IMPACT OF COVID-19 PANDEMIC ON MENTAL HEALTH OF HOUSEWIVES IN MAYURBHANJ DISTRICT,ODISHA – A CROSS-SECTIONAL STUDY

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SUBMITTED BY

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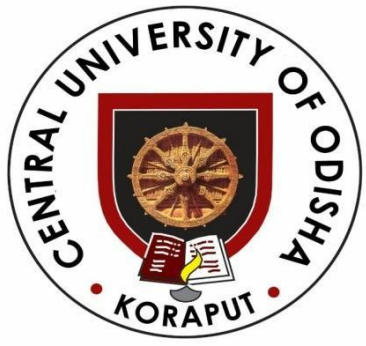

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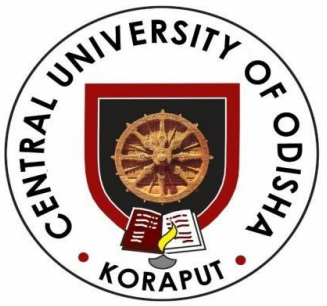

CERTIFICATE

This is to certify that the dissertation entitled **"IMPACT OF COVID-19 PANDEMIC ON MENTAL HEALTH OF HOUSEWIVES IN MAYURBHANJ DISTRICT,ODISHA"** submitted by Prana Krushna Giri(Enrollment No-19/07/DSTAT/19) in partial fulfillment of requirements for the award of Master of Science in Statistics is a bonafide work carried out by him by my supervision. I consider that the dissertation has reached the standards and fulfilling the requirements of the rules and regulations relating to the nature of the degree. The dissertation has not been submitted previously in part or in full to this or another University or Institution for the award of any degree or diploma.

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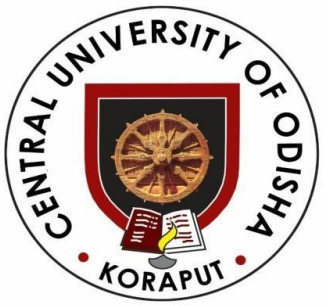

DECLARATION

I certify that the work contained in this dissertation is original and has been done by me under the supervision of my mentor Mr. Suman Dash, Lecturer, Department of Statistics, Central University of Orissa. This work is submitted to Department of Statistics, Central University of Orissa as a project report, as per the requirement of partial fulfilled for the award of degree Master of Science in Statistics. This work or similar title, has not been previously submitted for any academic purpose.

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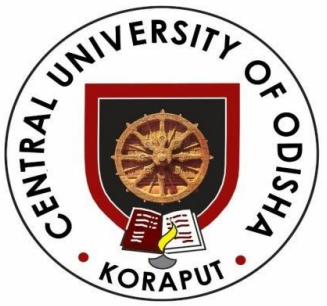

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ABSTRACT

Introduction: The recent pandemic of corona-virus disease-19 caused by newly discovered corona-virus has affected the mental health of the individuals and brought a significant change in their lives. Hence, the present study was planned to assess the impact of this pandemic among housewives. **Materials and Methods:** A cross-sectional online survey was conducted among housewives using Google forms from June 1,2021 to June 20, 2021. After taking informed consent, their demographic characteristics, level of depression, anxiety, and stress were assessed using Depression Anxiety and Stress Scale-21 (DASS-21) score. Questionnaire was also included to see the practices adopted by housewives during this pandemic. Data management and analysis was performed using Microsoft Excel and SPSS. **Results:** Out of total 231 housewives, 28.1% were in between 18-30 years, 42.9% were between 31-45 years and 29% were in between 46-70 years of age. According to DASS- 21 score; depression, anxiety, and stress were present in 18.2%, 22.9%, and 25.9% of the participants, respectively. About 44.6% were send someone to buying vegetables/fruits from sellers, of which nearly, 14.3% were ordering to deliver things at home and 41.1% were going out to buy. About 39% were keeping them aside for 5-6 hour and 56.2% were washing them with water only. Some (11.7%, 28.8% each) were using detergent and salt along with water. More than 45% were washing hands on coming from outside and almost all (100%) were using mask. **Conclusion:** On statistical analysis, it was observed that age was significantly associated with Depression ($P = 0.002$) while it has no effect on the anxiety and stress. It was also found that stress ($P = 0.002$) and anxiety ($P = 0.034$) were significantly higher among housewives according to the social-economic status.

Key words: Anxiety, corona-virus disease-19, depression, housewives, practices, stress

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1. INTRODUCTION

1.1 CORONA VIRUS

Corona virus disease (COVID-19) is an infectious disease caused by a newly discovered corona virus. The name ‘corona virus’ is derived from the Latin ‘corona’, meaning "crown" or "halo", which refers to the characteristic appearance reminiscent of a crown or a solar corona around the virions (virus particles) when viewed under two-dimensional transmission electron microscopy, due to the surface being covered in club-shaped protein spikes.[1]

1.1.1 Discovery

Corona viruses were first discovered in the 1930s when an acute respiratory infection of domesticated chickens was shown to be caused by infectious bronchitis virus (IBV). In the 1940s, two more animal corona viruses, mouse hepatitis virus (MHV) and transmissible gastroenteritis virus (TGEV), were isolated.

Human corona viruses were discovered in the 1960s. The earliest ones studied were from human patients with the common cold, which were later named human corona-virus 229E and human corona virus OC43. Other human corona-viruses have since been identified, including SARS-CoV in 2003, HCoV NL63 in 2004, HKU1 in 2005, MERS-CoV in 2012, and SARS-CoV-2 in 2019. Most of these have involved serious respiratory tract infections.

1.1.2 Symptoms

People may experience:

- cough
- fever
- tiredness
- difficulty breathing (severe cases)

People may be sick with the virus for 1 to 14 days before developing symptoms. The most common symptoms of corona virus disease (COVID-19) are fever, tiredness, and dry cough. Most people (about 80%) recover from the disease without needing special treatment.

More rarely, the disease can be serious and even fatal. Older people, and people with other medical conditions (such as asthma, diabetes, or heart disease), may be more vulnerable to becoming severely ill.

1.1.3 Causes of Corona Virus

Humans first get a corona virus from contact with animals. Then, it can spread from human to human. Health officials do not know what animal caused COVID-19.

The COVID-19 virus can be spread through contact with certain bodily fluids, such as droplets in a cough. It might also be caused by touching something an infected person has touched and then touching your hand to your mouth, nose, or eyes.

1.2 MENTAL HEALTH

Mental health, defined by the World Health Organization (WHO), is "a state of well-being in which the individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community". According to WHO, mental health includes "subjective well-being, perceived self-efficacy, autonomy, competence, intergenerational dependence, and self-actualization of one's intellectual and emotional potential, among others". From the perspectives of positive psychology or of holism, mental health may include an individual's ability to enjoy life and to create a balance between life activities and efforts to achieve psychological resilience. Cultural differences, subjective assessments, and competing professional theories all affect how one defines "mental health".[2]

1.2.1 Mental health and Mental disorders

Mental health, as defined by the Public Health Agency of Canada, is an individual's capacity to feel, think, and act in ways to achieve a better quality of life whilst respecting the personal, social, and cultural boundaries. Impairment of any of these is a risk factor for mental disorders, which are components of mental health. Mental disorders are defined as the health conditions that affect and alters cognitive functioning, emotional responses, and behaviour associated with distress and/or impaired functioning. The DASS-21 is used as a classification system of various mental disorders.

Mental health is associated with a number of lifestyle factors such as diet, exercise, stress, drug abuse, social connections and interactions. Therapists, psychiatrists, psychologists, social workers, nurse practitioners, or family physicians can help manage mental illness with treatments such as therapy, counselling or medication.

1.2.2 History

In the mid-19th century, William Sweetser was the first to coin the term mental hygiene, which can be seen as the precursor to contemporary approaches to work on promoting positive mental health. Isaac Ray, the fourth president of the American Psychiatric Association and one of its founders, further defined mental hygiene as "the art of preserving the mind against all incidents and influences calculated to deteriorate its qualities, impair its energies, or derange its movements".

