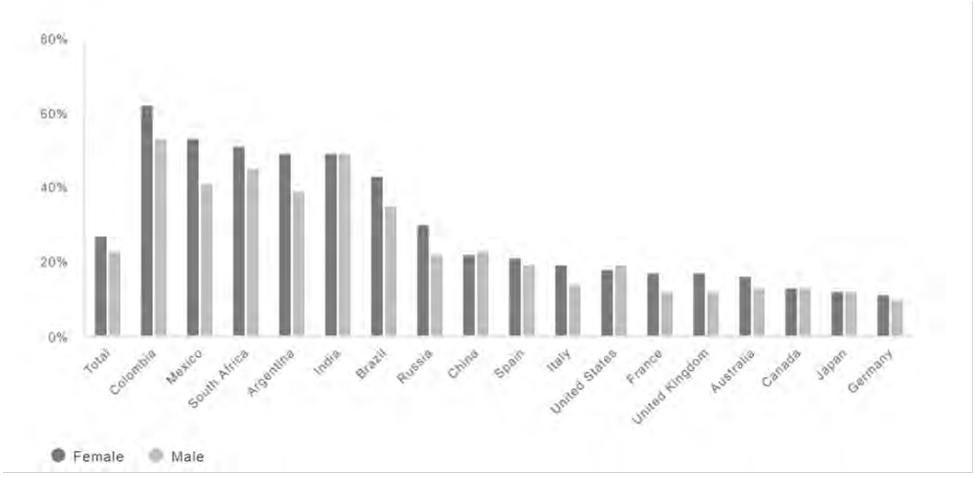
2020). According to Boca et al.(2020) from a study based on Italian population, both men and women have spent more time on housework and childcare during COVID-19 work from home situation. However, the work share distribution is identified to be unequal. 68 percent of women and only 40 percent of men spend time on housework. The percentages for childcare given by females and males are 61 percent and 51 percent, respectively. When both partners work at home, work has been increased to 65 percent of women and 40 percent of men. The percentages for childcare have increased to 77 percent for women and 60 percent for men. Therefore, childcare is more equally shared than housework between men and women. This reveals that men have engaged in unpaid work at home during the pandemic.

UN Women and IPSOS (Institut de Publique Sondage d'Opinion Secteur - Public Sector Opinion Poll Institute) research on COVID-19, conducted in 18 countries from 1–3 May 2020, reveals that women are taking more responsibility for household chores and care of children and family during the pandemic (Figure 1). Across the 18 countries, on average, women were 4 percent more likely than men to say they strongly agreed that their care load had increased during the pandemic. Mexico had the largest gender gap in responses, with 53 percent of women strongly agreeing with the statement, compared to only 41 percent of men (Azcona et al, 2020).

Figure 1: increasing level of responsibilities for household and care of children and family during the COVID-19 pandemic.



Source: IPSOS survey conducted an 18 countries from 1–3 May 2020

Women are more likely than men to raise children as single parents (UN Women, 2020; Hupkau and Petrongolo, 2020). In the UK, 20.3 percent of households with dependent children (aged 15 or below) are headed by single mothers, against 3.3 percent headed by single fathers. Hence, for single parent households, women are far

more likely than men to be the sole providers of the sharp increase in childcare during the lock-down (Hupkau and Petrongolo, 2020).

According to the Angelici and Profeta (2020) smart working which allows flexibility in the working hours and location for certain number of hours each week, leads to increased participation of males in domestic work. This increase is seen more in childcare than housework. However, the distribution of the extra work among couples appears to be highly unbalanced. The extra work is a burden mainly borne by women. Studies from Spain (Farré et al, 2020) and the UK (Sevilla and Smith, 2020) shows that there has been a shift towards a more equal distribution of household work and childcare between men and women, but most of the extra work caused by the crisis has fallen on women.

During this crisis, children's educational needs are fulfilled with home schooling or online schooling. According to Boca et al (2020), children in primary school ages required more than double the time devoted during home schooling than children in lower secondary school. The number of children below primary school ages, instead, does not affect the probability of spending more time on home schooling. This evidence also holds for older children in upper secondary school. For the primary school aged children, both partners spend more time helping them to do their homework. However, this study reveals that women are more likely to engage in their children's homeschooling than men.

Yildirim and Eslen-Ziya (2020) mentioned that the lockdown caused by COVID-19 pandemic has dramatically increased childcare responsibilities, impacting parents' division of labour at home. For working women, this typically increased responsibilities as the main care provider and as an employee who needs to work from home. It described as the double burden or the second shift and this brought an overwhelming demand from both family and work (Hochschild and Machung, 2012).

The workload during the pandemic 'work from home' situation, is affecting women and men's mental well-being. Both parents must pay more attention to their children as well as their work at the same time during this situation. The IPSOS survey was conducted only in the US found 35 percent of women aged 35 to 54 suffers from anxiety[1] due to COVID-19. In addition to that 23 percent of men aged 35 to 54 reported suffering anxiety during this crisis (Azcona et al, 2020). Therefore, the women's time use and current intensity is affecting their well-being than the males, including mental health. Mental health can affect women's quality of life as well their productive and reproductive roles.

[1] Anxiety is a feeling of unease, such as worry or fear about everyday situations.

Conclusion

With the social distancing and lockdown situation during COVID-19 outbreak, most governments enforced the work from home concept to continue their economic activities. Most countries have decided to close schools and daycare centers due to health conditions under this crisis. This has created a child care need in families. In most families, mothers are likely to be more affected than fathers with child care duties and women are more likely than men to raise children as single parents. With flexible working hours of smart working, male participations for domestic works have increased. This increase is seen more in childcare than housework. However, the distribution of the extra work within the couple appears to be highly unbalanced and that burden mainly belong to women. Moreover, this burden highly affects for women mental health conditions. Women can seek support from their respective Partners to reduce their workload which will result them to spend more time together. In the situation of COVID-19 outbreak that will create a healthy life style.

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Post flood disaster management related issues: A case study of Bulathsinhala Divisional Secretariat Division

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Introduction

A Disaster is a calamitous event of slow or rapid onset that results in large – scale physical destruction of property, social infrastructure, and human life. It results in the existing resources and coping mechanisms of individuals, groups, communities and societies being overwhelmed (Deeny and McFetridge, 2000). Floods are natural disasters and pose a threat to the lives, property, and infrastructure of the affected area. Even though the risk cannot be fully eliminated in a disaster-prone area, several methods can be used to manage floods, once they occur. This includes identification of flood-prone areas, timely detection of the affected areas, mapping the rescue routes, and arranging logistics to carry out the rescue as soon as possible (Deeny and McFetridge, 2000). The volume of water carried by a river is not the same every year due to complex meteorological factors and varying characteristics of the ground on which the rainfall occurs. The river is considered as overflowing when the flow exceeds the capacity within the river banks. The magnitude of the flood depends on the catchment characteristics, the intensity of the rainfall, its duration, and the ground when the heavy spell of rainfall occurs.

A meaningful definition of flood should incorporate notions of damage and inundation. Different individuals and groups are affected differently, and their ability to cope with the events differs depending on a range of factors, such as income, living situation, gender, ethnicity, and age (Morrow, 1999; Wisner et al., 2003). This differentiated approach to understanding disasters has proven central for risk reduction activities. Rather than only focusing on controlling nature, disaster risk management can be extended to preparedness and nonstructural mitigation (Cupola, 2011), as well as addressing root causes such as structural injustice (Wisner et al., 2003).

In Sri Lanka, floods are the most common type of disaster and flood risk is escalated due to deforestation, improper land use, and growing populations (Ministry of Disaster Management of Sri Lanka, 2012). Most floods are caused by overflowing rivers during the two monsoon seasons. In June, 2017 floods were the worst disaster

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triggered by natural hazards in Sri Lanka. Kaluthara District, which is fed by the southwest monsoon rains, suffers from frequent floods.

Post disaster recovery is defined as 'the restoration, and improvement where appropriate, of facilities, livelihoods and living conditions of disaster – affected communities, including efforts to reduce disaster risk factors. The recovery task of rehabilitation and reconstruction begins soon after the emergency phase has ended, and should be based on pre-existing strategies and policies that facilitate clear institutional responsibilities for recovery action and enable public participation. With this background, post disaster management is an area of consideration and further investigated.

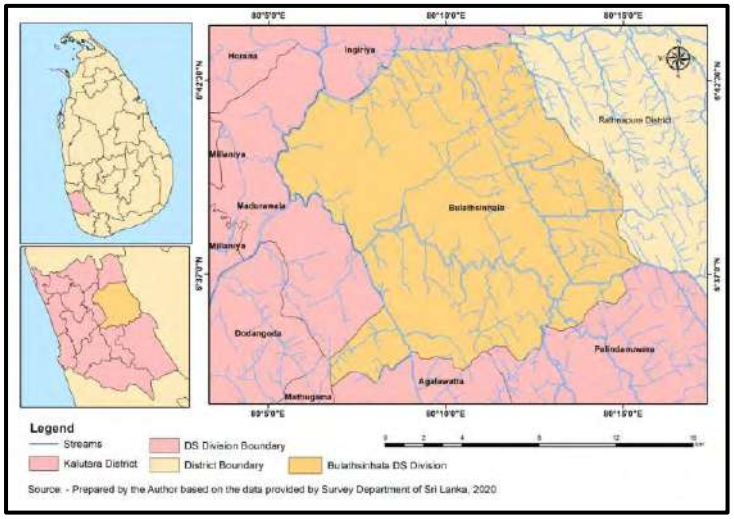
Research objective

The objective of this study is to identify the post flood disaster management related issues in Bulathsinhala divisional secretariat division with special reference to the floods that occurred in the year 2017.

Methodology

Data for this study was obtained through the primary data collection methods of observations, interviews, questionnaires and the sample size of the study was hundred families selected using the purposive sampling method. All the selected families in the Divisional Secretariat have been affected by the floods. Area selected for the study is further elaborated in the Map 1.

Map 1: Relative Location of the Study Area



Source: Prepared by the Author, 2020

Secondary data was collected from the Disaster Management Center (DMC) and from the Department of Survey. The following table provides detailed information on the research Design adopted in the study (Table 1). Both descriptive and inferential statistical methods have been utilized and the data is presented using maps, charts and tables.

Table 1: Research design of the study

Type of Data	Type of Data	Source and method of Data Collecting	Data Analyzing	Data Presenting
Flood Data	Secondary Data	Disaster Management Centre – (2017)	Descriptive Statistical Methods	Maps, Charts, Tables
Information of residential groups	Primary Data (100 Families)	Observations, Questionnaire, Focus group – Discussion	Descriptive and Inferential statistical Methods	Charts, Table, Maps

Source: Prepared by the Author, 2020

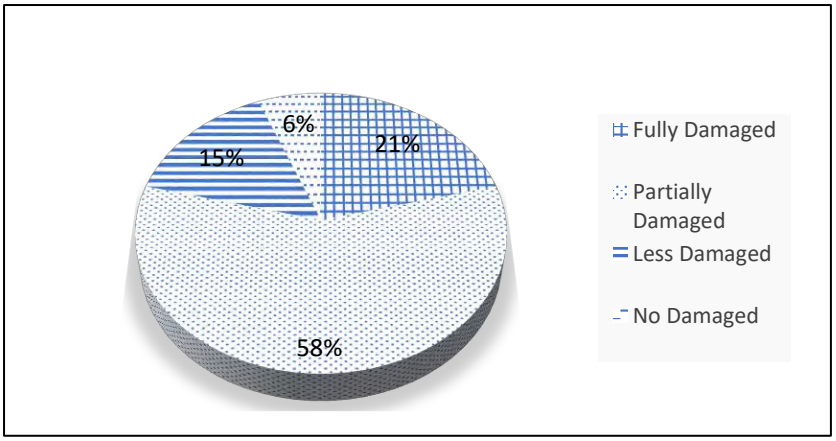
Results and discussion

Nature of post flood disaster management

In order to obtain a clear identification on the nature of post flood disaster management, it is divided into three stages as emergency response and relief, short term: recovery for rehabilitation, and long term: reconstruction and development. Among these three phases, emergency response and relief as well as short term recovery and rehabilitation processes have succeeded than the long-term reconstruction and development.

People in this area faced many problems after the 2017 flood and many houses were damaged. Social impact of the disaster has been identified based on the impact on family, social relationship, education and health. Deaths, injury and physical disability have been identified as social impacts on the family. When concerned about the economic impact, their place of residence has been fully, partially and less damaged as shown by the chart given below.

Figure 1: Impact on place of residence of people of the affected area



Source: Sample survey, 2020

According to Figure 1, 21 percent of the families have completely lost their place of residence while 58 percent and 15 percent are respectively reported as partially and less damaged. It can be identified that economic impact was higher than the social and cultural impact in the case of Bulathsinhala. Large numbers of families continue to suffer from wall cracks, dilapidated toilets and broken toilets. 20 percent of the houses were at risk of wall cracks.

Figure 2: Wall Cracks in Damaged Houses

Source: Prepared by the Author, based on field observation (2020)

According to field observations, it was identified that 21 percent of the houses were completely damaged. At the same time, electrical wires and the electric system of the houses were damaged and could not be repaired. 60 percent of the families were of the opinion that the compensation provided by the government for the construction of houses was not sufficient. Majority of the families in the Bulathsinhala Divisional

Secretariat are tea growers and hundreds of thousand rupees have been lost due to the destruction of their tea plantations, because of floods. On the other hand, they have not been able to resume tea cultivation as they have not yet received any subsidy. Furthermore, functioning of some of the economic activities like farming, fishing, tailor shops, were halted due to the flooding. It was also noticeable that there were many problems related to sanitation and people were suffering from skin diseases and wounds. This study identified that 12 women in the Paragoda area were suffering from these diseases. Unfortunately, Dengue patients have been found in Molkawa and Paragoda areas due to the emergence of mosquito breeding places after the floods.

These economic and social problems have caused stress among these victims of the flood area. Although the government intervened and provided assistance, irregularities have taken place. According to their opinions, the subsidies were not given to the flood victims and given to people who were not affected. Respondents felt that this problem was caused by the poor performance of their Grama Niladharies and due to their favoritism to some groups. For example, the challenges and issues faced during the post disaster flood management can be listed out as unequal distribution of donations, inability of attending schools, socio-economic issues and delay in repairing damaged roads and other infrastructure facilities. In addition, some of the other prevailing issues can be identified as lack of strong institutional arrangements, lack of responsibility provision, failures in providing educational facilities at the initial stages, lack of socio-cultural studies of the community attitudes of the people and lack of authorities' support.

Conclusion

In conclusion, the study has identified that there are many issues related to post flood disaster management in this Divisional Secretariat Division. It can be noted that the preparedness and post flood disaster management planning in this area were slow. Most issues as well as challenges were identified under the phase of long-term reconstruction and development. The lack of strong institutional arrangements has caused this situation. In addition, it can be concluded that people's attitudes also considerably influence in increasing the complexity of the issues and challenges of post flood disaster management. Furthermore, it is necessary to establish a proper mechanism to enhance institutional coordination and commitment. Boats to be provided to travel to a safer place during the floods and accommodations need to be provided. Affected communities should have assistance for the speedy recovery of disrupted livelihoods and cultivations and they should be given the facilities to rebuild their lost assets. Therefore, the administrative structure at the state level should be developed and the authorized officers should be allocated appropriately for post flood management projects. Relief centers should be established and an action committee

for emergencies should be appointed. It is also important to conduct public awareness programs to prepare the community for immediate response.

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The influence of gender stereotypes on career choices of undergraduates of state universities in Sri Lanka

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Introduction

"Gender" is mainly used to describe how society gives particular roles to boys and girls since birth. Gender has to do with behaviors that have come to association with masculinity and femininity, and with how people see their roles as males or females (Kauffman, 1997). According to Ramalingam (2006), stereotyping is the perception, clarification, and assessment of social objects (events) on the basis of specific notion. Gender stereotypes originate from gender roles which define the responsibilities of females and males. Previous research has shown that social roles determine the accepted behavioral norms for men and women and thus encourage gender differences in interests and activities (Eddleston, Veiga, and Powell, 2006).

Females and males are expected to perform certain duties in a particular society where these roles are basically constructed by the society or culture in which an individual lives. From the past, parents tend to treat girls and boys differently where these attributes affect children as they develop. As Berk (2010) points out, girls are dressed in pink, and parents tend to be gentle with the girl child. On the other hand, boys are dressed in blue, where parents are harder with them. In the process of treating children differently, girls are offered more stereotyped toys such as dolls, and without doubt, roles such as taking care of children, cooking and engaging in food production are attached to females, while males are identified with roles such as protecting families, building houses, as well as engaging in paid employment, cash crops production and business (Archer and Lloyd 2002). Similarly, the study by Ji et al (2004) showed that realistic professions are considered typically masculine and therefore preferred by males; social and artistic occupations are considered traditionally feminine and are thus preferred by females.

Some of the observed gender differences in occupational choices may be attributed to the self-cognitive development, women tend to consider a different set of occupations as potential options than men do. It is believed that stereotypic views might affect individuals' self-cognitive development, as well as their feelings, actions, and attitudes. Thus, career-related gender stereotypes influence the process of career decision making and should be studied in the context of the choice process.

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This research focuses on the possible effects of gender stereotypes on choosing occupations. A large number of studies have been conducted on the influence of gender stereotypes on career choices (Archer and Lloyd 2002; Anker, 1998; Badgett and Folbre, 2001). However, there is a lack of mixed-method analysis on investigating the undergraduates' perceptions on the influence of gender stereotypes with regard to their career choices particularly in the Sri Lankan context.

Research objective

The objective of this research is to examine the influence of gender stereotypes on carrier choices of undergraduates in state universities in Sri Lanka.

Methodology

This study has employed a mixed- method research design that involved 100 undergraduates from the state universities of Sri Lanka. According to Tashakkori and Creswell (2007), mixed-method is a combination of both qualitative and quantitative measures which offers multiple perspectives to examine a research problem, expands the understanding of a complex issue, and leads to better interpretation of the findings. Participants were selected through convenient sampling.

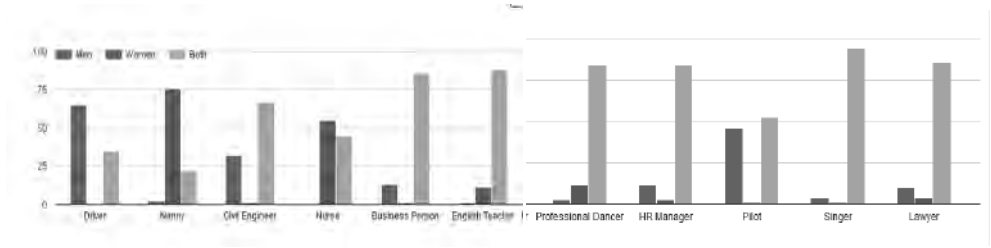
The research instruments utilized to collect data were a survey questionnaire which consisted of 12 items and semi-structured interviews. The items in the questionnaire were scaled using five-point Likert scale. The data gathered from the questionnaire were analyzed using the Statistical Package for the Social Sciences (SPSS). The researcher has conducted semi-structured interviews with 10 undergraduate students. The semi-structured interviews were audio taped, transcribed and coded. After coding the data, the prominent themes and recurring ideas were identified which were later interpreted to draw meaning from. Thus, the study applied thematic analysis whereby data gathered were categorized into themes and sub-themes so as to be comparable.

Results and discussion

The results received from the data collection can be briefed as follows. The first sets of questions address the ability of deciding career path by the students themselves and how often and from whom they get the advices from.

However, the study investigates how the participants perceive jobs and to see whether or not gender stereotypes have an impact on their career choices (Figure 1).

Figure 1: Perceptions of career by gender



Source: Sample survey, 2020

The findings elaborate that there is the idea of occupations being gendered. Especially in Sri Lanka, where in the history that women were unemployed, women have proceeded to have the equality now. The main concern in here is the extent these stereotypes are broken to. Hence, as illustrated in Figure 1, the gender stereotypes have been broken when *singer, lawyer, pilot* jobs are concerned. Significant amount of participants have viewed the particular jobs as being able to be taken up by both men and women which proves that there is always the tendency of changing the stereotypes over time. Secondly, the preference for jobs such as *business person and English teacher* can also be noted remarkably as non-gendered with a percentage over 75. However, it is also notable that nearly 10 percent of the sample still have gendered the two job categories Business and Teaching English for Males and Females respectively.

On the other hand, jobs such as Nanny and Driver are very much gendered while over 60 percent believe that Driver job can be performed best by men. Nearly 75 percent of the sample believe that only females could perform the job role of Nanny.

The university undergraduates have mostly shown a deviation from the stereotypes although in small portions, the deep-rooted stereotypical ideas can be seen. However, jobs such as Nanny and Driver are still gendered. As for the results of the semi-structured interviews and open-ended questions in the questionnaire, few recurring themes could be identified.

Impact of gender stereotypes on capability of men and women

The term 'capability' has been a recurring term in the transcribed interviews. However, despite the stereotypes, majority believes that women are equally capable as men for career choices such as business, pilot etc. It is noteworthy that, some participants are adamant in their opinion that the lifestyles and the 'role' expected from both men and women promotes some career choices such as teaching (for women), pilot (for men) and nanny (for women).