In American history, mentally ill patients were thought to be religiously punished. This response persisted through the 1700s, along with inhumane confinement and stigmatization of such individuals. Dorothea Dix (1802–1887) was an important figure in the development of the "mental hygiene" movement. Dix was a school teacher who endeavored to help people with mental disorders and to expose the sub-standard conditions into which they were put. This became known as the "mental hygiene movement". Before this movement, it was not uncommon that people affected by mental illness would be considerably neglected, often left alone in deplorable conditions without sufficient clothing. From 1840-1880, she won over the support of the federal government to set up over 30 state psychiatric hospitals; however, they were understaffed, under-resourced, and were accused of violating human rights.

Emil Kraepelin in 1896 developed the taxonomy of mental disorders which has dominated the field for nearly 80 years. Later, the proposed disease model of abnormality was subjected to analysis and considered normality to be relative to the physical, geographical and cultural aspects of the defining group.

At the beginning of the 20th century, Clifford Beers founded "Mental Health America – National Committee for Mental Hygiene", after publication of his accounts as a patient in several lunatic asylums, A Mind That Found Itself, in 1908 and opened the first outpatient mental health clinic in the United States.

The mental hygiene movement, similar to the social hygiene movement, had at times been

associated with advocating eugenics and sterilisation of those considered too mentally deficient to be assisted into productive work and contented family life. In the post-WWII years, references to mental hygiene were gradually replaced by the term 'mental health' due to its positive aspect that evolves from the treatment of illness to preventive and promotive areas of healthcare.

1.2.3 Demographics

Children and young adults

Mental health conditions are 16% of the global burden of disease and injury in people aged 10-19 years. Half of all mental health conditions start by 14 years of age but most cases go undetected and untreated. Depression is one of the leading causes of illness and disability among adolescents. Suicide is the fourth leading cause of death in 15-19 year olds. Exposure to childhood trauma can cause mental health disorder and poor academic achievement.

Ignoring mental health conditions in adolescets can impact adulthood. 50% of preschool children show a natural reduction in behavioral problems. The remaining experience long-term consequences. It impairs physical and mental health and limits opportunities to live fulfilling lives. A result of depression during adolescence and adulthood may be substance abuse. The average age of onset is between 11 and 14 years for depressive disorders. Only approximately 25% of children with behavioral problems refer to medical services. The majority of children go untreated.

The homeless population

Mental illness is not only prevalent among children and young adults but also the homeless. Mental illness is thought to be extremely prevalent among homeless populations, though access to proper diagnoses is limited. In an article written by Lisa Godman and her colleagues, they reference Smith's research on the prevalence of PTSD among homeless people. His research stated, "Homelessness itself is a risk factor for emotional disorder." What this quote is saying is that being homeless itself can cause the emotional disorder. Without looking for other reasons for emotional disorder and really looking at the simple fact that an individual is homeless can cause the emotional disorder. Godman's article stated "Recently, Smith (1991) investigated the prevalence of PTSD among a sample of 300 randomly selected homeless single women and mothers in St. Louis, Missouri. Using the Diagnostic Interview Schedule (DIS; Robins, 1981; Robins & Helzer, 1984), she found that 53% of the respondents could be diagnosed as exhibiting full-blown cases of PTSD." As the source explains, the conclusion that was drawn from Smith's investigation after studying 300 homeless individuals is that 53% of those people were eligible to be diagnosed with PTSD. She continues and states: "In addition, data from clinical observations, self-reports, and empirical studies suggest that at least two commonly reported symptoms of psychological trauma, social disaffiliation and learned helplessness are highly prevalent among homeless individuals and families." Other data were able to prove that PTSD and learned helplessness were two symptoms that were very much present among homeless individuals and families. The question would be how are these people being helped. This is evident that mental health among the homeless is an issue existing but barely touched. In another article by Stephen W. Hwang and Rochelle E Garner, they talk about the ways that the homeless are getting actually getting help. It states "For homeless people with mental illness, case management linked to other services was effective in improving psychiatric symptoms, and assertive case management was effective in decreasing psychiatric hospitalizations and increasing outpatient contacts. For homeless people with substance use problems, case management resulted in greater decreases in substance use than did usual care." The question would be how are these people being helped. As the source explained, case management provided by services helped improve psychiatric symptoms. It also caused a decrease in substance use than usual media care.

Immigrants and refugees

States that produce refugees are sites of social upheaval, civil war, even genocide. Most refugees experience trauma. It can be in the form of torture, sexual assault, family fragmentation, and death of loved ones.

Refugees and immigrants experience psychosocial stressors after resettlement. These include discrimination, lack of economic stability, and social isolation causing emotional distress. For refugees family reunification can be one of the primary needs to improve quality of life. Post-migration trauma is a cause of depressive disorders and psychological distress for immigrants.

Cultural and religious considerations

Mental health is a socially constructed and socially defined concept; that is, different societies, groups, cultures, institutions, and professions have very different ways of conceptualizing its nature and causes, determining what is mentally healthy, and deciding what interventions, if any, are appropriate. Thus, different professionals will have different cultural, class, political and religious backgrounds, which will impact the methodology applied during treatment. In the context of deaf mental health care, it is necessary for professionals to have cultural competency of deaf and hard of hearing people and to understand how to properly rely on trained, qualified, and certified interpreters when working with culturally Deaf clients.

Research has shown that there is stigma attached to mental illness. Due to such stigma, individuals may resist 'labeling' and may be driven to respond to mental health diagnoses with denialism. Family caregivers of individuals with mental disorders may also suffer discrimination or face stigma.

Addressing and eliminating the social stigma and perceived stigma attached to mental illness has been recognized as crucial to education and awareness surrounding mental health issues. In the United Kingdom, the Royal College of Psychiatrists organized the campaign Changing Minds (1998–2003) to help reduce stigma, while in the United States, efforts by entities such as the Born This Way Foundation and The Manic Monologues specifically focus on removing the stigma surrounding mental illness. The National Alliance on Mental Illness is a U.S. institution founded in 1979 to represent and advocate for those struggling with mental health issues. NAMI helps to educate about mental illnesses and health issues, while also working to eliminate stigma attached to these disorders.

Many mental health professionals are beginning to, or already understand, the importance of competency in religious diversity and spirituality. They are also partaking in cultural training to better understand which interventions work best for these different groups of people. The American Psychological Association explicitly states that religion must be respected. Education in spiritual and religious matters is also required by the American Psychiatric Association, however, far less attention is paid to the damage that more rigid, fundamentalist faiths commonly practiced in the United States can cause. This theme has been widely politicized in 2018 such as with the creation of the Religious Liberty Task Force in July of that year. Also, many providers and practitioners in the United States are only beginning to realize that the institution of mental healthcare lacks knowledge and competence of many non-Western cultures, leaving providers in the United States ill-equipped to treat patients from different cultures.

1.2.4 Mental health and occupations

Mental health in social work

Social work in mental health, also called psychiatric social work, is a process where an individual in a setting is helped to attain freedom from overlapping internal and external problems (social and economic situations, family and other relationships, the physical and organizational environment, psychiatric symptoms, etc.). It aims for harmony, quality of life, self-actualization and personal adaptation across all systems. Psychiatric social workers are mental health professionals that can assist patients and their family members in coping with both mental health issues and various

economic or social problems caused by mental illness or psychiatric dysfunctions and to attain improved mental health and well-being. They are vital members of the treatment teams in Departments of Psychiatry and Behavioral Sciences in hospitals. They are employed in both outpatient and inpatient settings of a hospital, nursing homes, state and local governments, substance use clinics, correctional facilities, health care services...etc.

In the United States, social workers provide most of the mental health services. According to government sources, 60 percent of mental health professionals are clinically trained social workers, 10 percent are psychiatrists, 23 percent are psychologists, and 5 percent are psychiatric nurses.

Mental health social workers in Japan have professional knowledge of health and welfare and skills essential for person's well-being. Their social work training enables them as a professional to carry out Consultation assistance for mental disabilities and their social reintegration; Consultation regarding the rehabilitation of the victims; Advice and guidance for post-discharge residence and re-employment after hospitalized care, for major life events in regular life, money and self-management and other relevant matters to equip them to adapt in daily life. Social workers provide individual home visits for mentally ill and do welfare services available, with specialized training a range of procedural services are coordinated for home, workplace and school. In an administrative relationship, Psychiatric social workers provides consultation, leadership, conflict management and work direction. Psychiatric social workers who provides assessment and psychosocial interventions function as a clinician, counselor and municipal staff of the health centers.

1.2.5 Factors affecting mental health

Economic factors

Unemployment has been shown to hurt an individual's emotional well-being, self-esteem, and more broadly their mental health. Increasing unemployment has been shown to have a significant impact on mental health, predominantly depressive disorders. This is an important consideration when reviewing the triggers for mental health disorders in any population survey.

Emotional mental disorders are a leading cause of disabilities worldwide. Investigating the degree and severity of untreated emotional mental disorders throughout the world is a top priority of the World Mental Health (WMH) survey initiative, which was created in 1998 by the World Health Organization (WHO). "Neuropsychiatric disorders are the leading causes of disability worldwide, accounting for 37% of all healthy life years lost through disease.These disorders are most destructive to low and middle-income countries due to their inability to provide their citizens with proper aid. Despite modern treatment and rehabilitation for emotional mental health disorders, "even economically advantaged societies have competing priorities and budgetary constraints".

The World Mental Health survey initiative has suggested a plan for countries to redesign their mental health care systems to best allocate resources. "A first step is documentation of services being used and the extent and nature of unmet treatment needs. A second step could be to do a cross-national comparison of service use and unmet needs in countries with different mental health care systems. Such comparisons can help to uncover optimum financing, national policies, and delivery systems for mental health care."

Stress

The Centre for Addiction and Mental Health discuss how a certain amount of stress is a normal part of daily life. Small doses of stress help people meet deadlines, be prepared for presentations, be productive and arrive on time for important events. However, long-term stress can become harmful. When stress becomes overwhelming and prolonged, the risks for mental health problems and medical problems increase." Also on that note, some studies have found language to deteriorate mental health and even harm humans.

1.2.6 Mental health protection and promotion

"The terms mental health promotion and prevention have often been confused. Promotion is defined as intervening to optimize positive mental health by addressing determinants of positive mental health (i.e. protective factors) before a specific mental health problem has been identified, with the ultimate goal of improving the positive mental health of the population. Mental health prevention is defined as intervening to minimize mental health problems (i.e. risk factors) by addressing determinants of mental health problems before a specific mental health problem has been identified in the individual, group, or population of focus with the ultimate goal of reducing the number of future mental health problems in the population."

In order to improve your emotional mental health, the root of the issue has to be resolved. "Prevention emphasizes the avoidance of risk factors; promotion aims to enhance an individual's ability to achieve a positive sense of self-esteem, mastery, well-being, and social inclusion." Mental health promotion attempts to increase protective factors and healthy behaviors that can help prevent the onset of a diagnosable mental disorder and reduce risk factors that can lead to the development of a mental disorder. It is very important to improve your emotional mental health by surrounding yourself with positive relationships. We as humans feed off companionships and interactions with other people. Another way to improve your emotional mental health is by participating in activities that can allow you to relax and take time for yourself. Yoga is a great example of an activity that calms your entire body and nerves. According to a study on well-being by Richards, Campania, and Muse-Burke, "mindfulness is considered to be a purposeful state, it may be that those who practice it belief in its importance and value being mindful, so that valuing of self-care activities may influence the intentional component of mindfulness."

Mental health is conventionally defined as a hybrid of absence of a mental disorder and the presence of well-being. Focus is increasing on preventing mental disorders. Prevention is beginning to appear in mental health strategies, including the 2004 WHO report "Prevention of Mental Disorders", the 2008 EU "Pact for Mental Health" and the 2011 US National Prevention Strategy. Some commentators have argued that a pragmatic and practical approach to mental disorder prevention at work would be to treat it the same way as physical injury prevention.

Prevention of a disorder at a young age may significantly decrease the chances that a child will suffer from a disorder later in life, and shall be the most efficient and effective measure from a public health perspective. Prevention may require the regular consultation of a physician for at least twice a year to detect any signs that reveal any mental health concerns. Similar to mandated health screenings, bills across the U.S. are being introduced to require mental health screenings for students attending public schools. Supporters of these bills hope to diagnose mental illnesses such as anxiety and depression to prevent self-harm and any harm induced on other students.

Additionally, social media is becoming a resource for prevention. In 2004, the Mental Health Services Act began to fund marketing initiatives to educate the public on mental health. This California-based project is working to combat the negative perception with mental health and reduce the stigma associated with it. While social media can benefit mental health, it can also lead to deterioration if not managed properly. Limiting social media intake is beneficial.

1.2.7 Care navigation

Mental health care navigation helps to guide patients and families through the fragmented, often confusing mental health industries. Care navigators work closely with patients and families through discussion and collaboration to provide information on best therapies as well as referrals to practitioners and facilities specializing in particular forms of emotional improvement. The difference between therapy and care navigation is that the care navigation process provides information and directs patients to therapy rather than providing therapy. Still, care navigators may offer diagnosis and treatment planning. Though many care navigators are also trained therapists and doctors. Care navigation is the link between the patient and the below therapies. A clear recognition that mental health requires medical intervention was demonstrated in a study by Kessler et al. of the prevalence

and treatment of mental disorders from 1990 to 2003 in the United States. Despite the prevalence of mental health disorders remaining unchanged during this period, the number of patients seeking treatment for mental disorders increased threefold.

1.2.8 Promoting and improving mental health

Pharmacotherapy

Pharmacotherapy is a therapy that uses pharmaceutical drugs. Pharmacotherapy is used in the treatment of mental illness through the use of antidepressants, benzodiazepines, and the use of elements such as lithium. It can only be prescribed by a medical professional trained in the field of Psychiatry.

Physical activity

For some people, physical exercise can improve mental as well as physical health. Playing sports, walking, cycling, or doing any form of physical activity trigger the production of various hormones, sometimes including endorphins, which can elevate a person's mood.

Studies have shown that in some cases, physical activity can have the same impact as anti-depressants when treating depression and anxiety.

Moreover, cessation of physical exercise may have adverse effects on some mental health conditions, such as depression and anxiety. This could lead to many different negative outcomes such as obesity, skewed body image, lower levels of certain hormones, and many more health risks associated with mental illnesses.

Activity therapies

Activity therapies also called recreation therapy and occupational therapy, promote healing through active engagement. An example of occupational therapy would be promoting an activity that improves daily life, such as self-care or improving hobbies. Similarly, recreational therapy focuses on movement, such as walking, yoga, or riding a bike.

Each of these therapies have proven to improve mental health and have resulted in healthier, happier individuals. In recent years, for example, coloring has been recognized as an activity that has been proven to significantly lower the levels of depressive symptoms and anxiety in many studies.

Expressive therapies

Expressive therapies or creative arts therapies are a form of psychotherapy that involves the arts or art-making. These therapies include art therapy, music therapy, drama therapy, dance therapy, and poetry therapy. It has been proven that Music therapy is an effective way of helping people who suffer from a mental health disorder. Dramatherapy is approved by NICE for the treatment of psychosis.

Psychotherapy

Psychotherapy is the general term for the scientific based treatment of mental health issues based on modern medicine. It includes a number of schools, such as gestalt therapy, psycho-analysis, cognitive behavioral therapy, psychedelic therapy, transpersonal psychology/ psychotherapy, and dialectical behavioral therapy. Group therapy involves any type of therapy that takes place in a setting involving multiple people. It can include psychodynamic groups, expressive therapy groups, support groups (including the Twelve-step program), problem-solving and psycho-education groups.