Suitability of the career choices depending on gender

Majority of the undergraduates consider that following the passion is important and it is the only determinant of suitability. However, majority did not applause the idea of men being nannies, the reason being Nanning, according to some, requires an emotional appeal to the job which most men would not have or would not show that they have. The men did not applaud men working as Nannies since they do not prefer it personally and assume that most of the men would not.

Disagreement on gender-based career

Nevertheless, majority disagree on the idea of gender-based career and explained that a career choice is unique from person to person. Participants brought up the idea that gender-based career could hinder personal and economic growth.

Impact of Sri Lankan culture on gendered jobs

Sri Lankan culture has an impact on career choices. Some participants explain their personal experience on how they had to choose a certain subject stream due to the influence of the parents, which they assume is a result of traditional, cultural impact. Some explain, being a male, choosing a career like dancing or nanny would seriously challenge their masculinity. However, some participants brought up the idea that there is a new tendency for the stereotypes to be neglected and they will eventually be worn out of the society.

Issues and practicality of non-gendered jobs

Participants were inquired as to why they would not perceive certain jobs as being practical. They raise the concern of recognition, salaries in Sri Lanka, societal pressure and image. Due to these reasons, some refuse choosing what they are passionate about as their major career.

Conclusion

In concluding, along with the data gathered in the research, we cannot eliminate 'gender' as a factor influencing career choices of the undergraduates of the state universities. Overall, they have responded positively to given situations in which they were inquired on non-gendered opinions on a given job which they would hypothetically be good at. However, the participants have raised a number of concerns such as culture, practicality issues and gender roles. Although, some participants fully agree with a non-gendered perspective, the majority has questions which denies it.

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Utilization of human population as a resource in flood disaster management of Kolonnawa Divisional Secretariat Division

K.B.I.S. Ranwella[1]

Introduction

The concept of population ecology is used to artificially control population factors through human intervention in the natural dynamics of the population; a practice known as population management (The Saylor Foundation, 2016). Utilization of Human Population as a Resource in Flood Disaster Management is one of the most contemporary issues worthy of discussion in Sri Lanka in the view of the fact that people affected by floods face various problems. In Human Resource Utilization in flood disasters, the Human population can be divided in two main types; the people who faced the flood and the people who manage the flood-affected people. Utilization of human population as a resource in flood disaster management means rescuing and consoling the people who have been adversely affected by flood disasters.

This study becomes significant as the main focus is on the utilization of human population as a resource in flood disaster management. Kolonnawa area is prone to flood disasters. According to Disaster Management Centre data of Sri Lanka, several floods can be identified from 1980-2016 in Kolonnawa Divisional Secretariat Division. In the 1989 flood, 5,000 people were displaced. In the 1991 flood, 12,500 people; in the 2005 flood, 51,634 people; and in the 2016 flood, 15,5060 people were displaced respectively. According to DMC data of Sri Lanka, from 1980-2016 floods have increased. Therefore, utilization of human population as a resource in flood disaster management can be introduced as a temporal necessity. This study fulfills a research gap on the topic of the utilization of human population as a resource in flood disaster management.

Research objectives

The area studied is highly vulnerable to flood risk. Hence, the utilization of human population as a resource in flood disaster management is essential in this area. The main objective of the study is to identify the way of utilizing the human population as a resource for flood disaster management.

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Other than the main objective, identifying the general information about the civilians in the area, identifying the human population active in flood situations, and identifying the spatial distribution and changes of the area due to human activities were the sub-objectives of this research.

Methodology

Questionnaire method were used to gather information from the study area. The purposive sampling method was used to select study areas based on vulnerability while simple random sampling method was used to select 70 respondents. Kolonnawa District Secretariat Division (DSD) has 46 Grama Niladari Divisions (GND). 06 out of 46 are highly affected by floods (2016 Flood). Due to the difficulties of interviewing people from all the GNDs, Two GNDs were chosen from Kolonnawa DSD. From the selected sample GN Divisions Sedawatta and Meethotamulla can be identified as high flood risk areas in Kolonnawa DSD. To supplement this data from respondents, four government institutions which support efforts to mitigate floods were selected. By interviewing the officers who work in these institutions secondary data was obtained.

Results and discussion

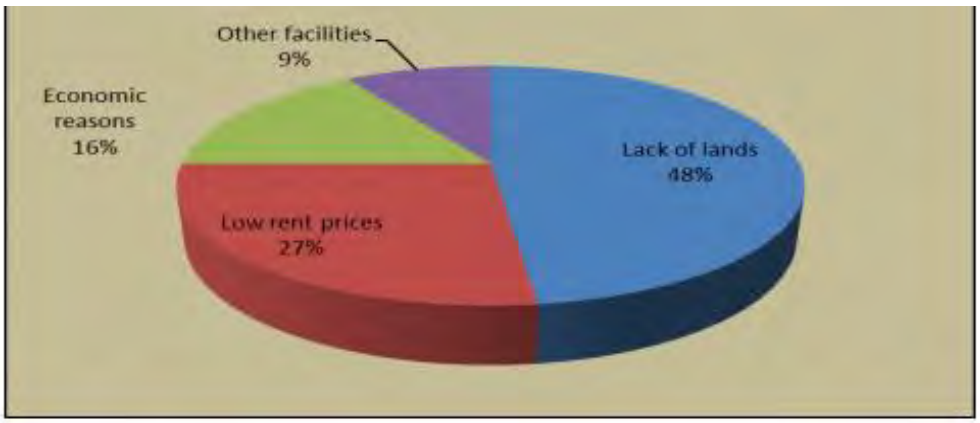
51 percent out of the sample were selected from Sedawatta GN Division and 49 percent of the sample were selected from Meethotamulla GN Division. When analyzing the data regarding the educational status of the sample, it was clear that the majority of respondents of this area are educated. 40 percent of the sample has at least completed a computer course and most of the people are educated in different fields. Their technical knowledge is also high, and it can be used in flood situations. Most of the residents do not originate from this area; the results show that 50 percent of the residents live in rented houses and 22 percent of the people live in flat houses in the sample areas.

The important fact that we can identify as per the data is that in both sample areas, there are no casualties recorded so far due to the flood situations. Therefore, we can identify the villagers who have followed techniques and methods, especially adaptation strategies in order to survive their lives. Out of all damages which have been recorded, house damage cases have been recorded at 37 percent in the area and business damages have been recorded around 50 percent in the area. Environmental (ecological) damage cases have been recorded 13 percent.

People who live in the area clearly know that Kolonnawa DSD is recognized as one of the most flood vulnerable areas in the Colombo district. Residents face flood

disasters regularly. But still, people remain in this area. Almost half of the responders have the common reason which is the lack of lands. In accordance with the increasing population, there is a lack of land in Kolonnawa DSD. Therefore, residents manage and adapt to the flood situation. 27 percent of the sample lives in this area since they can find houses with low rent. 16 percent of the sample is doing business, and they have stuck in this area with their occupations.

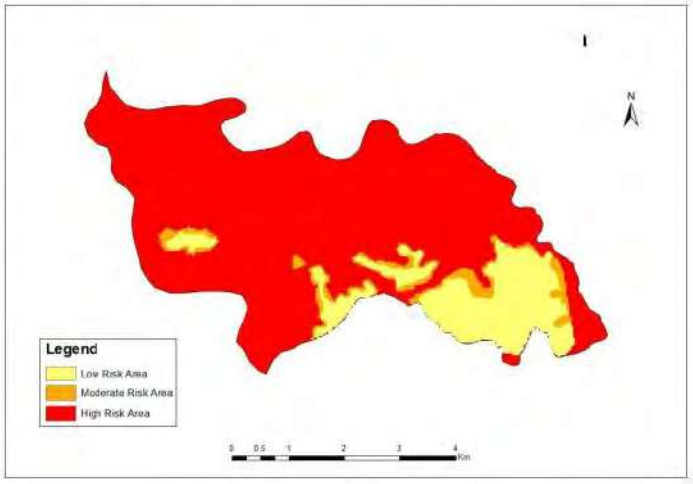
Figure 1: Reasons for life in high-risk flood-prone areas



Source: - Compiled by the author by using collected field data.

Not only awareness but also preparation is necessary to avoid huge threats of natural disasters. But on the other hand, to be prepared, people should have awareness of the concept. As per the analyzed data, the highest percentage of the sample which is 24 percent is somewhat knowledgeable about the concept of human resource utilization in flood situations. The lowest percentage of the sample which is 2 percent is extremely aware of the concept. We can claim that the awareness of human population management in a flood situation is unsatisfactory. In order to utilize the human population as a resource, they have to be more aware of the strategies where they can avoid the threat effectively.

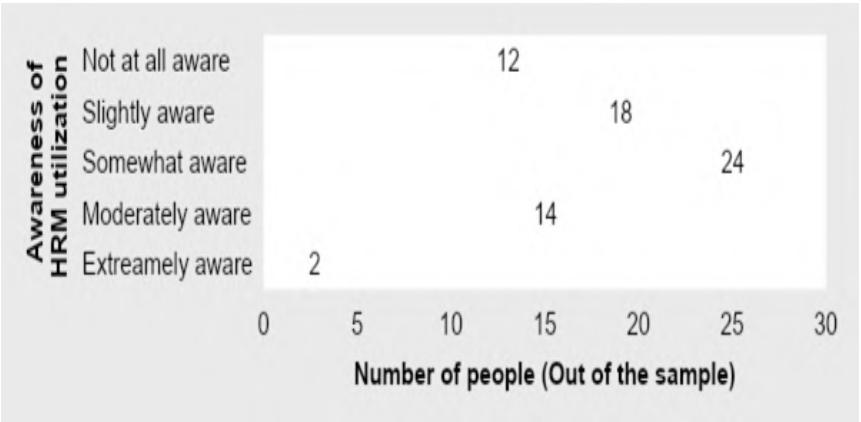
Figure 2: Awaraness of human resource utilization concept in flood situation



Source: Compiled by the author by using collected field data

In this study, I also created a risk map that identifies the flood vulnerability of Kolonnawa DSD. To create this map, I used several criteria, database and sources to measure the vulnerability level. Altitude (height above the sea level), Distribution of Kelani river basin – map, Satellite view of Kolonnawa flood area and maps which represent Residential status, House damages, Household information about the Kolonnawa DS Division according to the 2016 flood data. In this map, the area was separated into three categories according to the vulnerability level. Low, moderate and high risk areas were identified as follows.

Map 1: Flood Vulnerability of Kolonnawa DS Division



Source: Compiled by the author by using GIS software and secondary data.

Conclusion

The utilization of human population as a resource is a very important concept for mitigating the threat of any disaster. When considering the analyzed results I figured that when they are having flood situations, people have been used to leaving their houses and daily routines without considering their property or other resources. This means people care about their lives instead of thinking to protect their property and the environment. People have not engaged with actions formulated on behalf of the environment. This is a very negative point that we can be seen. People have to understand their roles when living in a vulnerable area and have to be more responsible for themselves, others, and the environment. The government and other disaster-related institutes should implement new concepts that can educate people on their roles in flood situations.

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National Transfer Account in Maldives – The future of work in Maldives

F. Riyaza[1] and M. Abdrigo[2]

Maldives has experienced vast social and economic changes over the past three decades. These developments have made positive impact on the livelihood of many Maldivian. The population dynamics has changed over the years and it is said Maldives has entered its demographic Window of opportunity between 2008-2010 (May J, 2018).

Economic changes the country has achieved is commendable. Maldives has become the only middle-income country in South East Asia with the highest GDP per capita country in the region. Economic changes are achieved by accompanying changes in its population. The population consist of working age people and the country has been receiving influx of migrant workers over the past decades.

The impact of population changes in economic terms has never been addressed in the country. This paper is based on the first ever National Transfer Account (NTA) estimates done for Maldives. The NTA is an accounting framework that measures how economic resources are consumed, produced and reallocated among people of different age groups in the population. The economic lifecycle in Maldives has been analyzed and it provides likely trajectories of labour market in the future.

This is a work National Bureau of Statistics has carried out together with UNFPA Maldives. For this purpose, we have used Household Income and Expenditure Survey (HIES) 2016 data together with budget details used in SNA. NTA is designed in a way that it is consistent with the United Nations System of National Accounts and has followed the steps given in NTA manual.

The results show key interesting findings. The economic lifecycle of Maldives shows a lifecycle deficit; meaning the aggregated consumption is more than labour income. The aggregated expenditure on public health is more and it increases with increase in age. When disaggregated by resident type, around a third of all labour income are earned by the resident foreigners working in the country.

In this paper, we also highlight the importance of human capital investment and how has been the annual growth in the output per worker. The human capital spending is relatively low in Maldives compared to its current economic growth. The annual output per worker has remained stagnant over the years.

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The results also present what might happen if were able to employ the unemployed and potential labour force as of now. Interesting findings reveal useful information for policy makers, both opportunities and challenges.

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The wellbeing of elderly people: Analysis of elders living in Walasmulla MOH area

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Introduction

The worldwide increment in the number of elderly above the age of 60 years has caused sudden demographic change in the 21st century. Over a time of two decades from 1950 to 1970, the global population above 65 years remained at 5 percent. During the 1980s, this rate gradually increased to 10 percent (WHO, 2004). The assembled countries expressed that 1 of every 7 of the total population will be more than 60 years continuously up until 2025(WHO, 2003). The difference in future from 46 years in 1950 to 65 years in year 2000 is required to be expanded as long as 76 years by 2050 (WHO, 2004). Globally, there are many studies conducted on this topic, but only a few studies are available on this topic in Sri Lanka.

Sri Lanka has experienced a gradual ageing of its population during the past 50 years and the intensity of ageing is expected to increase at a faster rate during the next 50 years. Therefore, an interesting feature of demographic transition in the next half of the century will be the rapid ageing process and growth in the aged at advanced ages. Such a rapid evolution of ageing could pose serious challenges for the country in the immediate future. Various ageing indices and measures used in the analysis confirm that the onset of population ageing commenced in Sri Lanka in the 1980s. This process has been accompanied by changes in the characteristics of the aged population. The increasing proportion of the oldest-age group, a rising number of women at advanced ages and changes in the marital status of elderly need greater attention by policy makers because they are more vulnerable than the other segments of the population (Kaluthantiri, 2014). The elders likely to benefit the most from greater social contact are those who are also the most likely to face barriers, including older women, the oldest elderly, those living alone and those in poor health. Understanding these barriers can inform strategies to overcome them (Marsh et al., 2018).

Old age is a sensitive phase where elderly people need care and comfort to lead a healthy life without working and anxiety. Lack of awareness regarding changing behavioral patterns in elderly people at home leads to abuse by their kin. Hence, this

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research identifies the issues that affect the lives of senior citizens and further complications that would lead to major physiological and psychological problems.

Research objectives

The main objectives of the study are exploring the socio-demographic characteristics of elderly people and assessing the physical, social and mental well-being of the elders.

Methodology

This study is a community based descriptive cross-sectional study which was carried out in Hambanthota district of the Southern province. The district consists of 12 MOH areas. The study was carried out in the Walasmulla MOH area. The study population consists of the elderly population who reside in the Walasmulla MOH area. In this study, an elder was defined as an individual above 60 years of age. Any Elderly who had been residing in this area for at least three months was included in the study. Data collection was done by using an interviewer administered questionnaire and an observation checklist was used to assess selected aspects of the elder person's present situation at the time of the home visit. The sample consisted of 420 participants. In addition to socio-demographic data, physical wellbeing (Instrumental activities) and social wellbeing were also assessed in the study. The collected data was analyzed using the Microsoft Excel and Statistical Package for Social Sciences (SPSS). The SPSS version 22 program was used in the organization and presentation of the data.

Results and discussion

In the descriptive results of the socio demographic variables, the percentage of females is higher than males (64%: 36%). All of them are Sinhalese and 94 percent of the participants were Buddhists. In terms of age, the majority of them belonged to the age group of 60-70 years. The majority of the population (89%) were self-employed. 94 percent of them were married and 91 percent had children. 62.39 percent of them had a source of income. When it comes to earning, only 37 percent had an income above 6,000 LKR per month. 19 percent of them were able to live on their pension. 9 percent of participants were dependent on the money given by their children. A majority of 66 percent were residing in a house of their own. Only 19 percent lived in a house of their children. In terms of the living arrangements, the majority (40 percent) lived with their spouses and children.

In addition to the above data on socio demography, specific components of quality of life which are most relevant for the older participation in the study were also examined. According to the data collected on physical activities of daily living, the majority (96.3%) were able to eat alone. 94.04 percent were able to get dressed and

81.6 percent were able to walk 100 yards at home on their own. Furthermore, the majority were able to use a toilet at home (76%), able to shave (89%), comb hair (46%), bathe (90%) and get into bed alone (83%).

Under the instrumental activities of daily living, the majority were able to go outside the home using public transportation (76%), engage in day to day activities at home (79%), go to the shops to buy things (76%), go to treatments alone during an illness (66%), perform money transactions alone (77%), visit home of children and relations and (72%) go to a place for worship.

Under psychological assessment 31 percent accepted that they lose much sleep over worries. Majority (67%) did not think of themselves as worthless persons. Only 32 percent feel that they are happy and not depressed. 53 percent accepted they do not constantly feel that they are under stress. 83 percent of them frequently visited religious places. 66 percent of the participants are satisfied with the visits of their children.

Sri Lanka is a country with a culture of people looking after their elders compared to many other countries in the world. In rural Sri Lanka, usually elders have a very active life. They walk a long distance daily to attend to their routine activities (job/school). Frequently, they are involved in the agricultural activities in their home garden. These factors may provide the ability to maintain their physical activeness well during their older age. Similarly, in the study, the majority of the participants were fit enough to get their daily activities done. When the physical activeness was higher, they showed good sleep quality and lesser depression which in turn positively affected mental well-being. Furthermore, in rural Sri Lanka, elders have many leisure-time activities like gardening, visiting religious places, and looking after grandchildren. These factors keep them feeling that they are worthy members of society.

In this study, the well-being of elders is recognized in different ways. Physical well-being is satisfactory for most of the participants. However, psychological well-being shows poor results with only 1/3 of respondents stating that they are not psychologically affected. However, such an answer is in a certain way not entirely satisfactory because an understanding of well-being or to actually experience well-being is not always a question of having good physical health and being free of disease.

Conclusion

The predominant female elderly population included in the study demonstrated an overall satisfactory level of wellbeing (physical, social, mental). The majority were able to perform their daily activities themselves without any family support. Since they prefer a simple life with very little expectations, they enjoy a contented life with

their families and neighbors. Even though economically the level of income was low, they never highlighted the fact that they are unsatisfied with the income. The majority of the elders think that they are worthy people, but contradictorily, the majority feel they are depressed. Hence, the mental wellbeing aspect should be more focused on. The study recommends measures such as home-visits by the midwife to conduct counselling sessions and the organization of community activities under the mentorship of the elders. Furthermore, advanced research on the elderly care can help develop appropriate policies and programmes. Therefore, overall the study shows positive aspects of the well-being of elders. But there are certain challenges that need to be identified and addressed in relation to this area.

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Issues related to parent-adolescent communication on sexual and reproductive health

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Introduction

Sexual and Reproductive Health (SRH) is a growing concern in both developed and developing countries due to its importance on the overall health status of an individual. Yet, in most parts of the world, SRH needs of adolescents are often ignored. As a result of the cultural backgrounds of the societies, most of the parents and the family members consider discussion about sexual and reproductive needs as taboo. However, they expect adolescent children to reach adulthood without early pregnancy, to delay the initiation of sexual activities and to be free from Sexually Transmitted Infections.

Adolescence is a time period where you experience change both physically and psychologically and can be easily influenced (World Health Organization, 2020). It is important that both adolescent girls as well as boys are aware of their bodily and psychological changes. In order to achieve this goal, most schools have included SRH as a part of the curriculum in order to increase awareness (De Silva, Somanathan and Eeriyagama, 2003). Despite these programmes and initiatives carried out by the government and non-government organizations, literature indicates that in Sri Lanka, 70 percent of the 10-13-year olds were not aware of the physiological changes taking place in their own bodies. In contrast, a fair proportion of the adolescents are reported to be sexually active (Thalagala, 2004).

The common shortcomings to be seen in most of the SRH initiatives are their negative approach and problem-orientation that mainly focuses on unwanted pregnancies and STI's (Bett, Jejeebhoy, Shah, and Puri, 2003). Even though components related to SRH are included in the school curriculum, due to the lack of training provided to teachers on methods of disseminating the knowledge properly, they are uncomfortable in discussing the practical issues of the adolescents (Hettiarachchi, Sivayogan and Gnanissara, 2008/2009). At the same time, public health officials such as public health nursing sisters, primary health midwives are unaware of the policies or guidelines to guide adolescence SRH practices and have a level of discomfort in discussing SRH issues with adolescents. As the text-book approach of disseminating SRH knowledge has been ineffective, parent-adolescent communication is the most

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referred method of transferring SRH knowledge to adolescents. There are a number of programmes initiated by different countries, which have also been quite effective.

Research objective

The objective of this study is to investigate the issues faced by mothers and adolescents in communication related to SRH.

Methodology

This is a primary study based on two types of respondents. Primary respondents were mothers with at least one adolescent child. Secondary respondents were adolescents who belong to the age group of 10-19 years. In the selection of primary respondents, mothers were considered due to the concept of mothers being considered as the "safe space" which was utilized in the related studies (Othman, et al., 2020). The sample of the study was limited to 210 mothers and 50 adolescents. Respondents were selected from Akkara 50 Grama Niladhari Division (GND), which belonged to the Katana Divisional Secretariat of the Gampaha District. Respondents were selected using simple random sampling techniques and univariate and bivariate analysis was conducted. Archival studies have also been conducted in order to provide sufficient evidence for the findings of the study.

Results and discussion

The results of the study can be divided into three major sections namely; background of the respondents, communication on the SRH related topics and issues related to communication on SRH related topics.

Background of the respondents

Demographic characteristics of a population are vital in understanding their behaviours and attitudes. A higher percentage of the respondents was Sinhalese, but there were minorities representing Tamil, Muslim, Malay and Burgher ethnic groups. Apart from the ethnic composition, similar percentages of the respondents were identified as Buddhists (39%) and Roman Catholics (34%). There were also other religious communities including Christian, Islam and Hindu. When considering the level of education, 43 percent of the respondents have passed the O/L examination. With regard to the mothers' employment status, 60 percent belonged in the category of non-economic activity - meaning that many of them are only engaged in household work. Among the adolescent children considered, the majority were females. These demographic, social and economic characteristics of the sample set the context and help understand the community.

Communication on the SRH related topics

In the communication of SRH related topics, as the primary step it was identified that both adolescent girls and boys have a strong relationship with their mothers. This led to the identification of whether the mothers have communicated any SRH related topics to their children. It was revealed that nearly 70 percent of the girls, and merely 14 percent of the boys have communicated on SRH related matters. It was further identified that the SRH related discussion of the girls are limited to mothers whereas SRH related discussions of the boys were carried out with both mother and father. This aspect is also further confirmed through the studies conducted in the African context where the gender of the adolescent plays a role in effective interaction (Motsomi, Makanjee, Basera, and Nyasulu, 2016). Moreover, it has been explained through a study conducted in Indonesia that girls tend to communicate with mothers more as mothers have also experienced the same pubertal changes (Nurachmah, et al., 2019).

It was identified that there is diversity in the SRH related discussions with girls while the topics discussed by the boys are limited. Even though the girls have only communicated with mothers, they have covered a number of topics ranging from reproductive organ growth and development (50.51%), to pregnancy (6.87%), abuse (15.81%) and relationships (26.8%), whereas the discussion with boys are limited to the topic of reproductive organ growth and development (Chane and Cherie, 2018).

Issues related to communication on SRH related topics

Issues related to the communication of SRH related topics are two-fold pertaining to mothers and adolescents. In the perspective of mothers, it was identified that mothers are also unwilling to discuss SRH related topics with their children. Even though, within the sample, the majority of the mothers were willing to communicate, this aspect could differ based on the cultural background based on ethnicity. Similar findings have been observed by a study conducted in US White, Black and Hispanic communities in which variations have been identified in relation to discussions on pregnancy, Sexually Transmitted Infections, and contraception (Lantos, et al., 2019).

On the other hand, mothers also face the issue of adolescents not cooperating or willing to continue an open discussion on SRH related topics. Within the sample, it was identified that more than three fourth of the adolescents are not willing to have an open discussion on topics related to SRH. It has also been observed in a study conducted in Kenya that SRH communication has most of the time been initiated by the parents in a one-sided manner (Maina, Ushie, and Kabiru, 2020). This is further confirmed by the adolescents as the majority of them have stated a medical officer (75%) as their most preferred source of obtaining SRH related information.

Moreover, it can be identified that mothers also face issues related to their knowledge and the approaches that they should take for an open discussion. The study revealed that mothers are also doubtful whether their daughters are aware of menstruation and that they are reluctant to be the first person to explain the process (40%). They were also doubtful of the knowledge that they possessed as it is based merely on their experiences (36%) and due to their backwardness (12%) inculcated due to cultural aspects, and the misconception that their children would misunderstand them (12%). This situation is further confirmed by a study conducted in Johannesburg, South Africa (2016) and a study conducted in Syria (2020). These studies identify the factors that disrupt the parent-adolescent communication. They include embarrassment when discussing sexual topics, strong belief amongst guardians that reproductive health discussions with adolescents encourages sexual experimentation, belief that adolescents are too young to understand, and the influence of cultural and religious beliefs.

"I have discussed a bit about menstruation. But mainly about not to get in to a relationship and focus on her studies. But, I have never spoken with my son in this regard. His father has spoken a bit about shaving and higyene. That's all. I an not comfort table in speaking these things with my children.

-47 year old mother with an adolescent daughter and son

In the context of issues faced by adolescents, it can be identified that the majority of them are embarrassed to talk about SRH related topics irrespective of being a girl or a boy. There were also concerns related to misunderstanding of the parents and their suspicions on the adequacy of their parents' knowledge. This has also been identified in a study conducted in Eastern Ethiopia (Dessie, Berhane, and Worku, 2015). This was evident through the negative responses provided by adolescents when questioned on their communication on private matters as well as on SRH.

It could also be identified that they were aware that they do not receive sufficient knowledge on SRH through the school curricula (65%). They were aware that they face issues being ignorant on topics such as abuses, sexuality. Especially girls have preferred to become more knowledgeable about menstruation.

"I am not comfortable in discussing these things with my mother. It is difficult to talk about relationships with parents because they always misunderstand and starts suspecting. That only going to limit my freedom. I am comfortable of talking about these things from the friends in school."

- *16 year-old adolescent girl*

The cultural barriers imposed on the generations have also made adolescents look for information through different sources. The study revealed that students would prefer teachers/ medical officers to educate them on the reproductive system and its development over the years. However, they would prefer to discuss topics such as relationships with their peers or the siblings.

Conclusion

The study identifies several issues pertaining to parent-adolescent communication on SRH related topics. However, parent-children communication on SRH is a mechanism that is utilized by many countries in the world special in the developing region with similar cultural backgrounds. Programme "Expression" initiated in India, Guria Adolescent Health Project carries out in Georgia, "Entre" Amigas conduct in Nicaragua and "Modern Senga" programme in Uganda were implemented with the aim of improving parent-adolescent communication and has had successful outcomes (World Health Organization, 2007).

It is necessary to focus on parents' need to be empowered with adequate and factual SRH information and effective communication strategies to enhance communication with adolescents. There is a need for further research to identify the most effective parent-child communication approaches to improve SRH outcomes among adolescents. Future research also lies in this aspect of identifying the cohort wise or the generational differences in perspectives on disseminating SRH knowledge to adolescents and the reasons behind such initiations. Results of such extensive research would enable supporting parent-children communication on SRH to be more successful.

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Factors affecting spacing fertility behaviour among the fishing community: A case study of the Chilaw Divisional Secretariat Division in Sri Lanka

V.P. N. Senadhi[1]

Introduction

Fertility behaviour depends on various dimensions such as ethnicity, religion, geographical area, level of education, usage of contraceptives, labour force participation, attitudes and cultural norms, etc. (Sliva, 2015). The Demographic and Health Survey 2016 recognized that identifying the trends and dimensions of fertility is an important factor when preparing a fertility policy for the wellbeing of the human being. Fertility dimensions directly affect fertility behaviour, and fertility behaviour is one of the main factors directly affecting changes in the overall fertility of a country (Kondel, 1987). Between 2005-2010, Sri Lanka reported low total fertility rates (TFR) among South Asian countries, but it gradually increased to 2.2 in 2016 (Sri Lanka Demographic and Health, 2016). Among the factors that affected the increase in fertility, fertility behaviour can be identified as one of the main factors. Kondel in 1987 noted that if a couple wants to limit their fertility, the successful method is spacing fertility.

This study analyzes the spacing fertility behaviour of a fishing community. Approximately 2.4 million people are directly and indirectly employed in the fishing sector (Export Development Board, 2017). Existing literature on the fishing community reveals that the fishing community has a different life cycle than other communities, especially based on their cultural norms, attitudes etc. In this context, the existing literature reveals two main findings with regard to their fertility behaviour. (i) The fishermen have lower fertility since they spend considerable lengths of time away on fishing trips. As a result of these frequent trips, fishermen have lower rates of coitus (Okraku, 2010). On the other hand, Carr (2007) shows that married women use some form of modern contraception to control their fertility. In addition, Teye (2013) mentions that a few educated men and women who suffer from economic difficulties prefer to have a smaller family size. (ii) The fishermen have high fertility due to high demand for family labour for fishing, cultural values, spousal influence on fertility, relations shape fertility preferences and women in fishing communities are home-centred and consider childbearing as their main career (Hakim, 2003). Existing literature shows contradictory findings regarding the fertility behaviour of the fishing community.

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Research objective

The main objective of the study is to identify the spacing fertility behaviour of a fishing community and what factors affect their spacing fertility behaviour.

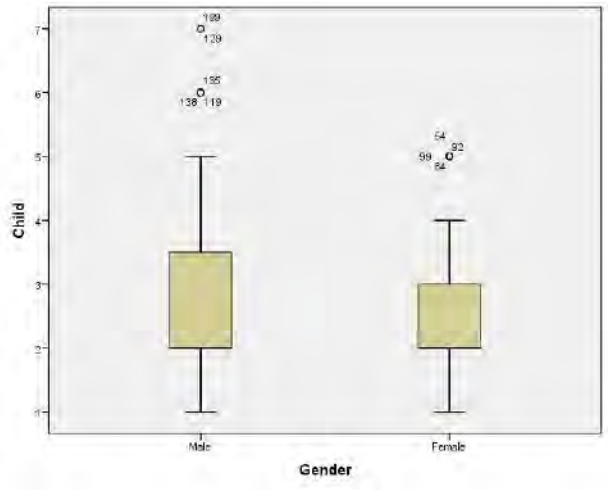
Methodology

The study is based on quantitative data collected from a survey conducted in Chilaw Divisional Secretariat (DS) in Puttalam district. The marine fisheries, Deep-sea and Coastal, contributed about 86 percent (456,990 Mt) to the total fish production of the country in 2016. There are 15 fisheries administrative districts and out of them, Chilaw district contributes a considerable proportion (7%) to the total marine fish production of the country. Quantitative data were collected from 100 women and the study considers the age of the women above 35 years old and who have already completed their fertility and all the women were sterilized women, they were selected using the purposive sampling method. Qualitative data were collected through case studies. In addition, the study utilized secondary data: (i) Department of Census and Statistics (2009/2016), (ii) Sri Lankan Fisheries Sector Report (2017). Quantitative data were analyzed using univariate and bivariate statistical methods. Qualitative data was analyzed using content analysis.

Results and discussion

In the findings, results can be categorized into four sections with regard to the spacing fertility behaviour. They are: (i) total number of children that women delivered in their reproductive age group, (ii) socio-economic, cultural, and other factors that affect the ideal number of children, (iii) the gap between all the parties, and (iv) the usage of contraceptive in spacing fertility behaviour. The research on the total number of children that women delivered before their stopping fertility identified that the mean number of children differ according to the women and their spouses. The women preferred 2.3 mean number of children but their spouse's preference was 2.8. Figure 1 expresses a clear picture of this scenario.

Figure 1: Total number of children that men and women prefer (Mean value)



Sources: Study of the Spacing fertility behaviour of the fishing community, 2018

The study also observed that regarding the "gender preferences of their babies", all the respondents responded as male or female, and it has been noted that the majority of women and their spouses would prefer to have a son (Table 1).

Table 1: Ideal number of children preferred by women and their spouse

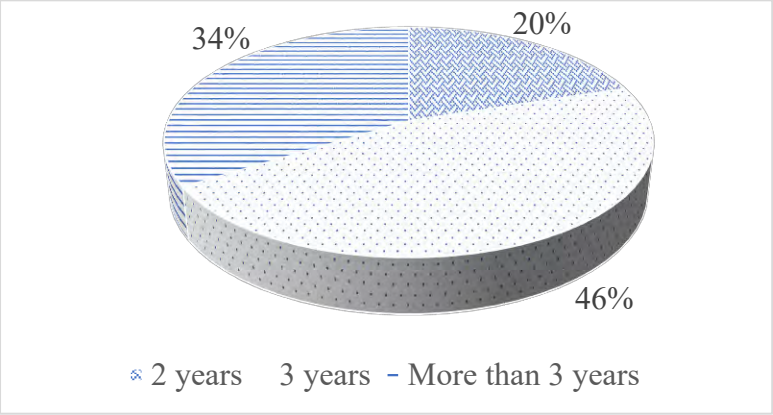
	Ideal number of children	Male Children (Respondents)	Female Children (Respondents)	Total Children (Respondents)
Women expectation	1	15	8	20
	2	40	8	48
	3	12	6	18
	4	3	5	8
	5	3	3	6
Women's spouse expectation	1	8	2	10
	2	36	5	41
	3	18	6	24
	4	10	6	16
	5	3	0	3
	6	2	2	4
	7	1	1	2

Sources: Sample survey, 2018

When the reasons for women's preference for sons were investigated, it was stated that, "Son is a future investment for the family". It should also be noted that there are five main reasons that affect the ideal number of children: (i) female labour force participation (20%), health issues of the women (21%), economic difficulties in the families (64%), women engaged in higher education (4%) and labour force participation of the spouse and a lower rate of coitus etc. (72%). The study highlighted the inter-relationship between the husband's employability and spacing fertility. The majority of women (72%) gave the answer that their husband's employment directly affects the total number of children. This is due to the reason that their husbands have to spend considerable lengths of time away for their fishing trips.

Another important point recognized is the gap between parity. Among the women, the majority (46%) preferred to keep the gap between the parity for more than 03 years. This is shown in Figure 2.

Figure 2. The gap between the parities by women



Sources: Sample survey, 2018

In order to keep the gap between the parity, 77 percent of the females have used both modern and traditional contraceptive methods. Among them, 37 women have used traditional contraceptive methods like the rhythm method (94%) and breastfeeding for extended periods (6%). 72 women have used modern contraceptive methods such as pills (38%). Norplant (29%), injectable (24%), male condoms (4%) and loop (5%).

The study highlighted that all of the women are Catholic and before they get married the Catholic Church provides consultation about satisfaction within the marriage, contraceptive methods etc. The study noted that among the women 23 percent don't use any contraceptive method because their spouse does not agree with using

contraceptives. Spouses objecting to the use of contraceptives has caused mental stress for some women. This is explained further in Case 01.

"We do not have our own house and we live in my mother-in-law's home. My husband goes for long fishing trips. My mother-in-law wants more children and she always asks me whether I use tablets as birth control. She motivates my husband to have more children. So he doesn't let me use contraceptive although I want to."

This case demonstrates that gender inequality and toxic masculinity/patriarchy in society leads to the violation of women's reproductive health rights.

Conclusion

This study identifies that the total number of expected children, socio-economic, cultural, and other factors affect the total number of children, gap between parity and the usages of contraceptive as the key factors that affect the spacing fertility behaviour of the fishing community. Within the community, the study identified differences in the ideal number of children between women and their spouses, with more men preferring to have more children than women. Women's education, the economic situation of the family etc. are directly connected to the ideal number of children. Regarding the gap between parity, females prefer to have more than a 3-years gap in the spacing behaviour. Usage of contraceptives are relatively higher in the community than in other fishing communities in the world. However, as a result of gender inequality and patriarchy, some women's sexual and reproductive health rights are violated. Therefore, the results suggest that appropriate mechanisms need to be established in order to strengthen the reproductive health rights of the women in this community.

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Human behavioral and psychological changes during quarantine curfew: A case study of COVID-19

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Introduction

Coronaviruses are a large family of viruses which may cause illness in animals or humans. In humans, several corona viruses are known to cause respiratory infections ranging from the common cold to more severe diseases such as Middle East Respiratory Syndrome (MERS) and Severe Acute Respiratory Syndrome (SARS). COVID-19 is the infectious disease caused by the most recently discovered coronavirus. An outbreak of pneumonia of unknown reason was first reported in Wuhan City of Hubei Province of China on 31st December 2019 (Epidemiology Center of Sri Lanka, 2020)[1]. It was diagnosed as "Novel Coronavirus" on 7th January 2020 (Epidemiology Center of Sri Lanka, 2020)[1]. World Health Organization (WHO) declared it as a Public Health Emergency of International Concern (PHEIC) on 30th January 2020. WHO renamed the disease as COVID-19 on 11th February 2020 and declared the world health crisis as a pandemic on 11th March 2020 since it affected many countries globally (Epidemiology Center of Sri Lanka, 2020).

Sri Lanka is also one of the COVID-19 affected countries. The first COVID-19 confirmed patient, a Chinese tourist was found on 27th January 2020. Then the second confirmed patient was identified on 11th March 2020. There are 49,242,837 confirmed cases of COVID-19 globally (Kelly, 2011) while there were 13,419 confirmed cases of COVID-19 in Sri Lanka by 8th November 2020 (Epidemiology Center of Sri Lanka, 2020)[1]

A pandemic can be defined as "an epidemic occurring worldwide or over a very wide area crossing international boundaries and usually affecting a large number of people" (World Health Organization, 2020). Pandemic situations create a wide platform that could change the humans physically as well as mentally. The whole world was shut down and day to day lifestyles were changed as humans are the vectors.

The way humans act and interact is different from each other and age specific behavioral changes are especially significant. This is influenced by several factors such as genetic make-up, culture, individual values and attitudes. Sometimes, the environment may also lead to behavioural changes.

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COVID-19 can be transmitted by people who are infected with the virus. The disease spreads primarily from person to person through small droplets from the nose or mouth, which are expelled when a person with COVID-19 coughs, sneezes, or speaks. Therefore, human behavior is very important in controlling this pandemic.

Behavior is a response to environmental stimuli (McLeod, 2020). Human health-related behavioral changes are important in a pandemic because the whole population is at risk. However, behavioral changes can be age specific (Harold and Karen , 1998). Moreover, the level of educational, health status and beliefs may change behaviors from one to another. The whole environment is changing in a pandemic and the environment correlates with psychological behaviors (Gregory J. et al, 2004).

Research objective

The objective of this study is to identify the human behavioral and psychological changes towards COVID-19. Changes will be identified through the normal behavioural changes, health behavioural changes and physiological changes.

Methodology

This is a primary study which is descriptive and cross-sectional in nature. The sample size was calculated using the OpenEpi sample size calculator with a confidence level of 95%. The estimated sample size was 246. Hence, 250 participants were selected using the convenience sampling method. Data was collected using an online questionnaire due to the social distance regulations during the period of 08th June 2020 to 14th June 2020. In order to identify the behavioural changes questions on food pattern, social relations, professional life, media usage, education, entertainment. Health behaviours were identified through questions on hygiene practices whereas the psychological impacts were identified through respondents' opinions. Data was analysed and organized using SPSS and Microsoft Excel.

Results and discussion

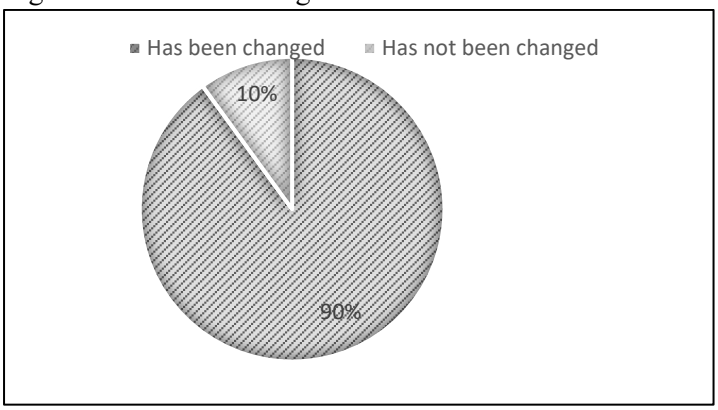
The results reveal the normal behavior changes, health behavior changes and psychological impacts towards COVID-19.

"Normal behavior" can be defined as any behavior which conforms to social norms, which is the expected or typical pattern of human behavior in any given society (McLeod, 2020). Day to day behavior was taken into consideration in this context.

The outcomes show that the quarantine curfew has affected the food patterns of the population. Everyone's main meal supplement has changed from restaurants to homemade. Voluntary usage of coriander and tree turmeric (Weniwalgata) has increased among all the participants. Three fourth (83%) have increased or started

this habit in order to have a healthy immune system. The noticeable fact is more than half of the youngsters have started to have herbal drinks due to their parents. The time of the main meal has not been changed in the quarantine time period for 90 percent of the participants (Figure 1). However, 10 percent mentioned that they would miss their breakfast as they would wake up late and this was identified especially among the population younger than 25 years.

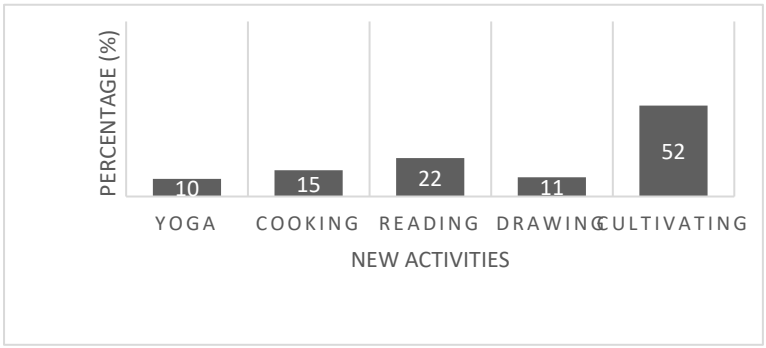
Figure 1: Times of having main meal



Source: Sample survey, 2020

Home garden cultivation was commenced by two thirds of the participants and they are able to consume the vegetables and fruits plucked from their own garden. When considering hobbies and entertainment activities, 53 percent of the participants have changed their outdoor activities to indoor activities, especially the young and young adults. Most of the participants have started new activities like yoga, cooking, reading, drawing and cultivating (Figure 2).