Self-compassion

According to Neff, self-compassion consists of three main positive components and their negative counterparts: Self-Kindness versus Self-Judgement, Common Humanity versus Isolation and Mindfulness versus Over-Identification. Furthermore, there is evidence from a study by Shin & Lin suggesting specific components of self-compassion can predict specific dimensions of positive mental health (emotional, social, & psychological well-being).

Social-Emotional Learning

The Callaborative for academic, social, emotional learning (CASEL) addresses five broad and interrelated areas of competence and highlights examples for each: self-awareness, self-management, social awareness, relationship skills, and responsible decision-making. A meta-analysis was done by Alexendru Boncu, Iuliana Costeau, & Mihaela Minulescu (2017) looking at Social-emotional learning (SEL) studies and the effects on emotional and behaviour outcomes. They found a small but significant effect size (across the studies looked into) for externalized problems and social-emotional skills.

Meditation

The practice of mindfulness meditation has several mental health benefits, such as bringing about reductions in depression, anxiety and stress. Mindfulness meditation may also be effective in treating substance use disorders. Further, mindfulness meditation appears to bring about favorable structural changes in the brain.

The Heartfulness meditation program has proven to show significant improvements in the state of mind of health-care professionals. A study posted on the US National Library of Medicine showed that these professionals of varied stress levels were able to improve their conditions after this meditation program was conducted. They benefited in aspects of burnouts and emotional wellness.

People with anxiety disorders participated in a stress-reduction program conducted by researchers from the Mental Health Service Line at the W.G. Hefner Veterans Affairs Medical Center in Salisbury, North Carolina. The participants practiced mindfulness meditation. After the study was over, it was concluded that the "mindfulness meditation training program can effectively reduce symptoms of anxiety and panic and can help maintain these reductions in patients with generalized anxiety disorder, panic disorder, or panic disorder with agoraphobia."

Mental fitness

Mental fitness is a mental health movement that encourages people to intentionally regulate and maintain their emotional wellbeing through friendship, regular human contact, and activities that include meditation, calming exercises, aerobic exercise, mindfulness, having a routine and maintaining adequate sleep. Mental fitness is intended to build resilience against every-day mental health challenges to prevent an escalation of anxiety, depression and suicidal ideation, and help them cope with the escalation of those feelings if they occur.

Spiritual counseling

Spiritual counsellors meet with people in need to offer comfort and support and to help them gain a better understanding of their issues and develop a problem-solving relation with spirituality. These types of counselors deliver care based on spiritual, psychological and theological principles.

1.3 IMPACT OF COVID-19 PANDEMIC ON MENTAL HEALTH OF HOUSE-WIVES IN MAYURBHANJ DISTRICT–A CROSS-SECTIONAL STUDY

Recently India facing corona-virus disease (COVID)-19, a disease caused by an unknown virus. The new virus and the disease, both are new and unknown before the outbreak occurred in Wuhan, China, in December 2019.[3] This outbreak of a novel Covid, COVID-19, was declared as the Public Health Emergency of international concern by the World Health Organization (WHO) in January 2020.[4]

The Corona-virus (2019-nCoV) outbreak has now spread to many countries around the global, with the number of confirmed cases increasing day by day.[5] According to Worldometers report the number of cases is 179,075,030[6] and death case is 3,877,769.[7] Similarly in India the cases is 29,911,240 and death case is 387,161 respectively.[6][7]

To slow down the spread of the virus there is support of efforts, we have brought some significant changes to our daily lives in the form of restricted movements and using other preventive measures.[8] The most important and effective preventive measure for COVID 19 are keeping social distance, using masks and hand sanitizing.

In some of the recent pandemics (severe acute respiratory syndrome and Middle East respiratory syndrome), it has been observed that more extreme forms of social distancing such as isolation and quarantine have resulted in serious symptoms of anxiety, post-traumatic stress disorder, and depression.[9] An increase in symptoms of depression and anxiety in a number of countries are already reported in different countries. A study in Ethiopia, in April 2020, reported a three-fold increase in the prevalence of symptoms of depression compared to estimates from Ethiopia before the epidemic.[10]

India announced an initial 3-week lockdown period on March 24, 2020 and still continuing in 2021. People are unaware that when this lockdown will end which has caused enormous uncertainties in people's minds, and their worries are resulting in anxiety. Groups particularly at risk are women, aged persons, and people with pre-existing mental illnesses. The "work" burden for the housewives has increased many times. A situation made more difficult to manage without the usual household help – the cook and domestic helper.[11]

One of the ways in which the pandemic has affected women differently than men through increased burden of unpaid work. Owing to the sexual division of labour, and gendered roles and social norms of performing domestic and care work in a household, the burden of unpaid work falls disproportionately on women. Such tasks are time-consuming and physically tiring, and subject women to time poverty, leaving little or no time for them to undertake productive activities like education or employment, or leisure. The pandemic has worked to exacerbate the already existing gendered nature of unpaid work at home.[12][13] With the lack of services of domestic workers, the need to perform unpaid chores like cooking, cleaning, washing, child care among others by household members has increased in this pandemic period.[14]

There is paucity of research on impact of COVID-19 pandemic among housewives. And to identify the effect of age and education of participants on depression, anxiety, and stress. Also observing the effect of Educational status on the mental health of participants. Hence, the present study was planned to assess the effect of present scenario on mental health and practices among housewives in this lockdown time.

2. MATERIAL AND METHODS

This study was designed during the outbreak of CoV infection in Mayurbhanj District, Odisha to elucidate the psychological well-being of housewives and to assess the preventive measures and the practices concerning the pandemic. This was a cross-sectional, observational study. Because of the lockdown due to COVID-19 pandemic, it was not feasible to do a community-based sampling survey, so an online semi-structured questionnaire was developed using Google forms. The link of the questionnaire was sent through emails and WhatsApp to all the house wives. This link was further forwarded to the other house wives apart from the first point of contact and so on. Housewives in the age group of 18 and above, who were able to understand English and had access to the internet could participate in the study. On receiving and clicking on the link the participants got auto directed to the information about the study. After filling the informed consent they could fill the questionnaire. The data collection was initiated on June 1, 2021, and ended on June 20, 2021. A pilot study was undertaken with ten respondents; the questionnaire and its components were discussed with these respondents to determine whether they found any aspect of the questionnaire difficult. After minor revisions, the final questionnaire was used for the survey.

The structured questionnaire included three parts. The First part included the Name of the Participants, mobile No. And Block. The Second part comprised demographic characteristics of the participants such as age, martial status, caste, number of family members, Residence area type, social-economical status and education. The Third section included the items of the Depression Anxiety and Stress Scale- 21 (DASS-21). This scale was developed by Lovibond and Lovibond (1995) and has been used to screen for symptoms at different levels of depression, anxiety, and stress. The DASS-21 questionnaire had a total of 21 questions; seven questions each pertaining to depression, anxiety, and stress. The grading of the scale is as given below.

Rating	Depression #1	Anxiety #2	Stress #3
Normal	0–9	0–7	0–14
Mild	10–13	8–9	15–18
Moderate	14–20	10–14	19–25
Severe	21–27	15–19	26–33
Extremely severe	28+	20+	37+

The third section of the pro forma included questionnaire regarding the practices of housewives during the pandemic of the nCoV.

A total of 231 responses from housewives were collected during the pandemic survey period. Approval of college ethical committee was granted at the time of submission of the plan of the study.

2.1 Statistical Analysis

The data collected were compiled and analyzed statistically using SPSS version 22 . Chi-square test was applied to find out the association of depression, anxiety, and stress with the age and educational status of the housewives. The level of statistical significance(α-value) was defined as $P < 0.05$ and valid conclusions were drawn.