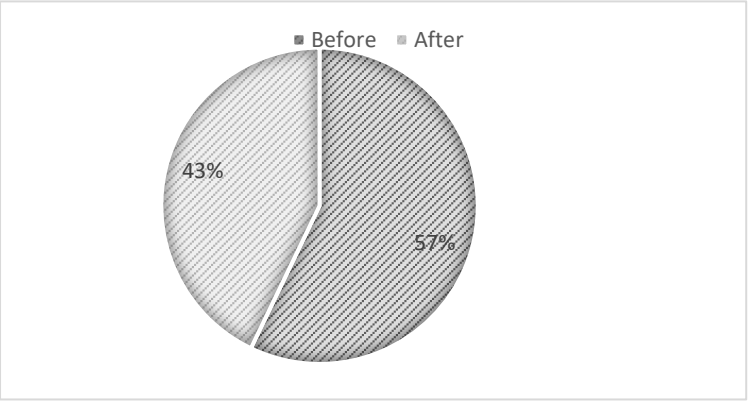
Figure 2: New activities during the quarantine period



Source: Sample survey, 2020

The graph shows that the participants have been involved more in home gardening and promotion of the activity through televisions and social media can be identified as the supporting reason. The results reveal that most of the participants have used television and appropriate official apps to obtain updates on COVID-19 rather than social media. Significantly, social media usage among elders has increased by 42 percent (Figure 3). This percentage reflects the elders who have not used social media before the quarantine curfew and who have started to use social media after the quarantine curfew was imposed.

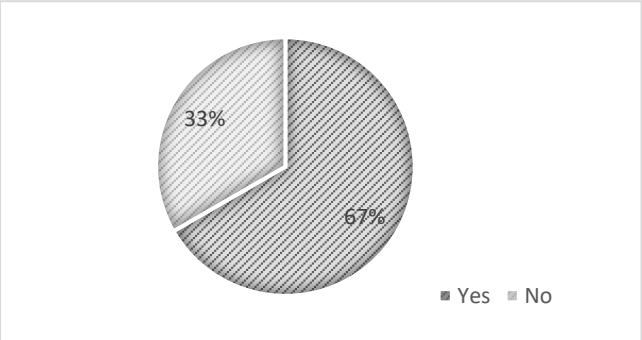
Figure 3: Percentage of the elders who use Social Media



Source: Sample survey, 2020

Professional life has also been converted to the "work from home" concept with the pandemic. Online working capacity has been increased among young adults and elders and with the use of new software. The private sector and educational institutes take a lead in this context. 33 percent were unable to work from home due to the working files having been left at offices.

Figure 4: Percentage of the elders who use Social Media



Source: Sample survey, 2020

Technology has been used for education more than ever before in this pandemic. 95 percent of the youngsters use distance learning platforms for educational purposes and 3 percent of them have started online courses. 15 percent of the young adults have started online courses for career development. Course fee and lack of awareness were limitations in following online courses. 30 percent of the elders are following entertainment platforms such as Youtube to learn sewing, cooking and home gardening.

Health behaviors have also changed in the pandemic. Health behavior is defined as the activity undertaken by people for the purpose of maintaining or enhancing their health, preventing health problems, or achieving a positive body image (Cockerham, 2012).

Hygienic practices which included washing hands, using hand sanitizer and using a mask have been adapted by all the participants. In addition, 80 percent of the participants have limited their physical contact with people, while 10 percent could not limit contact due to performing essential work (jobs). 2 percent of the youngsters have met their friends in quarantine periods. 90 percent have limited visits to religious places. Social gatherings and family reunions were cancelled by all the participants. Travelling or meetings have been limited by 80 percent of the participants. All these precautions have been taken to maintain health behaviors. When considering the behavioral changes, it proves that most of the changes have been done in a positive perspective.

Psychological changes could also be identified along with the normal and health behavior changes. Although the behavioral changes have been changed in a positive way, most of the participants have been psychologically affected because of fears of infection. While two-thirds (66.3%) of the participants were apprehensive of leaving their homes because of the coronavirus, comparatively more (79.8%) have felt fearful if a family member went outside. A large fraction of the participants (81%) feared visiting crowded places such as markets and departmental stores, and felt safer inside their homes (78%). It is concerning that the ongoing pandemic has made two-thirds (64.5%) of the participants feel anxious on a daily basis. Being locked down for months, avoiding social contact and being limited to indoor activities have become the reasons for anxiety.

Conclusion

Humans are an adaptive species and they can change their behaviors according to the changes of the environment. COVID-19 has become a pandemic and most of the people have changed their behavior along with its emergence. People have changed their behavior to survive in the pandemic and sometimes it may lead to changes in

psychological conditions. This study will help to carry out further research by comparing post behavioral changes and the information can be used to shape the interaction with the community in the planning stage. Psychological changes with landscape can be studied further to understand environment oriented psychological behaviors.

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The old-age income profile of the elderly in Sri Lanka

R.L.C. Shyama[1] and T. de Silva[2]

Introduction

Population ageing, which is the increase in the proportion of "elderly people", is an inevitable result of the demographic transition. Sri Lanka has one of the fastest ageing populations in the developing world which is increasing at the fastest rate in South Asia (Tilakaratna, 2018; Siddhisena, 2004). For the elderly, income security is a major concern and it is essential to find secure and appropriate ways to fund their retirement. Elderly have several income sources including family support, government welfare, public pensions, employment, and accrued savings/wealth, etc.

Family support (mainly children) has historically been the main source of old-age support. With the expectation of traditional family support systems weakening and inadequate savings, the role of formal old age income support programs and pensions will become crucial for ensuring the wellbeing of the elderly. However, Sri Lanka still lacks social security coverage and the pension schemes are led by a public-funded pension scheme, which is expensive despite low coverage (Helpage International, 2008). In order to design systems to protect the wellbeing of the elderly that are also economically sustainable, the extent of the problem needs to be understood from the viewpoint of both the elderly and the economy as a whole starting with an understanding of the current income profile of the elderly.

Several studies are focusing on different aspects of old-age income security. Tilakaratna (2018), Senanayake and Kumara (2012) use national survey data to examine the labor force involvement of the elderly, while Perera (2017) uses data from the 2012 Census of Population and Housing to analyse employment status, living arrangements and demographic characteristics of the elderly population. These studies generally focus on a single aspect of old-age income support.

Literature indicates that there is limited number of research that studies the relative importance of the different income support sources together to provide an income profile of the elderly.

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Research objective

The objective of this study is to analyse the income profile of the elderly in Sri Lanka. This is important for quantifying the macroeconomic implications of population ageing and formulating effective policy responses.

Methodology

In order to examine income patterns of the elderly, this study analyses data from the Household Income and Expenditure Survey 2016 collected by the Department of Census and Statistics. For this study, the population aged 60 years and over is considered as elderly, since the mandatory retirement age of the public and private sectors lies between ages 55 and 60 respectively, with the possibility of an extension of up to 5 years (Siddhisena, 2004). The primary unit of analysis in this study is the individual.

Income profile of the elders was based on six income sources: paid employment, agricultural activities, non-agricultural activities (mining, manufacturing, construction, trade, etc.), cash transfers (pension payments, disability payments, Samurdhi, elderly payments, remittances, dividends, rents, etc.), income in-kind (i.e. the value of free food or non-food items) and other income (loans taken, withdrawals of savings, etc.). Individuals are categorized into income quintiles based on per capita household income. In order to measure the contribution to household income by the elderly, we calculate the ratio of the individual income of an elderly individual to household income earned per working age (15 and above) household members.

This analysis is mostly descriptive, making use of univariate and multivariate statistical techniques. A linear regression model was used to find out the factors associated with the income contribution of the elderly who are living with children. The statistical software STATA was used to analyse data.

Results and discussion

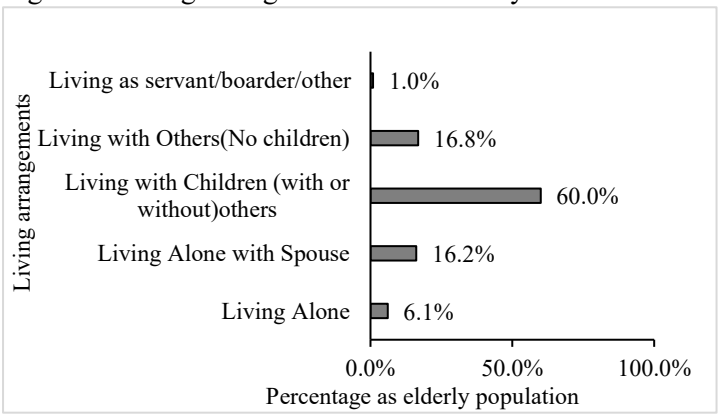
Overview of the ageing population

The elderly (aged 60 and above) account for 15.5 percent of the total population. Out of the elderly population, the majority (60.8%) are aged 60-70 (referred to hereafter as young-old) while the rest are aged 70 and above (hereafter referred to as old-old). The majority (55%) of the elderly are female. Nearly half of the elderly population (50.17%) have received education between primary and under-secondary education while approximately 30 percent of the elders have received below primary education level.

More than one-third (34.82%) of the elderly report being unable to work and nearly 11 percent are retired. A considerable share of elders (29%) are/ were still employed.

This was mostly due to the young-old who account for 81 percent of employed elders. Majority (60%) of the elders live with their children while the share of the elderly who live alone with spouse or others without their children is nearly equal at 16 percent each. Close to 6 percent of the elderly live alone.

Figure 1: Living arrangements of the elderly

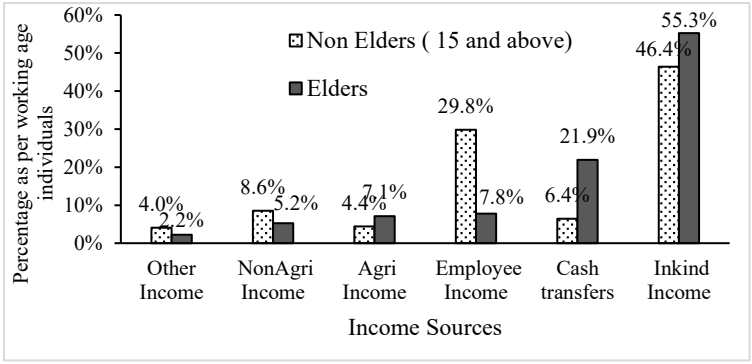


Source: Household and Income and Expenditure Survey, 2016

Analysis of Income

The average monthly income of an elderly individual is Rs. 16,296, with a higher monthly average for males (Rs.23,942) than for females (Rs.10,153). Among the six main income sources, more than half of the income (55.3%) was earned as income in-kind while 21 percent of the income was earned from cash transfers (Figure 2). Even though more than one-fourth of the elders were employed, the share of income received from employment is comparatively low. Among the total in-kind income received, nearly three fourths (73.96%) of the income was received as non-food items.

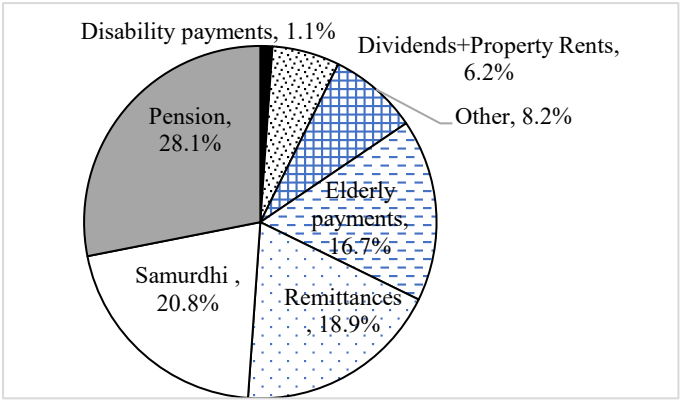
Figure 2: Distribution of the total income of the elders over income sources



Source: Household and Income and Expenditure Survey, 2016

Figure 3 shows that more than one-fourth of the income from cash transfers was from pension payments while the share of income from Samurdhi is 21 percent and the share of income from remittances is 19 percent.

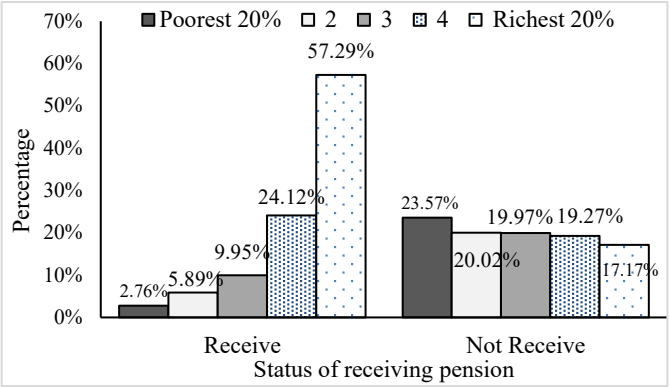
Figure 3: Distribution of the total income from cash transfers



Source: Household and Income and Expenditure Survey, 2016

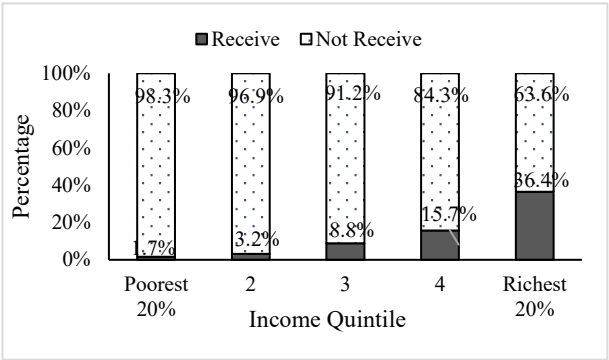
Despite the significant contribution of pensions, only 12.5 percent of elders report receiving pension benefits. The majority (53.4%) of the recipients are young-old. Among the elderly pension receivers, the majority (57.3%) are rich (Figure 4) while among the group of poorest elders, only a very small share (1.7%) received pension benefits (Figure 5).

Figure 4: Distribution of income groups over the status of receiving pensions



Source: Household and Income and Expenditure Survey, 2016

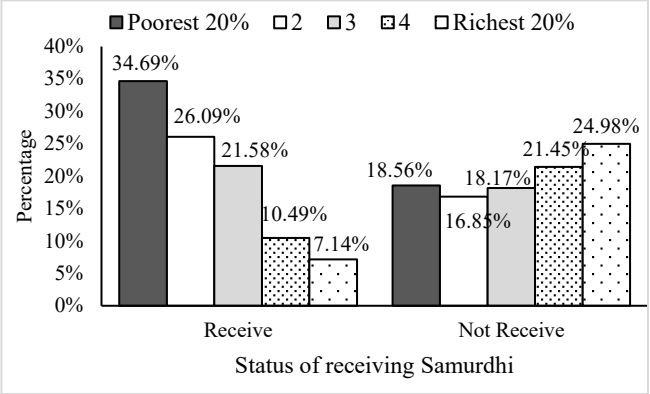
Figure 5: Distribution of status of receiving pensions over income groups



Source: Household and Income and Expenditure Survey, 2016

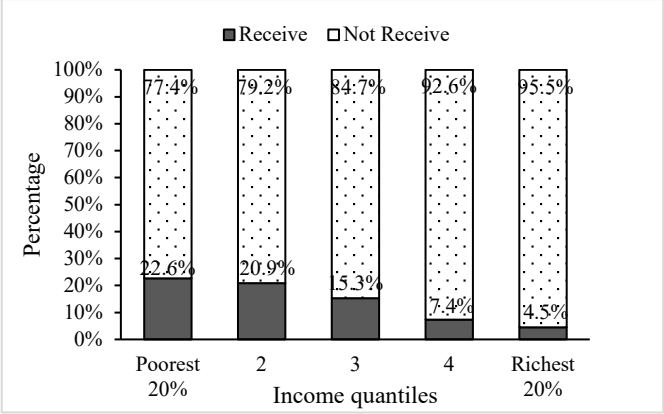
In contrast, the income from Samurdhi payments seems beneficial to the poor. 11.2 percent of the elderly population report receiving Samurdhi payments and with more than 60 percent of the recipients from the two lowest income quintiles (Figure 6). However, more than 75 percent of the poor elders haven't received Samurdhi benefits while close to 5 percent of the rich elders do (Figure 7).

Figure 6: Distribution of income groups over the status of receiving Samurdhi



Source: Household and Income and Expenditure Survey, 2016

Figure 7: Distribution of status of receiving Samurdhi over income groups



Source: Household and Income and Expenditure Survey, 2016

While employment income is the 3rd largest income category of the elderly, it is larger than any of the individual components of cash transfer income. More than one-fourth of the elderly report being employed. Surprisingly, the elderly who are in the richest income group are more likely to be working than those from poorer households.

Income contribution of the elderly co-habiting with children

Given that the majority of the elders live with their children, assessing the financial contribution made by them to their families is important in order to understand the extent to which the elderly rely on their children for support.

The average income contribution ratio of an elderly individual living with his/her children is roughly 75 percent of household income per working-age member which

suggests that the average elderly individual cohabiting with children is a net dependent in the household. The majority of the elderly living with their children (57.21%) contribute less than half of the average income of the household while 28 percent of the elders contributed more than the average income to their families.

Linear regression model has been used to examine the factors influencing the contribution to household income among the elderly living with their children (Table 1).

Table 1: Determinants of contribution to household income

	Number of obs	7,581
	R-squared	0.4547
Income Contribution Ratio	Coefficient	Std.Err
Age	- 0.002**	0.001
Household members	-0.04 **	0.01
Income Group (Base: 1- Poorest 20%)		
2	-0.15**	0.02
3	-0.20**	0.02
4	-0.26**	0.03
5 - Richest 20%	-0.34**	0.03
Sector (Base: Urban)		
Rural	-0.07 **	0.02
Estate	-0.24 **	0.04
Sex (Base: Male)		
Female	-0.32 **	0.01
Education (Base: Below Primary)		
Below secondary	0.04 **	0.02
Passed O/L	0.09 **	0.03
Passed A/L	0.17 **	0.04
Degree and above	0.36 **	0.07
Employment Status		
Unemployed	-0.87 **	0.02
Pension Status		
Not Receive	-0.78 **	0.03
Samurdhi Status		
Not Receive	-0.13 **	0.02
Remittance Status		
Not Receive	-0.60 **	0.04

Significance levels: *-10%, **-5%, ***-1%

All of the characteristics included in the model are significantly associated with the income contribution ratio of the elderly at the 5% level.

For instance, when all other factors remain unchanged, the income contribution ratio decreases by 0.04 with each addition to household size, indicating that in larger households, the contribution of the elderly tends to be lower. Females contribute 0.32 less than male elders, while more educated elders have higher contributions than less educated elders.

Interestingly, the contribution of elders in richer households is significantly smaller than the contribution of elders in the poorest households. This could either be explained by the fact that since per capita income is low in poorer households, even a small income counts as a significant contribution or that since poorer households have fewer resources, the elderly are forced to contribute more financially.

As it is expected, the contribution of elderly who are working or are recipients of pensions, Samurdhi or remittances also tend to be larger on average. Employment has the largest effect, increasing the contribution by 0.87, followed by pensions which increases the contribution by 0.78.

Conclusion

Given the rapid increase in population ageing and the elderly dependency rates, having an understanding of the current status of old-age income support systems is vital. This research aims to construct an income profile for the elderly in Sri Lanka.

We find that the key sources of income for the elderly are income in-kind, employment, and income from pensions, Samurdhi, and remittances, while a large majority of elders are also financially dependent on their children. Income from savings, dividends, and rent is negligible. Moreover, the pensions receivers are mainly from richer households, while a significant share of the poor does not receive Samurdhi payments. In addition, it is the richer elders who continue to work.

With increasing longevity, it is vital that measures be taken to address the formal income sources of the elderly as income flows from accrued assets are small. Expanding the pension coverage, Samurdhi benefits, and providing formal employment opportunities for the elderly will reduce the dependency burden of the elderly on society as well as on the economy.

In future work, it is expected to study historical trends in these income-support sources to examine how the composition of the old-age income profile might change in the years to come. The findings from this analysis will be used to study the economic impact of population ageing and recommend the most effective means of mitigating the adverse impacts of population ageing.

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Prevalence of menopausal symptoms: Issues and challenges faced by the post-menopausal women live in urban underserved settlements, Colombo

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Introduction

Menopause is a normal biological process, defined as the permanent cessation of menstrual cycle due to the cessation of ovarian follicular function. According to medical professionals who specialize in community medicine, the average age at menopause in Sri Lanka is around fifty one (51) years. Therefore, a woman has to live more than two decades with menopause. The women who entered to the menopausal period experience menopausal symptoms both physically and psychologically due to the fluctuations in the hormones estrogen and progesterone. Research shows that all the women who entered to the menopausal period do not experience menopausal symptoms and women who experienced menopausal symptoms have experienced it in different extent. Menopausal symptoms and their severity vary from person to person due to the effects of various factors such as lifestyle, social status, body composition, and psychological status (Sharma and Mahajan, 2015).The symptoms may last years after the post-menopausal phase of women and it is evident that the some women suffer from these unpleasant symptoms around seven years after the cessation of their menstruation (Gisolf, 2009). Post-menopausal stage requires, for some women, to make much adjustments to a different way of life. According to existing literature, the drop in the estrogen and progesterone levels with the menopause produce two types of effects on women's health, namely short-term and long-term effects. Short-term health related effects and symptoms include, hot flushes, irritability, depression, and mood swings while the long-term effects include Alzheimer's disease, lower-back ache, cardiovascular problems, joint pains, brittle bones and osteoporosis (Cook and Green 1980; Matthews 1990). Prevalence of menopausal symptoms among the women vary country to country. However, menopausal symptoms and its related health issues have been found to be less common in societies where menopause is viewed as a positive rather than negative phenomenon (Yangin, Kukulu and Sözer, 2010). Most of the women who live in developed countries reported menopausal symptoms included hot flushes, sleeping disturbances and night sweats (Greenland and Gold, 2005). On the other hand, headache, fatigue, joint and muscular discomfort were the frequent symptoms that the women who live in developing countries experienced during their menopausal period (Kothiyal and Sharma, 2017). However, menopausal symptoms negatively affects

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the overall health of women in their later life and the research evidence is that there is an impact on the quality of life of the post-menopausal women as studies have found a significant relationship between menopausal symptoms and the lower quality of life (Williams et.al, 1993: Seker and Karakam, 2007).

Research objectives

The main objective of this paper is to study the prevalence of menopausal symptoms among the post-menopausal women. The specific objective is to examine the issues and challenges they faced due to the experience of menopausal symptoms.

Methodology

The study uses both quantitative and qualitative data which were gathered through questionnaires and case studies respectively. Four hundred women who were aged fifty and above, and had experienced one year or more without menstruation or periods were selected for the study. Respondents were selected from age groups, 50-54, 55-59 and 60-64 by using simple random sampling method. Study area was urban settlements located in the Colombo Central, Borella, Colombo North and Colombo East-West zones in the Colombo District. From the sample, fifteen women were selected for the case study. Quantitative and qualitative data were analyzed by using descriptive and content analysis respectively.

Results and discussion

The mean age of the respondents was 56.8 years and the sample includes post-menopausal women who were at the ages of 50-64 years. When considering their marital status 57.5 percent of the respondent were married while 2.8 percent of the respondents were never married. The mean age at menopause was 49 years. Due to the poor social and economic background the women in the sample were had low education levels. Majority of them have completed grade 6-8 (29.3%) and there were 28.8 percent of women who have completed their primary school education. More than three quarter of the respondents were economically inactive and were involved with household duties (75%). There were only 23.5 percent of women who were currently employed. Though the majority of them had engaged in economic activities in the informal sector prior to menopause, none of the respondent women were involved in any type of economic activity during the post-menopausal age due to health problems. According to the BMI index calculated, it was evident that majority of women belong to the overweight (25<30) and obese (BMI>30) category.

The symptoms that they experienced can be divided into four categories: physical symptoms, psychological symptoms, urogenital problems and sexual function effects.

All the respondents have reported more than one menopausal symptoms they have experienced during their menopausal stage and all together there were more than twenty symptoms which they have reported. The women also mentioned that although they started to experience these symptoms when they were in peri-menopausal stage, they repeatedly faced the impact of some of the symptoms in their post-menopausal stage. Therefore it can be realized that the menopausal symptoms could affect their aging life as these symptoms will remain with fluctuations in the later life of women. When considering the physical symptoms that the women faced during their menopausal stage, more than 5 percent of the respondents suffered from hot flashes, palpitation, pressure and tiredness in head and body, breast pain and imbalanced of the nervous system. According to literature, hot flashes are the most common symptom that the women experience after their irregular periods. The respondents (3.9%) had hot flashes while they were sleeping and it caused disturbances throughout the sleeping time. Literature emphasize that hot flushes is the one of most common symptoms that women experience badly during their menopausal period. Women who experience hot flushes during their menopausal period expressed that they had hot flushes repeatedly – as it lasted a few minutes but again begun after few minutes.

"Its' like fire on my head. It starts from my feet then legs and suddenly it runs over my body. When it runs I feel I am burning. I didn't know how to manage myself within such an uncomfortable situation".

A woman age at 64 year

Dizziness (11.3%) and night sweats (8.5%) were the other physical symptoms the respondents were suffered. Under the psychological symptoms, majority of the respondents experienced forgetfulness (7.1%). The women who reported anxiety as one of the symptoms that they faced, mentioned that they became panicked and worried about the things happening around them and always felt tensed. Frequent urination (4.8%), inability to hold urine (2.3%) and urine leakage during laugh and caugh (2.4%) were the common problems faced by the women. Vaginal dryness (4.1%) is common symptom that the women face their post-menopausal stage and these changes cause discomfort during intercourse. Therefore, the women reported loss of sexual libido (8.2%) during peri and post-menopausal stage.

Although the respondents experienced more than one menopausal symptoms throughout the menopausal stages, only 36 percent (*n=158*) of the post-menopausal women were taking treatment for menopausal symptoms. According to the medical professionals, if a woman suffer from menopausal symptoms for long period it is essential to take possible treatment as it will negatively impact on the quality of life of the menopausal women. Hormone Replacement Therapy (HRT) can be identified

as the most effective treatment for the women who have moderate to severe symptoms of menopause. Also it is considered as the best treatment for hot flashes, virginal dryness and mood swings. There were only three post-menopausal women who had taken HRT as a treatment for menopausal symptoms. All the other women replied that they were never heard about HRT before.

Conclusion

Due to their low level of educational background and insufficient awareness regarding menopause, -post-menopausal women who live in the urban underserved settlements areas have been experiencing menopausal symptoms for many years. The most common menopausal symptoms were dizziness, night sweats and forgetfulness. The majority of women were not aware of the treatment for menopausal symptoms. In order to upgrade the quality of life among the post-menopausal women, it is essential to conduct awareness programmes on possible treatment for the each menopausal symptoms and create a proper mechanism to increase the availability of the treatment and other resources in order to improve the quality of life of the women in their later life.

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Sex differentials in adult life expectancy and mortality in Sri Lanka

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Introduction

Sex differentials in adult life expectancy is a pervasive phenomenon. "At the global level, women live longer than men on average. A female survival advantage exists in virtually all regions and countries" (United Nations,2019). "However, expectation of life at birth was even higher for females than for males" (Keyfitz and Flieger, 1971). "Since the first life tables were constructed in the mid-18th century it is a well-established fact that women, on average, live longer than men" (Luy, 2003). "While the gender-gap, defined as female excess life expectancy, was first observed in the now developed countries, in the 21st century it is basically a universal phenomenon. Women are now on top everywhere" (Barford et al., 2006). In consideration of global context, it can be highlighted 4.2 years of gender gap in life expectancy, with men have experienced average life expectancy of 68, while women have experienced average life expectancy of 72.2. Meanwhile, in the more developed countries, there is 6.2 years of gender gap in average life expectancy (United Nations, 2019). When considering the Sri Lankan context, in the 1920-22 period life expectancy was higher among males than females. Men have experienced over 2 years of life expectancy compared to women during that time period. After that period, the pattern has reversed. The life expectancy of females is higher than the life expectancy of males with a gap of about 7 years in the 2011-2013 period. However, the gap has reduced by 1.8 years between 2000-2002 to 2011-2013 (Department of Census and Statistics, 2013). Sri Lanka had higher male than female life expectancy until about 1960. But more recently this has been reversed (Langford and Storey,1993). During the 1960s, however, the sex differential in overall mortality in Sri Lanka began to shift away from a pattern of higher female than male mortality. Equality in the overall level of mortality for the two sexes was observed in the early 1960s. Since then, the sex differential has favored females and has continued to widen (Nadarajah,1983). When considering the above factors and data, sex differentials in life expectancy can be seen worldwide. This is a global phenomenon. Hence it is important to emphasize sex differentials in adult life expectancy and mortality in Sri Lanka.

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Research objectives

The main objective of the study is to identify sex differentials in adult life expectancy and mortality in Sri Lanka. Further, the study explores effect of age and sex specific mortality rates to the changing gender differences in life expectancy.

Methodology

The study is based on secondary data. Data related to mortality and life expectancy were obtained from the Department of Census and Statistics in Sri Lanka. More data were obtained from the Registrar General Department in Sri Lanka, World Bank database, United Nations database and various online and offline secondary sources. The sex difference was analysed by decomposition method, containing age sex specific decomposition.

Result and discussion

Changes in levels of mortality by age and sex can be identified as a major effect on changes in life expectancy. "According to the history of life expectancy in Sri Lanka, it has gradually increased from 32.7 to 72.0 years for males and from 30.7 to 78.6 years for females from the period of 1920-1922 to 2011-2013" (Department of Census and Statistics, 2011).

According to Table 1, up to 1952, males have experienced higher life expectancy than females. But after 1952, the pattern has changed and females have experienced higher life expectancy than males. Table 1 revealed that a significant gap can be seen between life expectancy at birth among females and males. In 2000-2002, the gap was 8.4 years and when it comes to 2011-13 the gap has reduced to 6.6 years.

Table 1: Life expectancy at birth, Sri Lanka by sex, 1921-2012

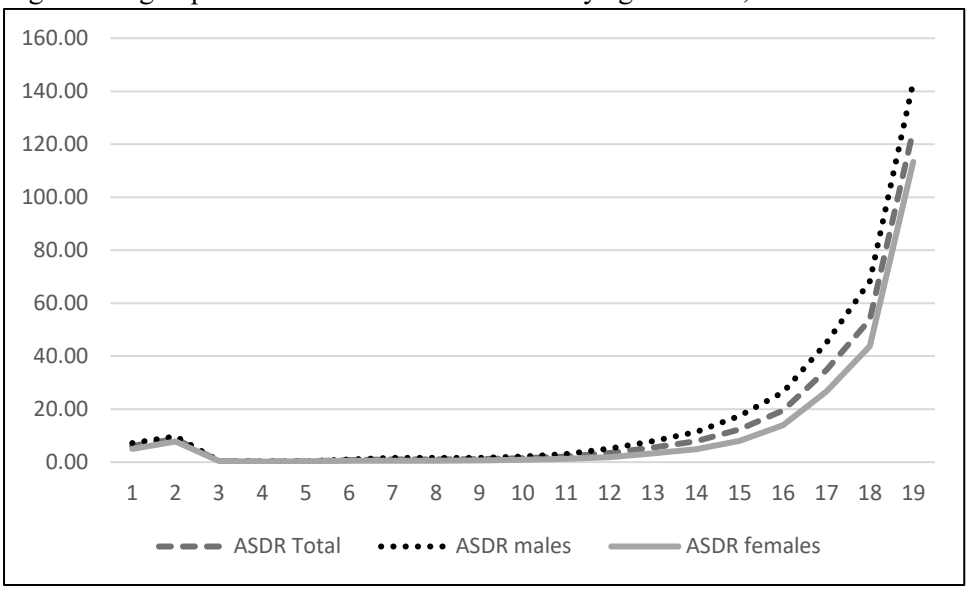
Year	Male	Female	Average increase in years per annum		Difference Male-Female
			Male	Female	
1920-1922	32.7	30.7			-2.0
1945-1947	46.8	44.7	0.6	0.6	-2.1
1952	57.6	55.5	1.8	1.8	-2.1
1962-1964	63.3	63.7	0.5	0.7	0.4
1970-1972	64.0	66.9	0.1	0.4	2.9
1980-1982	67.7	72.1	0.4	0.5	4.4
2000-2002	68.8	77.2	0.1	0.3	8.4
2011-2013*	72.0	78.6	0.3	0.1	6.6

Source: Department of Census and Statistics (DCS)

*Number of deaths used for this period corresponds to usual residence

Figure 1 clearly depicts Age Specific Death Rate was higher among male adults than female adults. The gap indicates a significant increase in Age Specific Death Rate in adult males. Female Age Specific Death Rate in Sri Lanka, indicates an increasing trend, but always at a lower level than male Age Specific Death Rate in Sri Lanka. For instance, 11.37 (per 1000 person) death rate can be seen in the 55-59 male age group while 4.90 (per 1000 person) death rate can be seen in the 55-59 female age group. Male age-specific death rates are generally higher than female rates (Nadarajah, 1983). Since the largest reversals in sex mortality differentials in Sri Lanka have occurred in the age range 15-44 years, it is likely that progress made in reducing the maternal death rate has been an important factor in the transition (Nadarajah, 1983).

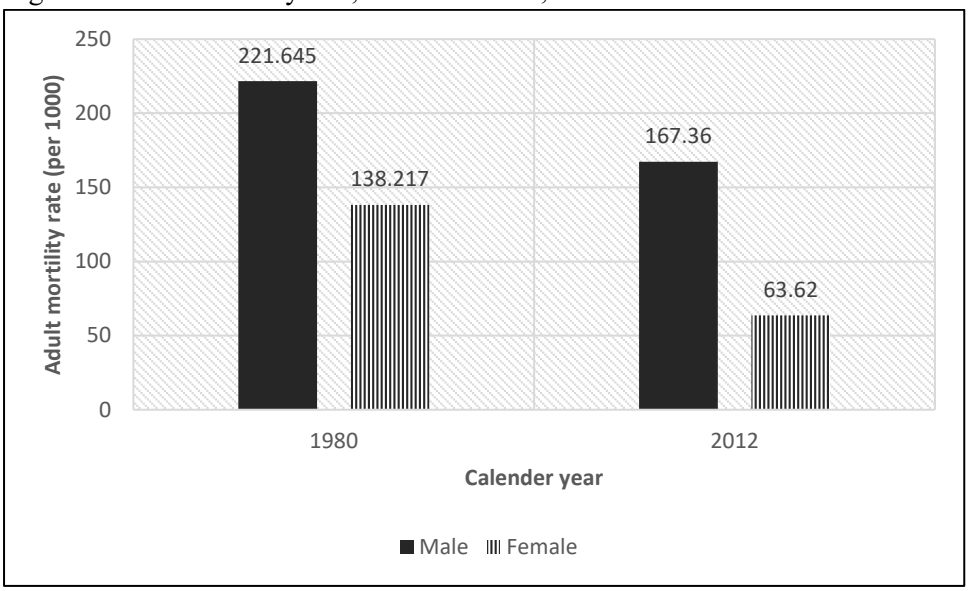
Figure 1: Age Specific Death Rate in Sri Lanka by age and sex, 2012.



Source: Department of Census and Statistics,2012

“Adult mortality rate in males is the probability of dying between the ages of 15 and 60; that is, the probability of a 15-year-old male dying before reaching age 60, if subject to age-specific mortality rates of the specified year between those ages" (World Bank,2018). As shown in Figure 2, Mortality rate of male adults (per 1,000 male adults) in Sri Lanka was reported at 221 in 1980 and 167 in 2012. When compared with the 1980 and 2012 data, a significant decrease can be seen in both male and female adult mortality rates. Although 83 more male adults have died in 1980 than female adults, when it comes to 2012, 104 more male adults have died than female adults. A tentative conclusion can be drawn by looking at Figure 02 that the male adult mortality rate has increased over time.

Figure 2: Adult mortality rate, 1980 and 2012, Sri Lanka



Source: World Bank Data, 1982 and 2012

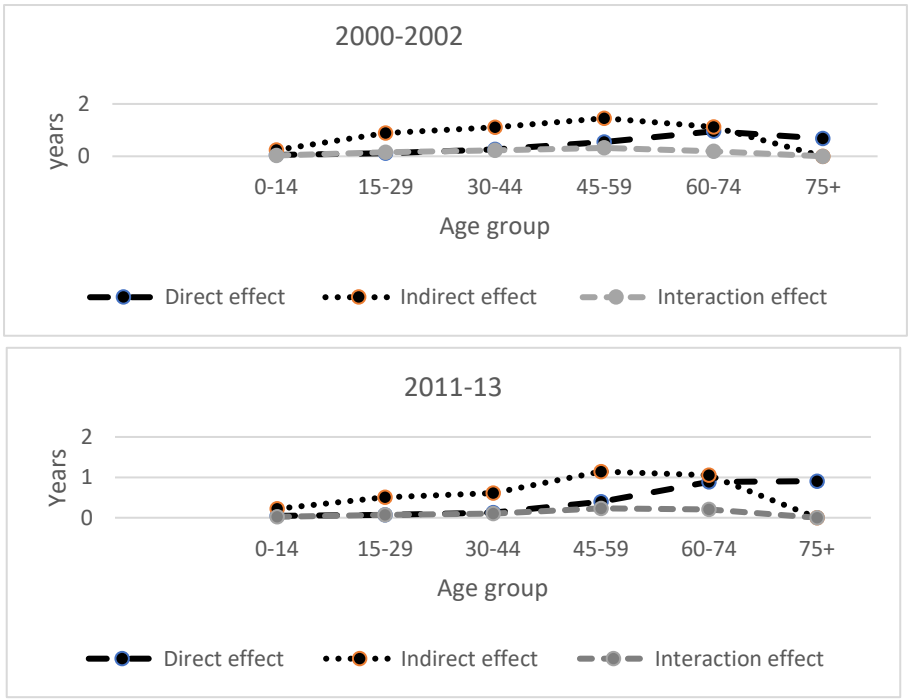
It can be decomposed the gap between male female life expectancy by their ages. There are three methods can be identified in decomposition method such as direct indirect and interaction.

According to Table 1 differential mortality by sex translates into 8.4 years of higher life expectancy for women compared to men in 2000-02 and 6.6 years of higher life expectancy for women compared to men in 2011-13. When considering the decomposition effect of the differential mortality by sex according to according to Figure 3, 2.604 of years impact on contribution of sex differentials of mortality through direct effect can be seen in 2000-2002. 4.805 years have been contributed indirectly and 0.919 years have been contributed through interaction effect in 2000-02 life expectancies. A high proportion of years have been contributed through indirect effect.

When it comes to 2011-13 the difference between male and female life expectancy is 6.6 and a high proportion of years have been contributed through indirect effect at 3.531 years. According to Figure 4 when compared with the 2000-02 and 2011-13 life expectancies 45-59 age group has contributed a high proportion (2.315 years) of years in 2000-02 for the overall effect and 60-74 age group has contributed the highest proportion (2.148 years) of years for the overall effect in 2011-13. The data above indicates the age groups which contribute highest proportion of sex differential in mortality and life expectancy in Sri Lanka. Eventually, the important factor is that the

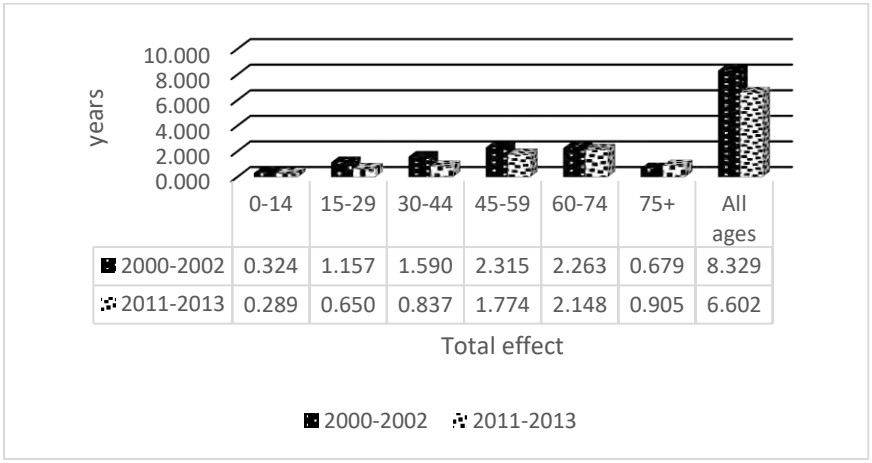
adult age group contributes a high proportion in the gap between life expectancy and mortality in males and females.

Figure 3: Exclusive age contribution of Sex Differentials of Mortality, 2000-02 and 2011-13.



Source: Author illustrations using data from Department of Census and Statistics

Figure 4: Contribution of Sex Differentials of Mortality at Each Age to the Total Sex Differentials in Life Expectancy at Birth, 2000-02 and 2011-13.



	0-14	15-29	30-44	45-59	60-74	75+	All ages
2000-2002	0.324	1.157	1.590	2.315	2.263	0.679	8.329
2011-2013	0.289	0.650	0.837	1.774	2.148	0.905	6.602

Source: Author illustrations using data from Department of Census and Statistics.

Conclusion

It was evident that adult females are experiencing higher life expectancy and mortality rates than adult males. When considering the decomposition method, a higher difference in life expectancy can be seen between adult females and females. In conclusion, it is speculated that public health efforts reduce mortalities among both adult males and females, especially male adults in Sri Lanka. Hence policy makers need to pay attention to health, social and education status among adult males, and need to implement policies to improve men's health.

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Gender wage gap in the urban labor market of Pakistan

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Introduction

The gender wage inequality is a common persistent feature of labor market in developing countries. The overall or unadjusted gender wage gap is a simple difference in the mean wages of male and female workers. It is not accounted for the differences in age, years of experience, education level, occupation, and sector of employment. Previous studies compared the adjusted gender wage gap or gender wage gap attributable to the gendered differences in socio-economic and demographic characteristics of workers. Age and education remain some of the leading determinants of the gender wage gap. Age is used as a proxy of labor market experience (especially when the data on years of experience is not available). Likewise, higher educational attainment improves human capital and thereby increases the productivity of labor (Sabir and Aftab, 2007).