3. RESULT

Table 1: Characteristics of the participants

Characteristics	Frequency (n)	Percentages (%)
1. Age(n=231)*		
▪ 18-30	65	28.1
▪ 31-45	99	42.9
▪ 46-70	67	29.0
2. Marital status(n=231)*		
▪ Couple	210	90.9
▪ Divorced/Widow	21	9.1
3. Caste(n=231)*		
▪ General	26	11.2
▪ OBC	88	38.1
▪ SC	45	19.5
▪ ST	72	31.2
4. Residence Area type(n=231)*		
▪ Rural	175	75.8
▪ Semi-Urban	33	14.2
▪ Urban	23	10.0
5. Social-economic Status(n=231)*		
▪ High	27	11.7
▪ Medium	153	66.2
▪ Low	51	22.1
6. Education(n=231)*		
▪ Graduate	79	34.2
▪ Intermediate/Diploma	38	16.5
▪ High School	58	25.1
▪ Middle School	23	10.0
▪ Primary School	20	8.6
▪ Illiterate	13	5.6

Table 1 shows that, there is total 231 housewives who participated in my survey, Of which 28.1% were in between 18-30 years, 42.9% were between 31-45 years and 29% were in between 46-70 years of age. Then from them 90.9% were couple and rest of 9.1% were separated or widow. Mostly 38.1% were from OBC category, 11.2% were from General and rest of 50.7% were tribal (both ST and SC). Most highly 75.8% were lives in rural areas, 14.2% were from semi-urban and 10% were from urban. From social-economic status, 66.2% were belongs from middle class family, 22.1% were from low class and 11.7% were high class. As per their educational information, 34.2% were graduate, 25.1% were High school passed, 16.5% were intermediate or diploma, 10% were middle school, 8.6% were primary school passed and 5.6% were illiterate

According to my online survey the demographic responses as pie-chart are as follows;

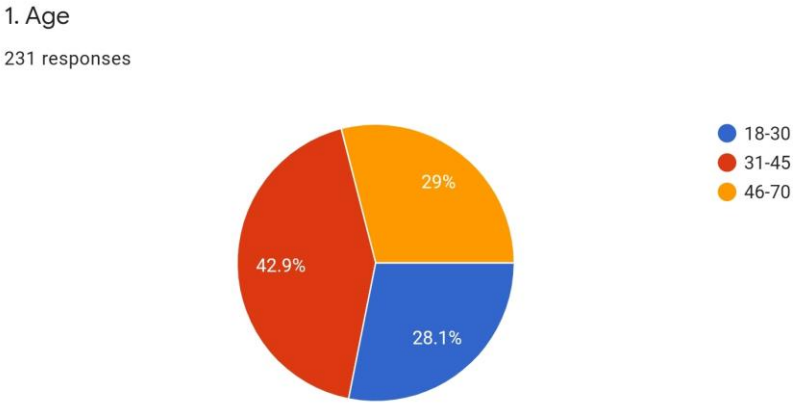

Fig. 1 shows, There is total 231 housewives who participated in my survey, Of which 28.1% were in between 18-30 years, 42.9% were between 31-45 years and 29% were in between 46-70 years of age.

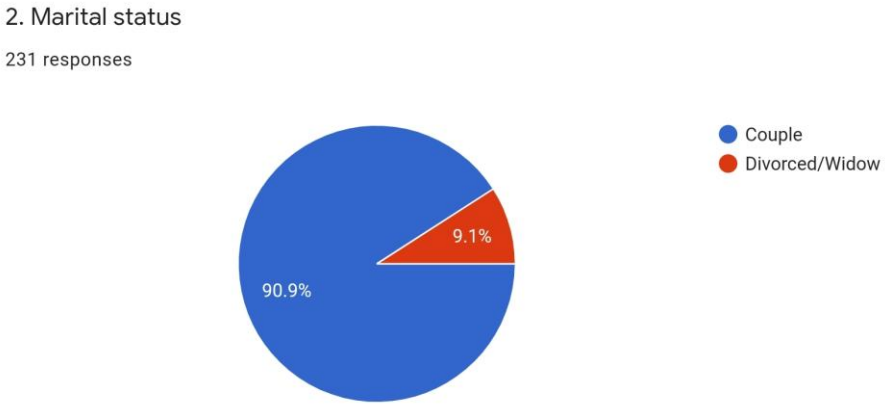

Fig. 2 shows, From them 90.9% were couple and rest of 9.1% were separated or widow.

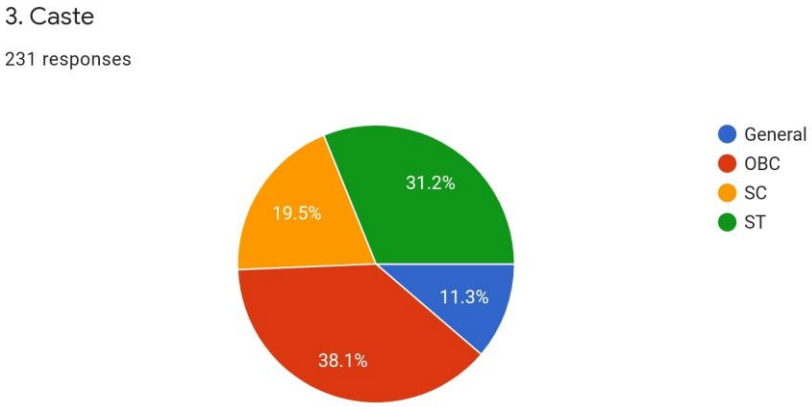

Fig. 3 shows, Mostly 38.1% were from OBC category, 11.3% were from General and rest of 50.7% were tribal (both 31.2% ST and 19.5% SC category).

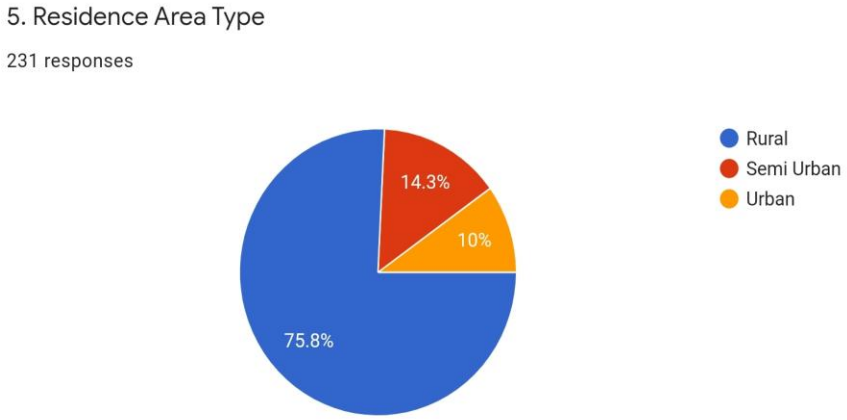

Fig. 4 shows, Most highly 75.8% were lives in rural areas, 14.3% were from semi-urban areas and 10% were from urban areas.

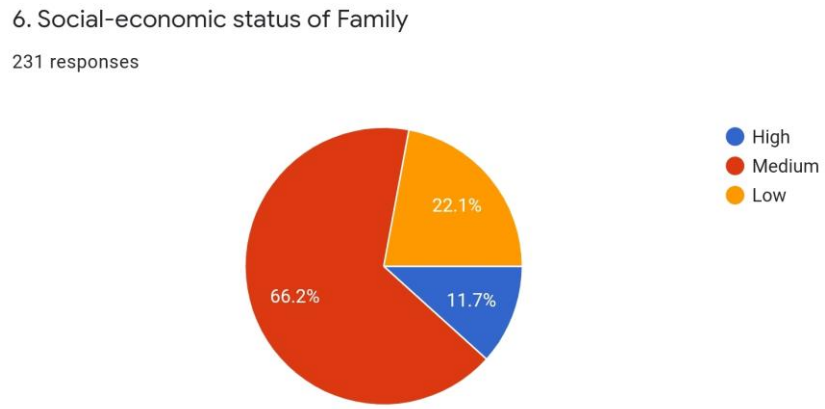

Fig. 5 shows, From social-economic status, 66.2% were belongs from middle class family, 22.1% were from low class and 11.7% were high class.