The differentials in occupational choice significantly contribute to the gender wage gap. Females are generally restricted to particular occupations (piecework) in the informal sector of the economy (Horrace and Oaxaca, 2001). Wages of both males and females are higher in the urban areas due to a wage premium (Siddiqui and Siddiqui, 1998; Glaeser and Mare, 2001). Literature suggests that Bangladesh has huge gender wage gaps in the urban job markets in 2010 (Ahmed and Maitra, 2010), while Pakistan has a higher gender wage gap in rural labor markets in the early 1990s (Ashraf and Ashraf, 1993). In most cases, the discrimination effect attributed more to a gender compared to the productivity effect.

Moreover, gender wage discriminations are lower in public enterprises than private ones. Public sectors ensure labor rights more than private enterprises (Hyder and Reilly, 2005). The metropolitan status also affects the wage gap. Some studies found that municipal workers' wages are higher than their non-metropolitan counterparts due to differences in the standards of living and experiences (Kim, 2004).

According to the Human Development Report (HDR-2019), Pakistan ranks on 152 in the list of 189 countries. Pakistan's Gender Development Index (GDI) is the lowest (0.75) when compared with Bangladesh (0.90), India (0.83), and the whole South

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Asian region (0.83). The gender-disaggregated HDI is lower due to considerable gendered differences in the decent standard of living and access to knowledge.

Research objectives

In Pakistan, the previous research has focused on analyzing the gender wage gap at the national level, and that is also without using a complex sampling design of the survey. This study fills the gap in two ways. First, it analyzes gender disaggregate statistics on wages and occupations across small and large urban centers. Second, it uses the gender inequality measurement techniques, i.e., Blinder Oaxaca Decomposition, to compute the gender wage gap and compare it for small and large urban centers. The study used a complex sample design of the nationally-representative survey— Labor Force Survey, 2014–15.

Methodology

For the descriptive analysis and econometric estimations, the study employed the nationally representative data set of Labor market in Pakistan, Labor Force Survey, 2014–15 The data set provides information for a large urban centers which have a separate stratum. The remaining urban areas were considered as small urban centers[1].

Blinder–Oaxaca Decomposition

This study followed Jann (2008)[2] to decompose the wage gap by gender in the large and small urban centers of Pakistan. The gender wage gap is the mean difference in the wages of male and female workers.

The following is the econometric specification of Blinder–Oaxaca decomposition,

$$\bar{W}_m - \bar{W}_f = (\bar{X}_m - \bar{X}_f)\hat{\beta}_m + (\hat{\beta}_m - \hat{\beta}_f)\bar{X}_f \qquad (4)$$

$(\bar{X}_m - \bar{X}_f)\hat{\beta}_m$ is the differentials in gender characteristics, called as explained wage gap, $(\hat{\beta}_m - \hat{\beta}_f)\bar{X}_f$ is the unexplained differentials in gender-related characteristics. The unexplained component is referred as the discrimination effect, which includes unobserved characteristics as well.

Results and discussion

The gender wage differentials in the large urban centers are presented in Table 1. The wages in the large urban centers were 17 percent higher than the small urban centers. Further, gender disaggregation shows that this gender wage gap was 31 percent in the

[1] See LFS (2014–15) for the list and coding scheme of the large and small urban centres.
[2] For details, see Blinder (1973) and Oaxaca (1973)

large urban centers, while only 8 percent in the small urban centers. In the large urban centers, the monthly wages of males were PKR 18,614, while female workers earned PKR 12,892. In comparison, the earnings of males and females in the small urban centers were PKR 15,543 and PKR 14,251, respectively. The workers with higher education earned higher wages. The wages of graduate males were PKR 33,492, and of females were PKR 21,163. However, the mean gender wage difference increased with an education level.

Wages in the services sector were the highest for both genders (PKR 20,619 for males and PKR 15,959 for females). The gender wage gap was the highest in the industrial sector (PKR 10,185). The occupational classification shows that wages were the highest in the white-collar high skilled jobs (PKR 34,569 for males and PKR 21,189 for females), while the lowest in the blue-collar low-skilled jobs (PKR 12,490 for males and PKR 5,782 for females). The mean wage difference was the highest in the white-collar or high skilled jobs (PKR 13,381). Males earned lower (PKR 15,280) than their female (PKR 16,069) counterparts in the white-collar jobs.

Table 1: Gender wage differentials in large urban centers

Characteristics	Large urban centers (percent)		Average earnings of male workers		Average earnings of female workers		Mean difference	95% Conf. Interval	
	Male	Female	Mean	SD	Mean	SD			
Education									
No education	19.8	35.2	12,177	8,384	5,060	3,191	7,117*	6,018	8,215
Primary	17.7	15.1	11,946	5,830	6,520	4,676	5,426*	4,233	6,619
Matric	36.3	17.8	14,634	10,176	9,222	8,397	5,412*	3,593	7,232
Intermediate	10.7	10.4	19,362	11,569	10,809	9,405	8,552*	5,761	11,344
Graduation	15.5	21.5	33,492	24,163	21,163	17,848	12,329*	8,328	16,331
Sector									
Agriculture	0.8	0.5	10,395	3,958	6,776	2,525	3,618**	–44	7,280
Industry	49.5	27.7	16,423	14,306	6,239	5,640	10,185*	8,229	12,140
Services	49.7	71.8	20,619	18,513	15,959	17,514	4,660*	3,055	6,266
Occupation									
WHS	22.5	43.5	34,569	24,914	21,189	19,573	13,381*	10,666	16,096
WLS	24.7	5.2	15,280	9,277	16,096	13,202	–817	–3,762	2,128

BHS	24.8	21.1	14,141	10,727	5,257	3,963	8,884*	7,172	10,597
BLS	28.0	30.2	12,490	7,386	5,782	3,507	6,709*	5,750	7,667
Source: Authors' calculations from LFS, 2014–15 Note: * and ** show p<0.01 and p<0.05 for a mean comparison test respectively									

Table 2 compares the wages of male and female workers in small urban centers. More than one-quarter of male workers (27 percent) and one-third of female workers (39 percent) had no formal education. Like large urban centers, both male (PKR 30,618) and female (PKR 18,963) graduate workers earned the highest wages among all education categories in the small urban centers. Wages in the services sector were the highest for both genders; PKR 19,420 for males, and PKR 18,520 for females. The wages were higher in the white-collar high skilled jobs (PKR 30,444 for males and PKR 21,715 for females). Moreover, the mean difference was the higher in the white-collar high skilled jobs (PKR 8,729) compared to white-collar low skilled jobs (PKR 5,071).

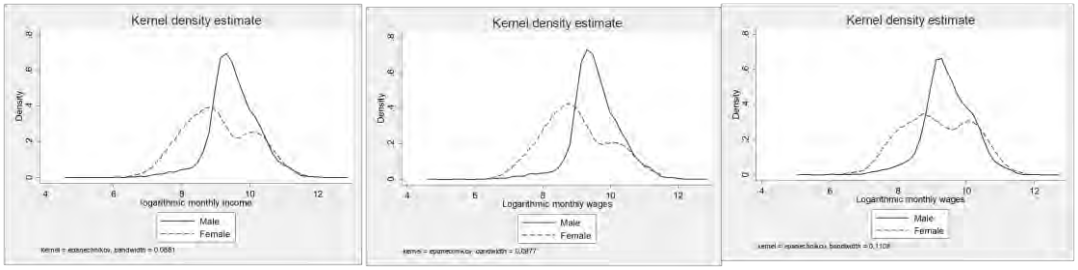
Table 2: Gender wage differentials in small urban centers

Characteristics	Small urban centers (percent)		Average earnings of male workers		Average earnings of female workers		Mean difference	95% Conf. Interval	
	Male	Female	Mean	SD	Mean	SD			
Education									
No education	27.3	38.6	11,494	6,580	5,694	4,406	5,800*	4,728	6,872
Primary	22.1	10.0	11,309	7,880	7,465	5,374	3,843*	1,399	6,288
Matric	30.5	19.8	14,395	10,196	11,493	9,945	2,903*	864	4,941
Intermediate	10.3	11.7	18,950	10,859	15,116	10,397	3,834*	993	6,675
Graduation	9.8	20.0	30,618	18,729	18,963	18,214	11,656*	7,716	15,595
Sector									
Agriculture	1.9	6.7	15,511	10,646	5,644	3,521	9,867*	6,255	13,479
Industry	43.8	21.3	13,169	9,372	5,984	4,109	7,185*	5,422	8,949
Services	54.3	72.0	19,420	16,524	18,520	17,460	900	–754	2,553
Occupation									

WHS	18.4	53.0	30,444	21,403	21,715	18,188	8,729*	6,230	11,227
WLS	24.2	3.5	15,312	10,925	10,241	6,967	5,071	479	9,663
BHS	19.0	18.2	13,074	7,722	5,484	3,594	7,590*	6,023	9,158
BLS	38.5	25.4	11,781	6,770	6,066	4,623	5,715*	4,518	6,911
Source: Authors' tabulation from LFS, 2014–15 Note: * shows p<0.01 for a mean comparison test									

The kernel density estimates of the gender wage gap for urban workers are exhibited in Figure 1. Part (a) shows the mean wages of urban males tend to be higher than their female counterparts in the urban labor market, and (b) shows the mean wages of males in large urban centers were much higher than females. The kernel density estimate of the mean wages of female workers was bimodal in Figure 1(c), implying the wages of a smaller proportion of females were higher than their male counterparts in the small urban centers.

Figure 1: Kernel density estimates of the gender wage gap



(a) Urban centers (b) Large urban centers (c) Small urban centers

Source: Author’s calculations

The results of the Blinder–Oaxaca decomposition of the gender wage gap were compared for the large and small urban centres in Table 3. The overall gender wage gap comprised explained and unexplained components. About 19 percent of the overall gender wage differentials were explained, and 81 percent were unexplained in the large urban centers. Unlike, large urban centre, the explained part of gender wage gap was 38 percent in small urban centres.

Females earned lower than their male counterparts in the urban centers, a difference of PKR 7,140 in the large urban centres, and PKR 4,237 in the small urban centers. Females earned 58 percent lower in the large urban centers, while 30 percent was lower in the small urban centers. The mean wages of male and female workers were

higher in the large urban centres compared to their counterparts in small urban centres' counterparts. Age, education, and sector of employment contributed positively to the explained component in large urban centres, while age and education decreased the gender wage gap in small urban centres.

Table 3: Blinder–Oaxaca inequality decomposition results

Differential	**Large urban centre**			**Small urban centers**		
	Coeff.	SE	Z	Coeff.	SE	Z
Male	17,077	218	78*	14,202	199	71*
Female	9,938	488	20*	9,965	526	19*
Gender wage difference	7,140	535	13*	4,237	563	8*
Explained						
Age	2,387	427	6*	–187	423	0
Age squared	–1,339	297	–5*	4	245	0
Working hours	–658	188	–4*	–550	151	–4*
Education	653	214	3*	–224	200	–1
Sector	363	78	5*	53	33	2***
Occupation	–76	133	–1	–695	131	–5*
Total	1,330	422	3*	–1,598	358	–4*
Contribution	19%	–	–	38%	–	–
Unexplained						
Contribution	81%	–	–	62%	–	–
Note: Authors' estimation from LFS, 2014–15 *, **, and *** show p<0.01, p<0.05, and p<0.1 respectively						

Conclusion

Given the limited literature on gender wage gap in the urban labor market in South Asian Countries, this study aims to compare the gender wage differentials in the large and small urban centres in Pakistan. The study used the nationally representative Labour force survey 2014-15. The Oaxaca Blinder decomposition technique was used to decompose the factors contributing to gender wage inequality in large and small urban centres. Furthermore, the Kernel Density analysis was carried out to examine the gender gaps in across the wage distributions.

The gender wage gap was 24 percent in the urban centers, 31 percent in large urban, and 8 percent in small urban centers. The gender discrimination tends to be more prevalent in the lower tiers of the urban labor market compared to managerial ranks. Workers in large urban centers earn 17 percent higher wages than workers in small

urban centers. The uneducated group is the most vulnerable in the urban labor markets, especially female workers.

Based on research findings, this study calls for increasing the opportunities of education for girls to reduce the gender wage gap. SDG 10 calls for sustained income growth for all workers, particularly for vulnerable groups by 2030. It is achievable only if concrete measures, such as ending discrimination on education's returns, more opportunities for females in high-tech jobs, are undertaken in the growing sectors. The SDG 11 aims to formulate proactive employment policies to tackle the challenges of urbanization. Around one-third of the females are unemployed in the urban labor market in Pakistan. The female participation need to be increased in high skilled or white collar jobs to reduce the gap in female and male high skilled workforce. The future research should look at the factors contributing to the gender wage gap in the large and small urban centers of Pakistan at provincial and district levels to provide policy insight at the local level.

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Exploring the trends and pattern of illegal migration in Sri Lanka: Challenges for sustainable development goals

K.D.M.S.K. Weeratunga[1]

Introduction

Trends and pattern of illegal migration can be a seen as timely topic for discussion, especially in relation to Sri Lanka because its association with the conclusion of 30-year long civil war in 2009. Since the terms illegal and irregular migration are applied interchangeably in demographic literature, the present paper also uses both frequently. This topic is also of utmost important when one discusses about its relationship with the sustainable development goals (SDGs) because they explicitly address eradication of human trafficking. Human trafficking in the context of illegal migration to developed nations, especially to European countries, Canada, Australia and New Zealand Recent has led to a great discussion about this topic worldwide. It is also important to mention that this has become a global topic after 2016, with the convening of a summit by the UN General Assembly, for Refugees and Migrants in New York to reiterate existing state commitments towards refugees and migrants. This New York Declaration for Refugees and Migrants adopted at the Summit concedes, illegal migration cannot be fully understood at present because of the gaps prevailing in data. In this context, the present study can be regarded as very relevant to the on-going discussion of global illegal migration issues.

Research objectives

The study has two objectives: First objective is to explore the trends and patterns of illegal/irregular migration in Sri Lanka, second is to examine the challenges for sustainable development goals and targets of the 2030 agenda in the context of illegal/irregular migration.

Methodology

This study extensively uses 'Desk Research' methodology. Data for the study is mainly drawn from various United Nations data sources as well as from other literature on the subject. The limitation of the study is the lack of reliable data on stocks or flows of irregular because of difficulty of gathering such data.

Furthermore, this study adopts an exploratory approach also to collect and analyze data and information on illegal migration from Sri Lanka from a variety of data

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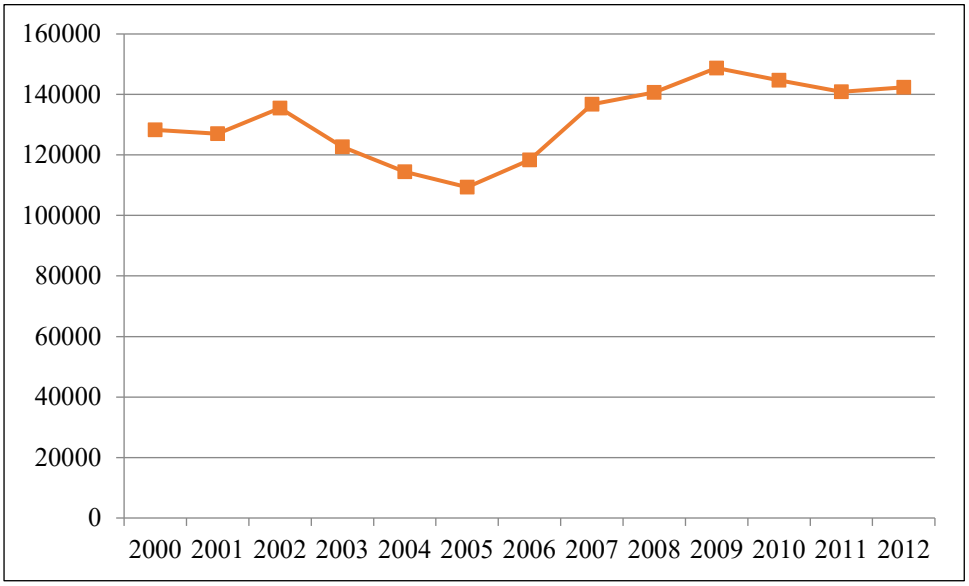
sources which includes several secondary data sources especially from the UN websites as well as from literature related to illegal migration in Sri Lanka. Therefore, this study adopts a qualitative approach as its method of analysis.

Results and discussions

Global Trend

Global trends of refugees and asylum seekers shows that major destination countries are Australia, France, Germany, Norway, Netherlands, and the United Kingdom as shown in Figure 1. During the period, 2000-2012, Sri Lankan refugees/asylum seeker between 100,000 and 140,000 during. However, it is clearly visible that this trend attentively bear a resemblance to the intensification of war activities and its climax in 2009. After 2009, the trend shows a continuity with numbers stabilizing around 140,000.

Figure 1: Sri Lankan Refugees/asylum seekers in major destination countries, 2000-12



Source: UNHCR Population Data

Among the major destination countries, France and Australia have become dominant as they have received the highest number of asylum applications (Table 1). This reveals that France and Australia have become the most desirable destination for Sri Lankan asylum seekers.

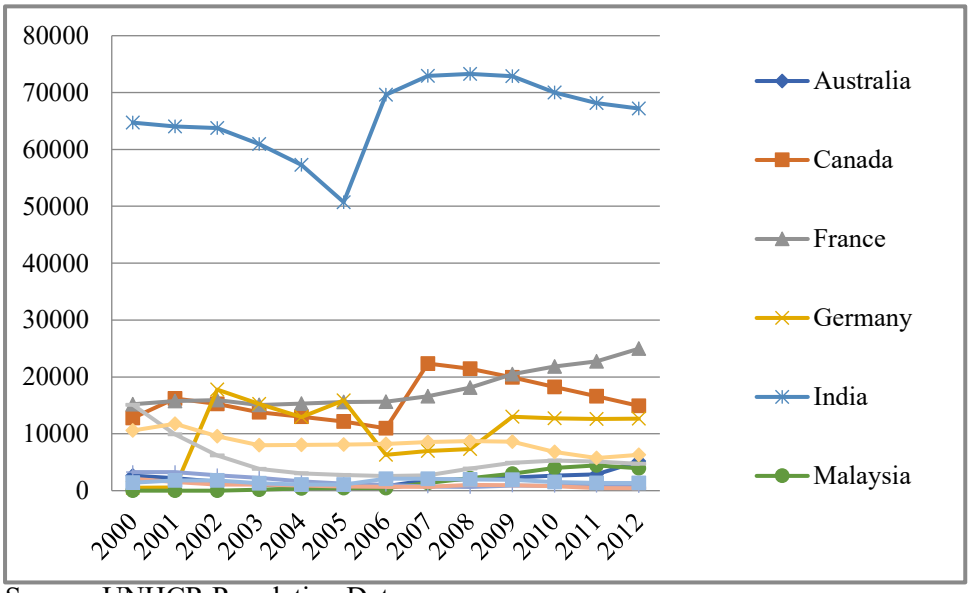
Table 1: Sri Lankan international asylum applications in 2012 and first half of 2013

Country	2012	First half of 2013
France	6890	3833
Australia	2427	3715
The United Kingdom	3162	1840
Malaysia	709	1568
Switzerland	1177	1126
Germany	481	469
Indonesia	360	381
Canada	428	126
Japan	461	124

Source: UNHCR population Data

When India is included into this list, the neighboring state Southern State of Tamil Nadu in India has been the most attractive destination as shown in Figure 2.

Figure 2: Refugee/asylum seekers by major countries of destination containing India, 2000-12



Source: UNHCR Population Data

It is a widely known factor that Sri Lankan Tamils have wanted to look for refugee status in countries where there is a sizable number of Tamil population. This clearly seen in Table 2.

Table 2: Tamil Population in major destination countries

Country	Population
Australia	Over 30,000
Canada	Over 300,000
France	Over 100,000
Germany	Over 50,000
India	Over 55,000,000
Malaysia	Over 1,060,000
Netherlands	Over 20,000
United Kingdom	Over 300,000
United States of America	Over 300,000

Source: tamilo.com/tamil-population-education-29.html

Patterns of Illegal Migration in Sri Lanka

The literature suggests that Italy as the most attractive country for Sri Lankan illegal migrants. The qualitative analysis of this section includes both 'systematic review of literature' as well as 'media content analysis' on illegal/irregular migration (Senadhi and Dissanayake, 2018). It has been found that some Sri Lankans irrespective of their ethnic background and place of residence considered Italy as a potential destination for labor migration, during the 1990s (Brown, 2012). However, this migratory movement was virtually overshadowed by Sinhalese Catholic fishermen youth from the minor towns of Negombo, Wennappuwa and Chilaw. Brown (2012) revealed that the main reason behind this movement was the severe disruption of their fishing in the northern sea of the island due to civil war. This has made for these young fishermen to look for alternation employment opportunities which ultimately led to migration to Italy through illegal means. With this Italy became a potential destination for illegal migration from Sri Lanka.

Additionally, Tamil Nadu in India was a major destination to Tamil refugees from 1982 because it was evident that more than 100,000 Tamils have fled to Tamil Nadu (Hugo and Dissanayake, 2017). It has been recorded that 68000 were living in government running camps while 32,000 outside the camps by 2012. It should also be noted that majority of them have fled to Tamil Nadu by boats. Howie (2013: 100) described that boat agents have been the main mediators of this illegal migration to India and elsewhere.