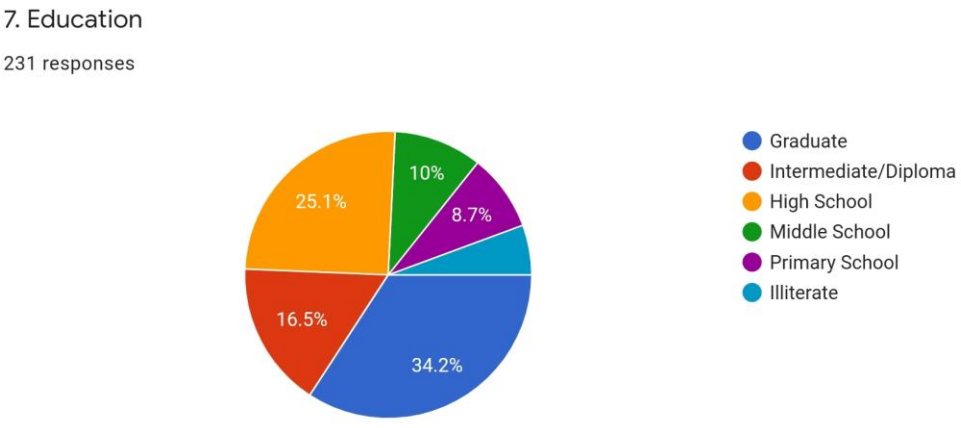

Fig. 6 shows, As per their educational information, 34.2% were graduate, 25.1% were High school passed, 16.5% were intermediate or diploma, 10% were middle school, 8.7% were primary school passed and 5.5% were illiterate (never study).

Table 2: Practices of the housewives during COVID-19	
Practices	n(%)
1. Buying fruits/vegetables from sellers (n=231)*	
▪ Going out to buy	95 (41.1)
▪ Order to deliver	33 (14.3)
▪ Send someone to buy	103 (44.6)
2. Keeping them aside for (n=231)*	
▪ ½-1 h	70 (30.2)
▪ 5-6 h	90 (39)
▪ Overnight	48 (20.8)
▪ Others (2 days or more)	23 (10)
3. Washing them with (n=231)*	
▪ Water only	130 (56.2)
▪ Detergent and water	27 (11.7)
▪ Salt and water	48 (20.8)
▪ Any other	26 (11.3)
4. Frequency of hand washing (n=231)*	
▪ On coming from outside	110 (47.6)
▪ After touching door handles	34 (14.7)
▪ Before entering kitchen	25 (10.8)
▪ After receiving things from outside	62 (26.9)
5. Frequency of wearing mask (n=231)*	
▪ While going out	137 (59.3)
▪ While talking to a stranger	76 (32.9)
▪ At home	18 (7.8)
6. Type of mask used (n=231)*	
▪ N-95	42 (18.6)
▪ Surgical face mask	57 (24.7)
▪ Cloth face mask	125 (54.1)
▪ Black anti-smoke face mask	6 (2.6)
7. Reusing which face mask (n=231)*	
▪ N-95	43 (18.6)
▪ Surgical face mask	49 (21.2)
▪ Cloth face mask	127 (55.0)
▪ Black anti-smoke face mask	3 (1.3)
▪ Not reusing	9 (3.9)
8. Home remedies used for boosting immunity (n=231)*	
▪ Citrus fruits/lemon	60 (26)
▪ Turmeric in milk	59 (25.5)
▪ Nothing special	112 (48.5)

**n* refers to the number of positive responses.

Table 2 shows the practices adopted by housewives during the pandemic of COVID-19. About 44.6% were send someone to buying vegetables/fruits from sellers, of which nearly, 14.3% were ordering to deliver things at home and 41.1% were going out to buy. About 39% were keeping them aside for 5-6 hour and 56.2% were washing them with water only. Some (11.7%, 28.8% each) were using detergent and salt along with water. More than 45% were washing hands on coming from outside and almost all (100%) were using mask. Majority 54.1% were using cloth masks while 24.7% were using surgical face mask, 18.6% were using N-95 and remaining 2.6% black anti-smoke face mask. Among those who were reusing, 55% were reusing cloth mask, 21.2% surgical, 18.6% N-95, and 1.3% black anti-smoke face mask. Home remedies used by housewives were multiple in some cases as citrus fruits/lemon (26%) and turmeric in milk (25.5%). About 48.6% denied of using any home remedies.

As per graphical (pie-chart) view,

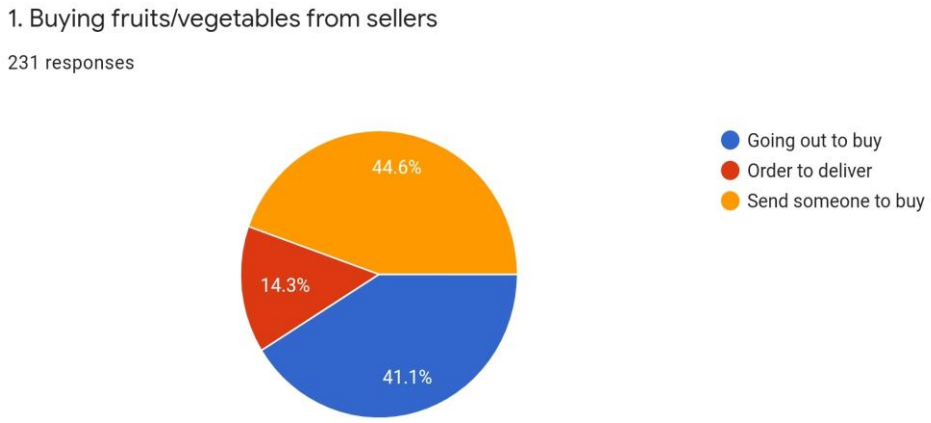

Fig. 7 shows, The practices adopted by housewives during the pandemic of COVID-19. About 44.6% were send someone to buying vegetables/fruits from sellers, of which nearly, 14.3% were ordering to deliver things at home and 41.1% were going out to buy.

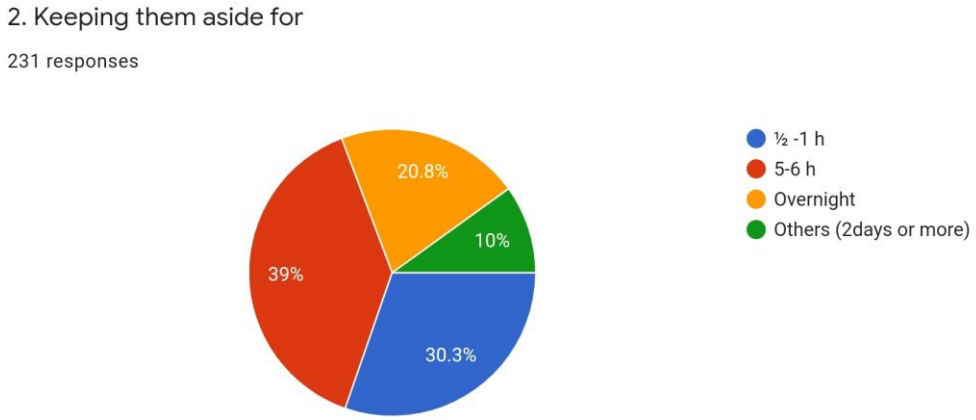

Fig. 8 shows, About 39% were keeping vegetables/fruits aside for 5-6 hours, 30.3% were keeping them aside for ½ -1 hour, 20.8% were for overnight and rest of 10% were keeping them aside for 2 days or more.