When media reports were scrutinized, it was found that there are different patterns of illegal/irregular migration: According to the ColomoPage (ColomboPage, Sun, Sep 1, 2019, 10:16 pm SL Time, ColomboPage News Desk, Sri Lanka), there is a

significant number of cases of illegal migrants and they have been mainly caught by the Sri Lanka navy at their departure. The New Humanitarian (formerly IRIN News), 10 October 2019 reported following facts on illegal/irregular migration: new asylum route by boat, use of fishing boats or makeshift raft for travelling, using French territories of La Réunion and Mayotte off the coast of Madagascar as a point of destination, potential network operating in the transition points and destination countries,

The literature revealed that the main reason for illegal migration is economic and other factors which includes protect issue are secondary. The intention of the illegal migrants is therefore, to look for prosperous countries. prosperity,

Challenges for Sustainable Development Goals and the Targets of the 2030 Agenda
Multi-dimensional reality of migration has been recognized in the context of inclusive economic growth. Hence, migration has been integrated in to the 2030 Agenda for Sustainable Development (Department of Economic and Social Affairs of United Nations, 2015). The member states aim was to strengthen the international corporation to ensure safe, orderly and regular migration with full respect for human rights and human treatment of migrants (Department of Economic and Social Affairs of United Nations, 2015). However, illegal patterns of migration threaten to reverse much of the development progress in recent decades (Department of Economic and Social Affairs of United Nations, 2015: P.2). As seen from this study, the first challenge is the complexity of assessing of human trafficking in the context of Sustainable Development Goals. When examining the trend and pattern of illegal migration, it was found that illegal migration originates in developing nations and moving towards developed nations. At present, developed nations encounter population decrease, especially a labour force squeeze due to historical fertility decline and on the other hand, developing nations have exodus labour force with relative high unemployment rate. Therefore, it is reasonable to assume that unless employment prospects are increased at countries of origin and policies of skilled migration are promoted and formalized, continuity of illegal migration can be still observed and this aspect can be seen as a major challenge to achieve SDG 4. In this context, Sri Lank is not an exception.

Conclusion
This study showed that illegal migration from Sri Lanka has intensified after the conclusion of civil war in 2009. The primary move for illegal migration from Sri Lanka was economic but protection and other issues are secondary. The major finding of this study is the imbalance between economic prosperity and labour force imbalances between countries of origin and destinations for illegal migration, which

created a great challenge to achieve sustainable development goals in relation to human trafficking aspect.

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Patterns and characteristics of youth migration for employment from the Estate Sector, Sri Lanka

M.G.D.I.D. Wijerathne[1]

Introduction

Literature on migration proves that youth (15-24 years) tend to migrate internally as well as internationally in their early twenties primarily to seek employment (Gavonel, 2017; Lloyd, 2005; Perera, 2020). In the 1960s, 1970s and 1980s migration transitions have received a significance attention and such transitions were driven by the several factors, such as factors associated with origin and destination, intervening obstacles and personal factors. Also the youth who are comprised of higher aspirations and better education have migrated to seek employment predominantly in industrial and service sectors (Lee, 1966; Sajaastad, 1962; Todaro, 1980 ;). Over the past decades, migration of youth from rural to urban areas for employment has been identified as the key phenomenon in the internal migration in Sri Lanka. As a result, some sectors are losing working age youth. One such sector is Estate sector, and it consists of all plantations which are 20 acres or more in extent and -also comprises of ten or more resident labourers (DCS, 2015). The estate sector has been playing a significant role in Sri Lanka's economy, since its inception in the British colonial era until recent years. Typically, youth in the estate sector work as wage labourers and primarily they worked in tea, rubber, and coconut estates. Male labourers engage in grinding tea leaves, applying fertilizer, tying rocks, and planting trees, while the women mainly engage in plucking tea leaves and weeding (Muthu, 1990). Gunatilaka (2003).It is found that though the estate people provide significant contributions to export earnings of the country, they remain under chronic poverty due to insufficient income and poor infrastructure facilities. However, in recent years, it has been evident that youth in the Estate sector are more likely to work outside the Estate sector, and hence migrate to urban or other rural areas to engage in employment in industrial or service sectors (Eriyagama, 2011; Jayawardhana, 2014; Vijayakumar and Olgar, 2012). Therefore, identifying the characteristics of youth migrants and their migration dynamics and associated factors are vital to address policy implications.

Research objective

The objective of this study is to examine the patterns and characteristics of youth out-migration for seeking employments: a case study of Estate Sector, Sri Lanka

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Methodology

This study was based mainly on primary data obtained from a sample of 125 youth who were between the ages 15-24. The sample was selected purposively considering youth those had migration experience of at least for six months for seeking employment outside the estate sector, but had returned to their origin homes during the election period. Hatton Grama Niladhari Division in Nuwara Eliya District was selected as the study location. Data were collected through an interviewer administered questionnaire from 08th February to 15th February 2018.

Results and discussion

The analysis reveals that there is a significant number of young people migrating from estate sector to nearby cities, as well as to Colombo to engage in employment due to lack of employment opportunities and wages at the origin. Many of the youth had preferred to work outside the estate sector than work in the estate sector. These results suggest that the employment patterns of estate youth have been changing from traditional agricultural employments to other industrial and service sectors. The type of jobs that migrant youth engaged in are given in Table 1.

Table 1: Type of jobs engaged by migrant youth

The nature of the job engaged at the destination	Percentage
Hotel related jobs	15.2
Security Section	2.4
Construction related jobs	7.2
Jobs related to Garment Factories	8.8
Drivers	6.4
Domestic Service	4.8
Other Government Jobs	10.4
Other private company related jobs	4.8
Factory related jobs	12.0
Jobs related to Shops	28.0
Total	100.0
Number	125

Source: Sample survey, 2018

It is also revealed that a majority of youth (82.4 percent) had engaged in informal sector jobs. Wijayachandran (2006) also found that about 35.8 percent of estate people were engaged in informal sector jobs. When gender dimension is considered, it is noted that the majority of migrant male youth had engaged in industrial sector and

construction related jobs while majority of female migrant youth had engaged in domestic work-related employments (domestic workers/ servants) and jobs in garment factories. The reasons behind the youth migration from the estate sector indicate that the majority of them prefer to migrate due to insufficient income from the traditional jobs (40.8 %), mismatch between the available jobs and their education (27.2%), lack of opportunities for social mobility and parental influence on out-migration (16.8%).

The findings further revealed that family characteristics of migrants play an important role with regard to deciding to migrate from the estate sector. Table 2 shows whether the family members of migrants, employed in the estate sector or not, and results revealed that approximately two thirds of family members had employed outside the estate irrespective of their gender.

Table 2: Employed sector of family members

Gender	In the estate sector	Outside the Estate sector	Total	
	(%)	(%)	No.	(%)
Male	32.7	63.3	150	100.0
Female	34.0	64.6	147	100.0
Total			297	

Source: Sample survey, 2018

The majority of those employed in the Estate sector were women and hence the lowest sex ratio (92.4) was recorded in the estate sector. Another key characteristic which was observed is that the youth migrants had high levels of education than that of their parents' and grandparents' generations. The youth are not interested in working in the Estate sector as the other family members tend to work outside the Estate sector. Table 3 shows the improvements in level of education across generations. Grandparents and parents of migrants, and siblings/ migrant themselves and the majority of young generation had G.C.E. O/L or above qualification.

Table 3: Level of education by generation

Level of education	First Generation		Second Generation		Third Generation
	Grand mother	Grand Father	Mother	Father	Siblings
Never went to school	15.2	5.6	1.6	-	-
Grades 1-5	52.8	35.2	8.0	12.0	3.1
Grades 5-9	26.4	40.8	32.0	28.8	1.0
Grades 9-11	5.6	17.6	40.0	35.2	3.1
Passed GCE (O / L)	-	0.8	16.0	22.4	56.1
Passed GCE (A / L)	-	-	2.4	1.6	35.7
Higher Education	-	-	-	-	1.0
Total	100	100	100	100	100
Number	125	125	125	125	-

*Note: Multiple Response

Source: Sample survey, 2018

Table 4: Employed sector by generation

Generation		Sector				
		Inside the Estate Sector	Outside the Estate Sector	Both Sectors	Total	
		(%)	(%)	(%)	No.	(%)
First Generation	Grand Mother	90.4	8.8	0.8	125	100.0
	Grand Father	76.0	23.2	0.8	125	100.0
Second Generation	Mother	49.6	47.2	3.2	125	100.0
	Father	40.0	55.2	4.8	125	100.0
Third Generation	Siblings	9.3	85.6	5.1	97	100

*Note: Multiple Response

Source: Sample survey, 2018

Table 4 depicts that a large proportion of the first generation employed within the estate sector and they were less educated. However, the second and the third generation, received gradual improvement in education due to setting up schools within the estates and making education compulsory for males up to grade 8 and for

females up to grade 5. As a result, men received higher level of education than women. Accordingly, the majority of the women in the first generation in this group, 52.7 percent had received formal education up to grade 5 and 26.4 percent had received education from grade 5 to 9. Only 5.6 percent had received higher education. At the same time, opportunities for education were limited due to the lack of awareness, lack of need for education and poor economic conditions. For this reason, 90.4 percent, of the majority of first-generation women, were employed in the estate sector while 8.8 percent were employed outside the estate sector. About 40.8 percent of the first-generation males had received education from grade 5 to 9 and 17.6 percent from grade 9 to 11. Men were more likely than women to have higher education so that they find it easier to find a job outside the estate. However, the majority of them were employed in the estate sector itself (76%). Accordingly, the majority of the first -generation family members were employed in the estate sector while in the second generation, the level of education of men was higher than that of women. Also, compared to the first generation, the proportion of family members seeking jobs outside the estate sector in the second generation were 55.2 percent and 47.2 percent men and women respectively. In contrast 86.0 percent of the third - generation family members were employed outside the estate sector.

Conclusion

These findings suggest that employment pattern of youth has been changing and their out-migration from the estate sector is associated with a number of economic, social and environmental factors. It is also revealed that the changing nature of job expectation of youth, especially expecting jobs in the industrial and service sectors may have significant implications in terms of shrinking labour in the estate sector. A significant improvement in education facilities and access to education has led them to achieve higher socio-economic status over the past years and thus that has contributed in changing the nature of employment across the generations. The first generation started working mostly in the estate sector and the second generation started working outside the estate sector. As a result, most of the youth in present are employed outside the estate sector. Nevertheless, migrant youth face diverse problems including job security and wage disparity, at destinations due to lack of skills. Therefore, it is suggested to provide proper training for youth on vocational qualifications (NVQ) in order to ensure secure and productive employments for them. Therefore, these migrant youth should be given priority when investing in youth.

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Identification of causes and effects of drug usage in Kuchchaveli DSD of Trincomalee District

L. Yugarajah[1] and F. Ruzaik[2]

Introduction

Drug trafficking is a mass level business operation in the contemporary world, irrespective of developed and developing countries. Drug usage has become a major threat to the global economy in terms of medical and welfare cost. In addition, this is a major factor which determines the ratio of birth and death. According to Ritchie and Roser, (2017); alcohol and drug usage are important risk factors for early death. Approximately, 11.4 million people die prematurely annually, because of this habit. Further, over 350,000 people in the world die per annum, due to alcohol and illicit drugs overdosing. Similarly, in Sri Lanka, the annual death record due to the usage of multiple drug varieties is a remarkable amount, with numbers recording 15,521 for tobacco, 6,150 for alcohol, and 748 for illicit drugs.

Use of psychoactive substances (or drugs) is a known phenomenon in Sri Lanka since ancient times, and was traditionally used for medicinal purposes in the 'Ayurvedic' system of medicine until recent times. With the gradual development of domestic tourism, it was used for recreational purposes, especially cannabis and opium. Thereafter, its usage expanded with the arrival of synthetic and potent drugs (heroin) into the country in early 1980's onwards, among the youth (NDDCB-2018).

Sri Lanka has become one of the target markets and is used as a platform for transmitting drugs to South Asian and Australian countries by mass level drug dealers. Gradually, this has become an acute social problem in Sri Lanka, obstructing individual's development and sustainability of the nation. 81,156 persons have been arrested due to the usage of drugs in the year 2017, which is a 2 percent increase compared to the previous year (NDDCB, 2018). The Sri Lankan Government spends approximately LKR 212 billions to overcome multifarious health related issues, caused by the usage of various drugs. Moreover, a death toll of 47,000 people was recorded in 2017 (ADIC, 2017). According to the statistical Handbook of Trincomalee District (2017), approximately 1,151 people are addicted to drug usage in the Kuchchaveli DSD. This has become a recurring issue in the study area.

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Research objectives

The main objective of this study is to identify the causes and effects of the increasing trend of drug usage in Kuchchaveli DS Division in Trincomalee District, Sri Lanka. Furthermore, it is also expected to identify the social, environmental and cultural factors, caused for drug usages in the study area and to examine the strategies to mitigate such causes and its effects in terms of individual development.

Methodology

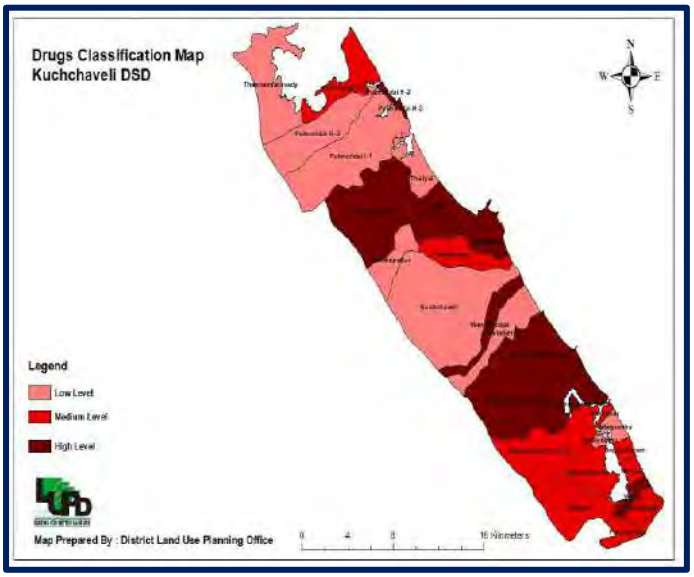
This study is based on both primary and secondary data. Snowball random sampling technique was used to collect primary data, based on the identified 70 affected households and the data was collected using structured questionnaires. In addition, interviews, discussion with focus groups and direct observation were carried out to collect the field data. Further, the researchers have learned that there are groups whose drug consumption patterns differ in relation to volume and type due to their income level, education background and cultural forces. Moreover, direct scene observations were used to collect data on the routine life of the society, social status, civic system, lifestyle, cultural and economic status. Further, the environmental scenario, landscape, vegetation cover, natural resources and weather situation have also been noted through direct observation. Key information was collected from the officers of relevant governmental and non-governmental organizations. Secondary data was collected, using existing policies, handbooks, maps, websites, police reports and scholarly articles. The collected quantitative and qualitative data were analyzed using the GIS, SPSS, MS-Office software and percentage, analytical techniques are presented using charts and diagrams.

Results and discussion

According to the findings of this study, 72 percent of the people are addicted to drug usage. Out of them, 94.08 percent are men, mostly, unmarried and between 19-45 years of age and 5.92 percent are women. East Kumpuruppity is the most affected area and has multiple social issues. K*asippu, kallu,* heroin*, kancha*, *kancha flowers,* alcohol and cigarettes are majorly used by the dwellers of the study area. This study recommends maintaining applicable strategies and management plans for a suitable period to mitigate drug usage and its effects to enable the government to achieve its policy “Drugs free-2020”.

This study identified the high, intermediate and low drug usage and consumption places, representing seven GNDs; which are exhibited in the below Figure1.

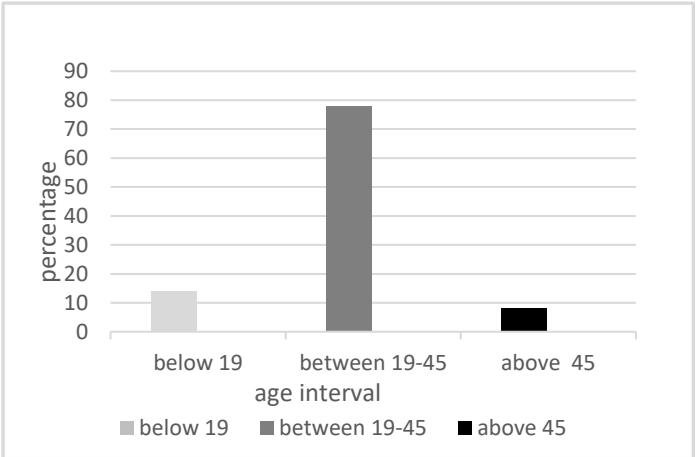
Figure 1: Pattern of drug usage in different levels in the study area



Source: - Kuchchaveli DS Division, 2018.

The major reasons for the increasing trends of drug usage in the Kuchchaveli DSD are its environmental and social factors, such as its geographical location, coastal area, Kokilai lagoon, spread of natural resources, eco-tourism activities, poor income, literacy level, mindset of the people, post-war circumstances and enrichment of fish and biggest plateau landscapes *etc*. Most of the drug addicts are somehow involved in illegal activities.

Figure 2: Age distribution of the drug addicted population



Source: - Sample survey, 2018.

Mostly, all the drug addicts are somehow associated with disorder(s) in terms of physical, physiological, mental health effects. Risk levels are varied, depending on the type, frequency and volume of the drug that they use. Some drug addicts suffer from chronic diseases too. In general, in Kuchchaveli DSD, the child birth ratio shows a decreasing trend, whereas death ratio is showing an increasing trend. Similarly, the cultural demolition, increase of crimes and illegal offences, economical handicapped, social changes during the tenure of tourism development in the study area, backward in school education, increase in school drop ratio, malnutrition, manpower wastage, changes in fine arts, smoking causes inconvenience to the user and others, sabotage of social development, unemployment, and hunger and starvation are some of the other direct and indirect negative impacts caused by drug usage.

Conclusion

Kuchchaveli DSD in Trincomalee District is identified as a highly vulnerable area for drug usage, especially in the Kumburupitiya East Grama Niladari Division. These habits have led to various health impacts on the inhabitants of the study area. The major reasons behind this issue are environmental and socio-economic factors. Kuchchaveli DSD is surrounded by marine resources and wild resources, so its geographical locations provide room for smuggling and transportation of drugs. In addition, unemployment, poor income and illiteracy level are mainly identified as the human factors for the increasing trend of drug usage. Hence, public awareness, education and strictly implementing existing laws are major remedial measures that could be implemented to reverse this situation.

Further, establishment of drug counselling centers; extending drug prevention, treatment and rehabilitation programmes; using religious places to preach on adverse impacts of drug usage; and encouraging the participation of all stakeholders to mitigate this habit are essential. A collective responsibility is required to overcome adverse impacts, to reduce the number of users and to restrict new entry of drugs in order to make Kuchchaveli DSD a drug free area.

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The war against smallpox: the impact of variolation and vaccination on smallpox mortality in nineteenth century Ceylon

T.M. Zameer-Careem[1]

Introduction

One of history's greatest killers, smallpox is estimated to have killed between 300 and 500 million people in the twentieth century alone. In Ceylon, smallpox was referred to by a wide array of different terms such as *vadura rogaya* (disease caused by the wrath of vadura demonesses), *vasuriya* (derived from vasoori, Tamil for smallpox*), deviyange ledé* (the divine affliction), *Maha leda* (the great disease), *raktawati* (demon of infection), *divi dosey* (leopard misfortune), *Rattakkha* (Red-eyed demon), *Visphota, Wasanta,* and *masurika*, derived from *masura*, Sanskrit for pulses (Clough, 1982; Deraniyagala, 1965; Fernando, 2005; Pridham, 1849; Senaveratne, 1920; Tennent, 1862; Wirz, 1954). Smallpox wiped out half of Ceylon's populace during Sirisangabo's reign in 238 A.D. and was among the major reasons that led to the collapse of the Rajarata Civilization (Brohier, 1973; Forbes, 1840; Intirapālā, 1971; Pieris, 1992; Turner, 1923). Legend has it that smallpox committed great ravages at the time of Arahat Mahinda Thero's advent in the third century B.C. and during St Francis Xavier's sojourn in 1545, small-pox raged through Mannar, killing inhabitants by the tens of thousands. Prince Sakka Senapati, Princes Dom Luis and Dora Joao of Kotte, King Karaliyadde Bandara, Mudaliyar de Melho, Gongalegoda Banda, Uduwawala Unnanse, Galagoda Disava, and Ellepola Ihagama Kumarihamy are some notable Ceylonese who succumbed to smallpox, while the survivors include King Panduvasudeva, Lady Van Der Meyden, King Sri Vikrama Rajasinghe, Walapane Dissawe, and Nyanatilake Thero (Lawrie, 1896, 1898; Pieris, 1913, 1920, 1950). According to White (1885) when the British seized the Dutch possessions in Ceylon in 1795, the natives had been severely affected by smallpox, and most areas of the island were unhealthy. Dr Christie (1811), in his report on vaccination, states, 'as per the most moderate calculation, smallpox carried off' a sixth part of the population; yet no attempt was made by the Dutch Government to lessen this destruction' (Moore, 1815, p.238). Unlike their predecessors, the British took active measures to rein in smallpox in Ceylon. Under the orders of Governor Frederick North, Smallpox Hospitals were established in the four principal districts under British possession, viz. Trincomalee, Colombo, Jaffna, and Galle, for the reception of patients labouring under small-pox, and for the purpose of promoting variolation (formerly called inoculation), a technique of deliberately infecting a

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person with a (hopefully mild) strain of smallpox (Christie, 1811). In 1796, English physician, Edward Jenner developed the smallpox vaccine, until then, the only means of preventing smallpox had been variolation. From Bombay the smallpox vaccine (impregnated threads with cowpox lymph) reached Trincomalee, where the first vaccination was performed on a Burgher named John Sybelle on the 11th August 1802. Just after a month of its introduction, around two thousand had been vaccinated in the district of Colombo alone and an estimated ten thousand persons were vaccinated by the end of three months (Baron, 1827; Christie, 1811). The British forbade variolation in Ceylon as early as 1802 (Christie, 1811; Kinnis, 1835; Kirkpatrick, 1910; Moore, 1815; White, 1885). The banning of variolation placed Ceylon at the forefront of medical progress as most countries, despite the success of Jenner's experiments, supported variolation. In 1863, Ceylon became the first British colony in Asia where vaccination was made compulsory by an Ordinance and with the last definitive case reported in 1967, Ceylon became the first South Asian nation to eradicate smallpox (Government of Ceylon, 1864; Colonial Office, 1866; Fenner, et.al. 1988; Vanderstraaten, 1886). In May 1980, the 33rd World Health Assembly officially declared the world free of smallpox.