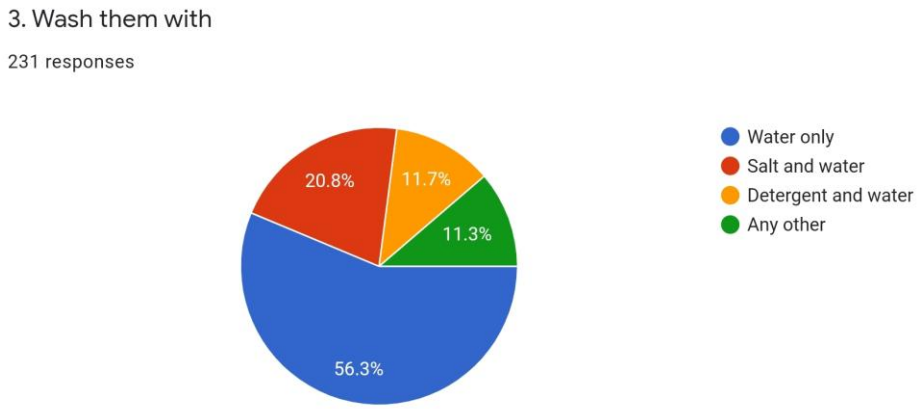

Fig. 9 shows, 56.3% were washing them with water only. Some were using detergent and salt along with water (11.7% and 28.8% respectively).11.3% were using other methods to clean them.

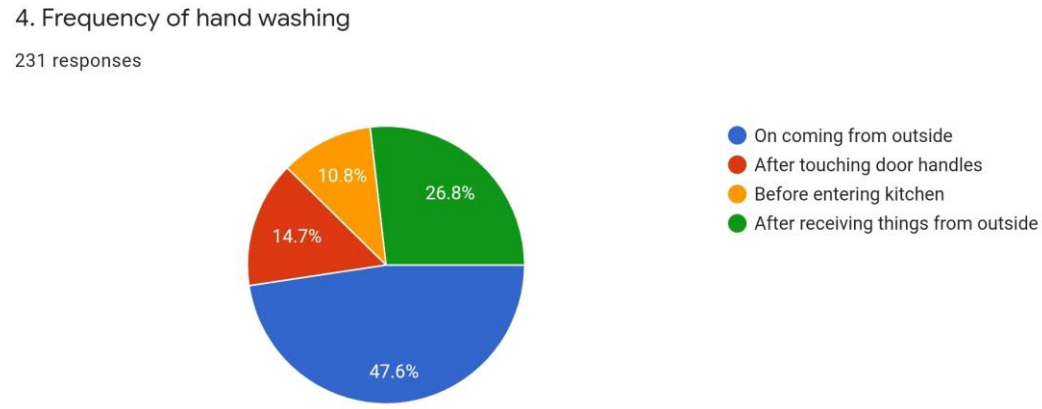

Fig. 10 shows, 47.6% were washing hands on coming from outside, 26.8% were washing hands after receiving things from outside, 14.7% were washing hands after touching door handles and 10.8% were washing hands before entering kitchen.

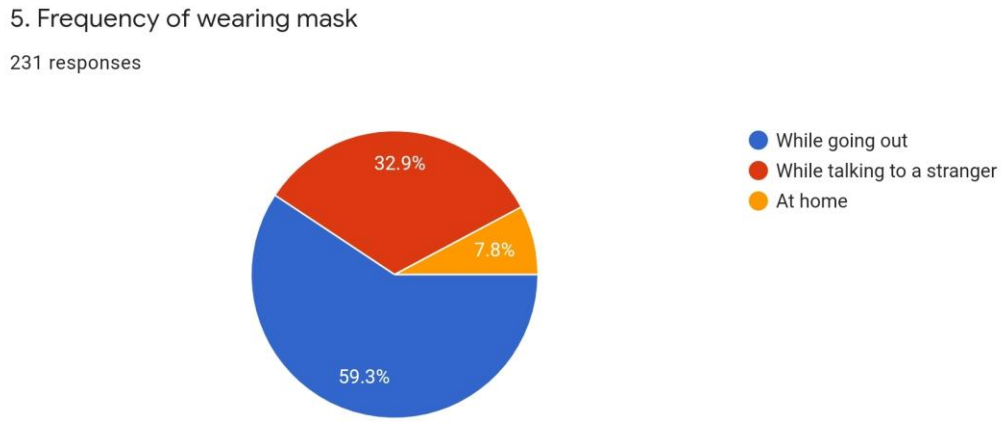

Fig. 11 shows, 59.3% were wearing mask while going out, 32.9% wearing while talking to a stranger and rest of 7.8% were wearing mask at home.

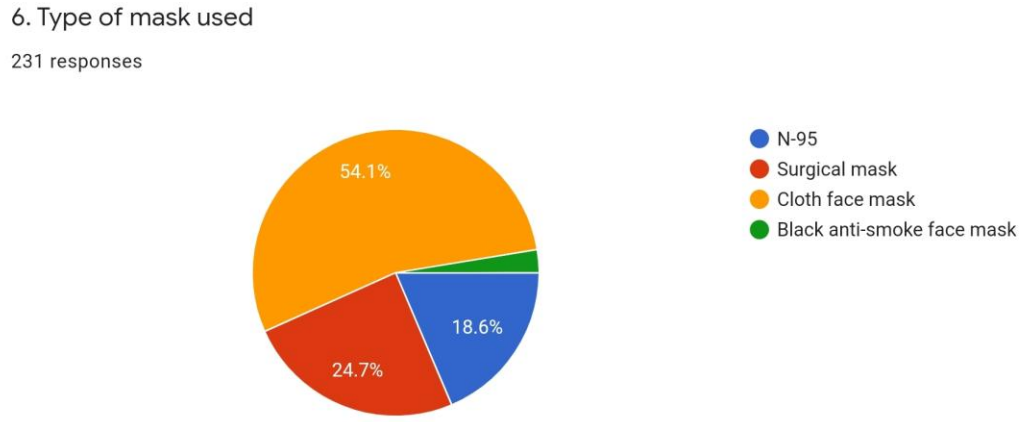

Fig. 12 shows, . Majority 54.1% were using cloth masks while 24.7% were using surgical face mask, 18.6% were using N-95 and remaining 2.6% black anti-smoke face mask.

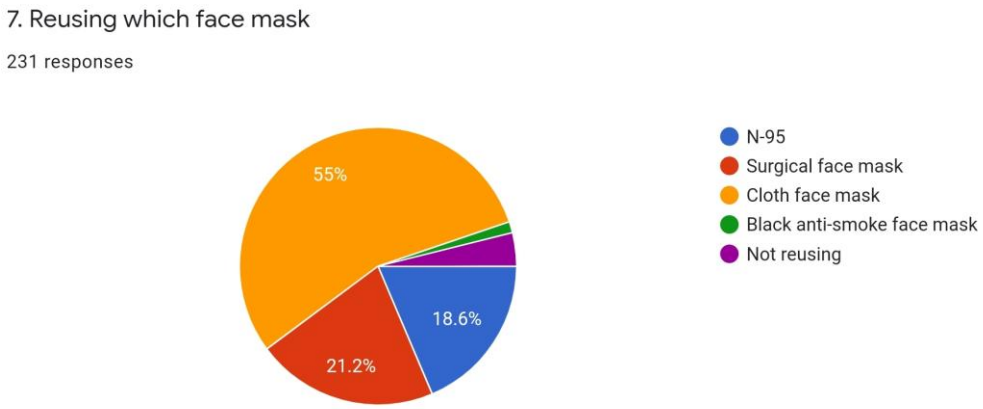

Fig. 13 shows, Among those who were reusing, 55% were reusing cloth mask, 21.2% surgical, 18.6% N-95, and 1.3% black anti-smoke face mask.

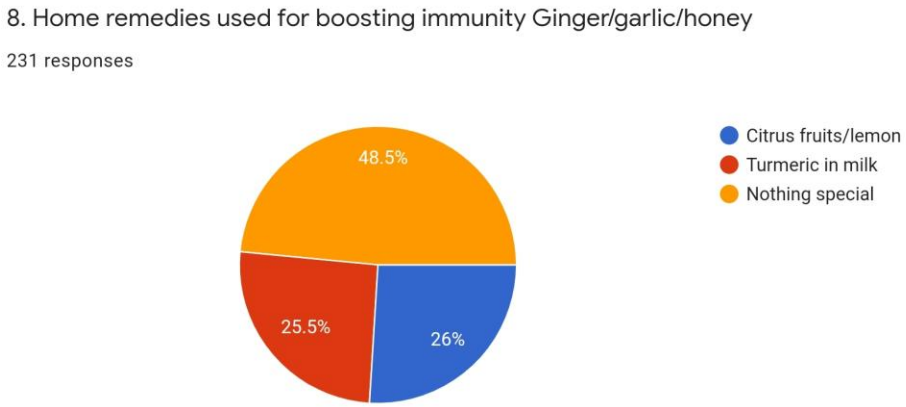

Fig. 14 shows, . Home remedies used by housewives were multiple in some cases as citrus fruits/lemon 26% and turmeric in milk 25.5%. About 48.6% denied of using any home remedies.

Table 3: Effect of Age, Education and Income of participants on depression, anxiety and stress

	Age(years)			
Parameter	18-30 n(%)	31-45 n(%)	46-70 n(%)	Significance
Depression*				
Absent (n=189)	59 (31.2)	73 (38.7)	57 (30.1)	X^2 =33.955[a]
Present (n=42)	6 (14.2)	26 (62)	10 (23.8)	df= 14
				P= 0.002
Anxiety*				
Absent (n=178)	53 (29.8)	70 (39.3)	55 (30.9)	X^2=17.511[a]
Present (n=53)	12 (22.6)	29 (54.8)	12 (22.6)	df = 14
				P = 0.230
Stress*				
Absent (n=171)	56 (32.7)	65 (38.1)	50 (29.2)	X^2= 20.395[a]
Present (n=60)	9 (15)	34 (56.6)	17 (28.4)	df= 14
				P= 0.118

Parameter	Education						
	Graduate	Intermediate Or Diploma	High School	Middle School	Primary School	Illiterate	Significance
Depression*							
Absent (n=189)	66(35)	33(17.5)	50(26.5)	16(8.4)	16(8.4)	8(4.2)	X^2 =41.296[a]
Present (n=42)	13(30.9)	5(11.9)	8(19.1)	7(16.7)	4 (9.5)	5(11.9)	df= 35
							P= 0.215
Anxiety*							
Absent (n=178)	61(34.3)	32(17.9)	47(26.5)	15(8.4)	15(8.4)	8(4.5)	X^2=41.834[a]
Present (n=53)	18(33.9)	6(11.4)	11(20.8)	8(15.1)	5(9.4)	5(9.4)	df = 35
							P = 0.198
Stress*							
Absent (n=171)	63(36.8)	26(15.2)	45(26.3)	16(9.4)	13(7.6)	8(4.7)	X^2=48.924[a]
Present (n=60)	16(26.7)	12(20)	13(21.7)	7(11.7)	7(11.7)	5(8.2)	df= 35
							P= 0.59

Parameter	Social-Economic Status			
	Low n(%)	Medium n(%)	High n(%)	Significance
Depression*				
Absent (n=189)	36 (19.1)	131 (69.3)	22 (11.6)	X^2 =18.172[a]
Present (n=42)	15 (35.7)	22 (52.4)	5 (11.9)	df= 14
				P= 0.199
Anxiety*				
Absent (n=178)	31 (17.4)	129 (72.5)	18 (10.1)	X^2=25.054[a]
Present (n=53)	20 (37.7)	24 (45.3)	9 (17)	df = 14
				P = 0.034
Stress*				
Absent (n=171)	31 (18.1)	121 (70.8)	19 (11.1)	X^2= 33.774[a]
Present (n=60)	20 (33.3)	32 (53.3)	8 (13.4)	df= 14
				P= 0.002

*For statistical analysis depression, anxiety, and stress levels of the participants was divided into three categories

Table 3 shows that depression, anxiety, and stress were maximally observed in the age group of 31–45 years. Age was found to be significantly associated with the depression (P = 0.002) levels, of the study participants while it has no effect on the anxiety and stress. On observing the effect of educational status on the mental health of participants, there was no major cases on depression, anxiety and stress. But by observing the effect of social-economic status (income), it was found that anxiety (P = 0.034) and stress (P = 0.002) were significantly higher among both low class and high class families as compared to middle class families.

4. DISCUSSION

Table 1 shows the demographic characteristics of the housewives. I found that 28.1% were among 18-30 years age group, 42.9% were among 31-45 years age group and 29% were among 46-70 years of age group. Then from them 90.9% were couple and rest of 9.1% were divorced or widow. Almost 38.1% were from OBC category, 11.2% were from General and rest of 50.7% were tribal (both ST and SC category). Most highly 75.8% were lives in rural areas, 14.2 were from semi-urban and 10% were from urban. From social-economic (income) basis, 66.2% were belongs from middle class family, 22.1% were from low class and 11.7% were high class. As per their educational information, 34.2% were graduate, 25.1% were High school passed, 16.5% were intermediate or diploma, 10% were middle school, 8.6% were primary school passed and 5.6% were illiterate

In my study, I found that depression was significantly higher among 31–45 years age group ($P = 0.002 \leq \alpha = 0.05$) while age was not significantly associated with anxiety and stress [Table 2]. As far as educational status is concerned, depression, anxiety and stress were significantly normal in all cases. But in social-economic status (income) case we found anxiety ($P = 0.034 \leq \alpha = 0.05$) and stress ($P = 0.002 \leq \alpha = 0.05$) was significantly higher among low and high class families. Although there was paucity of evidence, a study in China on anxiety, worry, and perceived stress found that mean age of participants was 43.1 years and 2/3rd were females.[15] Another study in Uttar Pradesh, India, revealed that the mean age of the participants was 29.09 ± 8.83 years and more than half were females and above graduates.[16]

Stress during the pandemic can be overwhelming, affecting people at the personal level. To reduce the stress of COVID-19 pandemic house wives adopted some kind of preventive behaviors [Table 3]. More than 40% were sent some one to buy vegetables/ fruits from sellers. About 39% were keeping them aside for 5-6 hours, more than 45% were washing hands on coming from outside, and almost all (100%) were using mask. The majority (54.1% each) were using cloth masks while 24.7% were using cloth mask and 18.6% were using N-95 masks. Among those who were reusing, 55% were reusing cloth mask, 21.2% surgical, 18.6% N-95, and 1.3% black anti-smoke face mask. During February 2020, WHO also stated that more research is needed on priority bases to focus on preventive measures to save the lives of the people and included "Optimize use of protective equipment and other infection prevention and control measures in healthcare and community settings – it is critical to protect healthcare workers and the community from the transmission and create a safe working environment." The WHO also stated that avoiding crowded places and wearing masks are the key practices to be followed.[17] A similar study conducted by Zhong et al. in China, showed that citizens were compliant with protective measures, where 96.4% avoided crowded places and 98.0% wore masks on departing their homes during COVID-19 outbreak.[18] Another study by Bharadva et al. during swine flu also showed that 96.6% were using face mask and 52.2% were regularly washing hands.[19]

In the present study, multiple home remedies were used by housewives such as citrus fruits/lemon (26%), and turmeric in milk (25.5%). Out of the total, 48.5% denied of using any home remedies. Similar practices during COVID-19 were observed by Rahman and Salthi in their study in Bangladesh.[20]

5. CONCLUSION

To the best of our knowledge, the present study on housewives as study participants is first of its kind in Mayurbhanj district, Odisha. Our country is facing the challenge to control the spread of COVID-19 and its effects on the people. Findings of our study show that depression, anxiety, and stress were present in 18.2%, 22.9%, and 25.9% of the housewives and mental health was significantly associated with the age and educational status of participants. As far as practices were concerned, most of the housewives were doing right practices. Small proportion of study participants was not following hand hygiene practices as per recommendations and was reusing the disposable face masks. Hence, updated knowledge should be provided by the health-care authorities to improve the preventive practices to curb the spread of the disease. Furthermore, more psychological interventions are needed to improve the mental health of the housewives during this period of lockdown.

5.1 Limitations of the Study

My study lacks complete representativeness due to its online nature thus more such studies are required to bring out the required practices and assess the mental health being of housewives who are the building blocks of the family.

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