Research objectives

The objectives of the study are to examine the impact of Variolation and vaccination on smallpox morbidity and mortality in Ceylon from 1800 to 1819 and to prove that Ceylon was the first country in the world to extirpate smallpox through vaccination in the early nineteenth century.

Methodology

Historical Research Methodology was employed for this study. As this is a work dealing with an eradicated disease and an obsolete procedure like 'variolation', an extensive collection of primary sources (Annual health reports, despatches, and letters of colonial officials and physicians, records of numerous government departments and committees, both published and in manuscript, books, academic journals, Medical treatises, census records, newspapers, and magazine clippings published between 1800 and 1899) and secondary sources, available at the National Museum Library, the National Archives and a number of other major national repositories, including digital libraries served as principle tools for this research.

Results and discussion

According to the data collected from the first of October 1800, to the 30th of September 1802, 2110 persons were provided with treatment at the smallpox hospitals and villages and 4158 persons were inoculated against smallpox and one-

fourth of the patients who were naturally infected and one in thirty-eight of those inoculated died of smallpox (Christie, 1811). Cordiner (1807) reported that the success of variolation in Ceylon was comparable to that achieved in Europe. In 1802, Ceylon became the first country in the world where variolation was prohibited. It was not until 1840 when Britain prohibited variolation, which was outlawed in Russia in 1805, Prussia (1835), British India (1870), and in Kelantan in 1905 (Basu et al. 1979; Bhattacharya, 2014; Fenner, et al., 1988; Rickards, 1893; Selin, 2013). Variolation was common in Afghanistan, China, and in some parts of Africa, India, and Pakistan up to the 1960s, occasionally accompanied by a high case-fatality rate (Fenner, et al., 1988). By April 1804, twenty-one thousand individuals had been vaccinated and smallpox was declared eradicated in Matara, Galle, Hambantota, and Colombo (Kinnis, 1835). Between the years 1802 and 1808, under the vigilant direction of Dr Christie, 103,035 persons were regularly vaccinated. The consequence was that smallpox became unknown in any part of the island from February 1808 till October 1809 (Baron, 1827; Christie, 1811; White 1885). From 1802 until 1819, there was not a single outbreak reported in any part of Ceylon, including the Kandyan provinces. In the words of Marshall, writing in 1823, "the epidemic (1819) extended to the Kandyan provinces, where the disease had not been known for a period of about seventeen years" (p.74). Dr. George Gregory (1843), Physician to the London Smallpox Hospital, wrote, "Ceylon was a British colony when the Government earliest interfered and most vigorously encouraged the practice of vaccination. Salaried vaccinators were scattered over the whole island. So successful were their labours, that, up to the beginning of 1819, it had often been said that the experiment exterminating smallpox, had been made and successfully carried out in Ceylon" (Gibbs, 1856, p. 11; Gregory, 1843, p. 210). It is worthy of note that even the Buddhist and Hindu clergy in Ceylon submitted to vaccination surmounting the prejudices of their education (Bennett, 2020; Christie, 1811). Even political dissidents like Keppetipola Dissawe, allowed himself and his family to be vaccinated (Marshall, 1823). It should be noted that Dr Edward Jenner used Ceylon as a pet location to prove the efficacy of vaccination (White, 1885, p.345). He even urged Dr Thomas Christie, with whom he developed a strong friendship in his later years, to publish an account of the introduction, progress, and success of vaccination in Ceylon, believing that it might help promote vaccination elsewhere (Baron, 1827). Ogden (1987) suspects that Ceylon was the first country in the world to extirpate smallpox in the early 1800s and according to Hopkins (2002), endemic smallpox was eliminated in Ceylon way back in 1821.

Conclusion

Based on the findings of this research, it is apparent that both variolation and vaccination reduced small-pox mortality in nineteenth-century Ceylon. But Jenner's

vaccine was far more successful at combating smallpox than the much lethal variolation, which the British forbade in 1802, making Ceylon the first country in the world to do so. Vaccination was held to have had a perfect triumph in Ceylon, as evinced by many authors, including Dr Jenner, and from 1802 to 1819, Ceylon remained 'epidemic-free'. The suppression of variolation and the effectual vaccination campaigns carried out under the able supervision of Dr Christie helped extirpate smallpox from Ceylon. Hence, it can be ascertained with good authority that Ceylon was the first nation in the world to eradicate small-pox in the early nineteenth century.

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History of Afghan immigration to Ceylon: From 1800 to 1940

T.M. Zameer-Careem[1]

Introduction

Sri Lanka (formerly Ceylon) experienced major waves of immigration in the nineteenth and early twentieth centuries. The least known among the surfeit of immigrant groups that settled in Ceylon are the 'Afghans', who hailed from the North-Western Frontiers and Baluchistan Agency of British India (now Pakistan) and from Afghanistan (Bracelin, 1960; Dep, 1969; Fairweather, 2018; Pippet, 1938; Smythe, 1932). In Ceylon, the Afghans were referred to by an array of different terms such as *Pattani, Pattaniya, Afghan karayo, Kabul Manishen, Bangali manishen/ orang, Gini poli karayo* etc. But the most common term employed by the natives was, "*Bhai*" (Baay/Baie), which was not only affixed to their names but was also recorded by the officials in Ceylon as their surname (Amerasinghe, 1965, 1968; Joseph, 2018; Menon, 1981, 1983; Wahab-Salman, 2015; Weerasooria, 1973). As most Afghans were money-lenders, who subsisted on unconscionable usury, they became synonymous with rapaciousness, irascibility, and intrigue. In Ceylon, the Afghans suffered under the same hostility which the Jews experienced in other countries where the locals were improvident (Bates, 2003; Cowell, 1933). Because the majority of the Ceylonese shunned and despised them, there have been hardly any writings about the 'Afghans', except descriptions of their usury, transgressions and formidable demeanour (De Souza, 1919; Feinberg, 2005; Menon, 1981; Pippet, 1938; Schrader, 1994; Tambyah, 1908). In the words of K.P.S. Menon (1981) "The Ceylonese did not mind borrowing money from them (Afghans) but socially kept them at arm's length" (p. 109). Almost the entire railway officialdom and the clerks of the Colombo Commercials and Revenue Collector's Office (Kachcheris) were indebted to the Afghans (Dep, 1969; Menon, 1981, 1983; Sanderatne, 1975). In 1927, Lady Jean Lachore, donated a sum of 300 Pounds and established the "Lady Lochore Loan Fund", to provide debt relief to those hassled by the Afghans (Ratwatte, 2012). When Mahatma Gandhi, visited Ceylon in November 1927, he was kept informed of the hardships the Ceylonese endured at the hands of the Afghan and Chetty moneylenders (Gandhi, 1969). The Afghans were a common sight in the streets of Slave Island, Pettah, Colombo Fort, and Kandy, and in the hill stations (Chandraprema, 1998; Muirhead, 1934). Their population in 1881 was just over a thousand, but by 1911, their number had plummeted to 466. Their population further slumped to 304 souls in 1921 and the census of 1946 recorded 551 Afghans, after which, there has been no mention of the 'Afghans', in any of Sri Lanka's population censuses and demographic statistics.

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Research objectives

The objectives of the study are to trace the reasons that led to the arrival and eventual settlement of Afghans in British Ceylon, to prove that Afghans were engaged in many other occupations, besides money-lending, prove that some brought along their womenfolk to Ceylondentify the tribes to which the Afghans belonged to, explore their food habits, language, culture, clothing, faith, festivities, and traditions and identify the reasons that led to their disappearance from Ceylon.

Methodology

Historical Research Methodology was employed for this study. As this is a work dealing with an extinct community, an extensive collection of primary sources (published books, manuscripts, photographs, journals, letters, diaries, oral histories, autobiographies, Government publications, census records, newspapers, and magazine clippings published between 1800 and 1940) and secondary sources, available at the National Museum Library, the National Archives and a number of other major national repositories, including digital libraries served as principle tools for this research.

Results and discussion

The history of Afghans in Colonial Ceylon can be traced back to the mid-eighteenth century when Afghan traders made regular trading voyages between Ceylon and India. In 1762, King Kirti Sri Rajasinghe of Kandy, sent to Arcot an envoy named Uduma Lebbe (alias Makandar Moodliar), son of Maula Muhandiram, to negotiate for the assistance of the British to expel the Dutch from Ceylon. In compliance with the Kandyan King's request, Muhammed Ali Khan, Nawab of Carnatic (Arcot), a close ally of the British East India Company, sent to Ceylon, two of his envoys, a Pathan (Afghan) and a Moor to confirm whether the King of Kandy required the help of the British. That same year, Governor George Pigot of Madras, sent to Ceylon an English emissary, John Pybus, accompanied by two Pathans (Afghans) and a contingent of soldiers to investigate the suitability of Ceylon as a trading base and to examine the nature of the government (Davies, 1954). They were received by King Kirti Sri Rajasinghe, who provided them with accommodation at Rammolle Adigar's manor on Nagaha vidiya (Vimalananda, 1973). After a sojourn of about forty days at Kandy, Pybus and his suite left Ceylon, without making any conclusive decision on whether or not the British would help oust the Dutch (Pybus, 1862). King Rajasinghe's efforts to receive military aid from the British, proved futile, but, the diplomatic-ties between Arcot and Ceylon continued. It should be noted that the Nawab of Arcot is, to this day, regarded the hereditary chief of the Pathans of Tamil-Nadu. A Pathan trader (inscribed as 'Pattaniya' in Sinhala) is among the sixty-three hand-painted images of men and women of the various castes, religious and ethnic groups in Ceylon, depicted in an

illustrated album made around 1830 for Mr.Wells, now held at the Victoria and Albert Museum, London. Even as far back as the 1830s, Afghans, or Pattaniya as they were popularly called, were a prominent community in Ceylon, as evinced by authors like Chitty (1834) and Barrow (1857). In the 1860s the British imported Afghans on contract terms to work as horse-keepers (grooms) and indentured labourers (mainly to build railways) in Ceylon (Manson-Bahr, 1915; Crews, 2015). They were joined by Afghan traders, called "Pathans", free migrants from British India who came to serve the economic needs of the indentured labourers and to capitalize on the economic opportunities in Ceylon. Many of the stagecoaches, post-chaises, and carriers' wagons were driven by the Afghans, some of whom were employed as coachmen, footmen, and postilions on state coaches, as depicted in the illustration of the reception of the Czarevitch at Colombo (1891). The popularization of passenger Railways and the advent of rickshaws (1893), pedal bicycles (1896), and electric-tram-ways (1900), resulted in Afghan coachmen and hostlers losing their source of livelihood. For many, it meant taking on other jobs. Many resorted to peddling; others found employment as guards in the plantations, offices, and in private homes (Mahroof, 1986; Muirhead, 1934; Wright, 1907). They were also employed as porters and some were absorbed into Ceylon's postal service (Shukri, 1986). According to Henry W. Cave (1904), Afghans were involved in supplying elephants to the courts of the Rajas in India. They were allowed to do this upon paying the Ceylon Government ten rupees for each elephant captured, and royalty of two hundred rupees for each one exported (ibid. p.138). Some returned to their homeland after the end of their contracts, a few migrated elsewhere and others chose to stay. Gool Mohomet from Smilekenerra near Kabul, worked initially in Colombo, before moving to Australia (Fairweather, 2018). Likewise, an Afghan Cameleer Muhammed Saleh, identified as 'Cinghalese' by Jones and Kenny (2010), who contributed to the costs of the Perth Mosque, hailed from Ceylon. By the turn of the twentieth century, almost all Afghans in Ceylon had become full-time usurers, lending money on the security of promissory notes and IOU (document acknowledging debt). According to the Census of 1921, there were 304 Afghans, 145 Pathans, and 164 Baluchis in Ceylon, while that of 1946 recorded 551 Afghans and 51 Baluchis. Based on the census records, it is evident that the British in Ceylon didn't wholly understand the ethnic/tribal make-up of the 'Afghan money-lenders and traders'. The ethnonyms Afghan, Pashtuns, Pakhtuns, Pathans and Pakhtoons, all refer to the same people, and the Baluchis/Baloch people from historic Baluchistan were ethno culturally different to that of the Afghans. The Pashtuns in Ceylon belonged to numerous tribes, viz. Afridi, Yousufzai, Durrani, Ahmedzai, Kakkar, Khattar, Ghilji, Barakzai, etc. Likewise, the Baluchis too belonged to a surfeit of tribes. Besides Pashto, Dari and Balochi, the Afghans were also fluent in Urdu, Sinhala, Tamil, and Sri Lankan Malay and they used the Persio-Arabic script for writing. According to the Church Missionary Review of 1898, there were ten female

Afghans living in Colombo, thenceforth many other censuses have recorded Afghan females in Ceylon. The patroness saint of Wekanda mosque, Ossen bee, was also an Afghan. As most Afghans had not brought their womenfolk with them, they married local women and established firm roots in Ceylon. Some even shed their own mores and completely integrated into their wives' communities (Shukri, 1986). Besides usury, the Afghans were also known for their distinctive garb, which consisted of baggy white trousers, shalwar or partug, and a knee-length upper tunic called a kameeze/ perahan/ Khet, over which they wore a very ornate looking jacket (Cave, 1908; Gilmer and Simpson, 1940). Their heads were swathed in exotic turbans and their feet were clad in military boots and they always carried with them a truncheon, to warn their welshers of the wrath to come (Bassett, 1929; Campbell, 1945; Wright, 1907). Their compelling physique also caught much attention among the Ceylonese. There was scarcely one among them who was not six feet high and virtually all had hawked noses, light eyes, long visages, thick beards, and well proportioned, muscular frames (De Silva 2006; Gilles, 1948; Paul, 2002; Pidgeon, 1883). Their typical meal comprised of naan bread, rice, meat, poultry, a variety of vegetable dishes and salads. Tomatoes, Yoghurt, dried fruits, legumes, nuts, and spices were used extensively in their cuisine. The Afghans lived in chummeries or 'Havelis', which were divided into three portions, the front was the living room; the center for sleeping, and the rear for kitchen and bathroom, all partitioned by batwing doors. In the 1930s it was suggested that the Slave Island Quarter, which had a substantial population of Afghans, be renamed 'Afghan Town', but to no avail. The majority of Afghans in Ceylon were Sunni Muslims who followed the Hanafi jurisprudence, while others practiced Sufism (Islamic mysticism). The Hanafi (Red) Mosque on Castle Street, Kandy, and the mosque on Shorts Road, Colombo were built upon the contributions made by the Afghans and Moors. During Eid festivals and Nowruz the Afghans gathered together on Galle-face esplanade for their worship, after which they indulged in wrestling (Pahlawani), dancing (Attan), draughts (daam), cockfighting, goat pulling (buzkashi), and egg pacqueing (Bassett, 1929; Dep, 1969). They had their own chiefs, who settled disputes through the 'Jirga' (assembly) system. The Afghans in Ceylon, just like their counterparts in Afghanistan and British India, were famed for their hospitality (melmastia), loyalty, and love of family and community. They also maintained close ties with their ancestral homeland. When the Anglo-Afghan war broke out, it was rumoured that the Afghans in Ceylon were being drilled and sent back to Afghanistan to fight the British (Dep, 1969). In February 1948, when Pakistan's Minister Abdur Rab Nishtar visited Ceylon, he was presented with a generous sum of two thousand Rupees for the Quaid-i-Azam Relief Fund by the Ceylon Pathan (Afghan) Association in Kandy (Zaidi, 1993). Their mean of livelihood was sharply curtailed by the money lending ordinance of 1918. Unfettered by the legislative enactment, the Afghans continued their business. Some fled to the highlands, as it seemed difficult to carry on

their business in major cities. Then in 1931, the State Mortgage Bank was instituted, which was soon followed by the Income Tax Ordinance of 1932, the Estate Duty Ordinance No 1 of 1938, and in 1939, the Bank of Ceylon was founded. In 1943, the Agricultural and Industrial Credit Corporation of Ceylon was instituted. The enactments and state-owned enterprises severely impacted the Afghan's livelihood. The Citizenship Act No 18 of 1948 made most Afghans 'Stateless' and those who didn't possess the necessary documents were forcibly repatriated. Their plight was further worsened by the Indian and Pakistani Residents Act No 3 of 1949. The Finance Act No 11 of 1963 which forbade any foreigner from indulging in money-lending or pawn-broking, was a major blow to the Afghans, who were left no other choice but to leave the country. By the early 1970s, almost all the Afghans had left Ceylon.

Conclusion

From the aforementioned details, it is evident that the Afghans first arrived as traders in the early 19th Century. From 1860 until the 1890s, their numbers grew exponentially, due to the importation of Afghan horse-keepers and indentured labourers by the British. Though many gained considerable notoriety as money-lenders, they were also engaged in numerous other occupations, as evinced by this research. This research also affirms that there were Afghan ladies in Ceylon and it also sheds light on Afghan culture, language, clothing, cuisine, and tribes. Migration back then was very different from what we understand today, as it was a time when people travelled without passports, mainly on trade, lucrative and adventurous reasons. No entry visas were issued upon their arrival and most Afghans didn't possess any document to prove their birth, marriage, or immigration. Hence many were made stateless by the citizenship act of 1948 and subsequently repatriated.

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Living arrangement and wellbeing of elderly females in Kerala, India

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Geo-spatiotemporal data integration platform for social good and global citizenship: A case study on identify environmental impacts on public health

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National Transfer Account in Maldives – The future of work in Maldives

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Why low birth weight matters in the case of Sri Lanka: Evidence from Demographic and Health Survey-2016

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Prevalence of mental disorder cases in Sri Lanka

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Impact of chronic kidney disease of unknown etiology (CKDu) on patients: Based on CKDu patients of Rajanganaya Track 11 Hospital

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The Malay community of Sri Lanka: A preliminary analysis of the decline in the population between 1981 and 2012

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A sociological study on the discrimination experienced by transgender individuals when accessing public health services

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Knowledge on contraceptive-use of conceived rural women in the second reproductive age span (35-49 age group): A case study of Kuruwita Medical Officer of Health area in Ratnapura District

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Causes of poverty among elderly people living alone

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Low female labour force participation in Sri Lanka

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Non communicable diseases among male inmates and associated factors: A case study of inmates between 30-50 years at Mahara Prison

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Characteristics of aging population in Sri Lanka and its economic implications

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A sociological study on Alzheimer's disease related stigma in society and its effect on family members caring for the elderly person with the disease

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Hypertension and behavioural risk factors of the elderly population: A self-reported case control study of elders in Colombo district

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The impact of sexual orientation on day to day life among sexual minorities: issues and challenges faced by gay men in Sri Lanka

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Study on the push and pull motivation of direct labour-force participation in the Sri Lankan tourism industry

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Attitudes towards physical activities among ageing population: A special reference to Kirillawala – West Grama Niladhari Division

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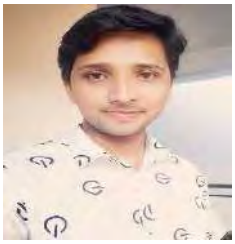
Identifying the socio-economic challenges faced by elderly women workers in the cleaning service: A case study related to the Faculty of Arts, University of Colombo



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Impact of child care and housework on employed women during the work from home situation in COVID-19 outbreak: Literature-based study

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Post flood disaster management related issues: A case study of Bulathsinhala Divisional Secretariat Division

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Utilization of human population as a resource in flood disaster management of Kolonnawa Divisional Secretariat Division

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Prevalence of menopausal symptoms: Issues and challenges faced by the post-menopausal women live in urban underserved settlements, Colombo

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Exploring the trends and pattern of illegal migration in Sri Lanka: Challenges for sustainable development goals

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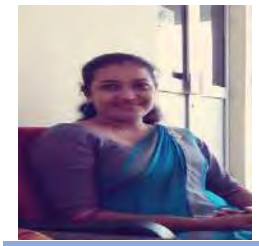
Patterns and characteristics of youth migration for employment from the Estate Sector, Sri Lanka



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Identification of causes and effects of drug usage in Kuchchaveli DSD of Trincomalee District

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