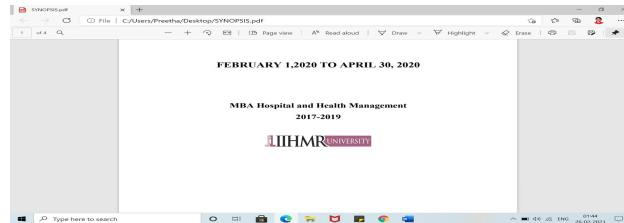


TREATMENT SEEKING BEHAVIOUR AMONGST STROKE SURVIVORS AND IMPACT OF COVID 19 PANDEMIC IN NAGPUR DISTRICT

Dissertation Submitted to



THE IIHMR UNIVERSITY, JAIPUR

For the partial fulfillment for the award of the degree of

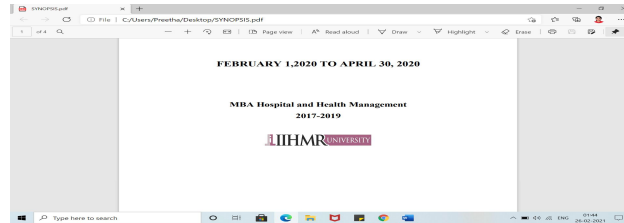
Master of Business Administration (MBA)
in Hospital and Health Management

By
Dr. Rishab Budakoti

Under the Supervision and Guidance of
Dr. Daya Krishan Mangal, Professor, IIHMR University, Jaipur

TREATMENT SEEKING BEHAVIOUR AMONGST STROKE SURVIVORS AND IMPACT OF COVID 19 PANDEMIC IN NAGPUR DISTRICT

Dissertation Submitted to



THE IHHMR UNIVERSITY, JAIPUR

For the partial fulfillment for the award of the degree of

Master of Business Administration (MBA)
in
Hospital and Health Management

By
Dr. Rishab Budakoti

Under the Supervision and Guidance of
Dr. Daya Krishan Mangal, Professor, IHHMR University, Jaipur

DECLARATION BY STUDENT

I hereby declare that this dissertation titled "*Treatment seeking behavior amongst stroke survivors and impact of COVID 19 pandemic in Nagpur district*" is the bona fide record of my original research work.

I declare that it has not been submitted to any other university or institution to award any degree or diploma. Information derived from the published or unpublished work of others has been duly acknowledged in the text.

Dr Rishab Budakoti

24-06-2021

CERTIFICATE

This is to certify that dissertation titled "*Treatment seeking behavior amongst stroke survivors and impact of Covid 19 pandemic in Nagpur district*" is a record of the research work undertaken by Dr. Rishab Budakoti in partial fulfillment of the requirements for the award of the degree of MBA Hospital and Health Management from the IIHMR University, Jaipur under my guidance and supervision. His approach to research study has been sincere, scientific, and analytical.

Faculty Guide
IIHMR University, Jaipur
Date:

ACKNOWLEDGEMENTS

The journey to becoming a wise and responsible professional does not remain confined to classroom learning. The experience that I gained while working on this project acquainted me with the practical aspect of Research Methodology & implementation of the theory in real life. My sincere thanks to all the participants in the survey for taking me ahead in this journey.

I am appreciative to my guide Dr. Daya Krishan Mangal, Professor IIHMR University, Jaipur, for the consistent help identified with my questions, for his understanding, inspiration, and enormous information. His direction helped me in all the time recorded as a hard copy of this report. I would also like to thank my family and colleagues for their constant support and for keeping me motivated throughout the journey.

TABLE OF CONTENTS

S.no	Content	Page Number
1.	Introduction	8
1.1	Research Questions	10
1.2	Objective of the study	10
1.3	Design of the study	10
1.4	Rationale & Scope of the study	11
2.	Review of Literature	12
2.1	What is Stroke	13
2.2	Impact of stroke	14
2.2.1	Impact of stroke in Developed countries	16
2.2.2	Impact of stroke in Developing countries	17
2.2.3	Impact of stroke in India	17
2.2	Delay in stroke care sought	18
2.3	Gender differences in stroke	19
2.4	Treatment seeking behaviour in stroke	19
2.4.1	Behaviour as a factor of health	20
2.4.2	Health seeking behaviour model	20
2.4.3	Health Belief Model	20
2.4.4.	Health Utilization model	23
2.4.5	Healthcare for Stroke in India	23
2.5	Treatment for Stroke in India	24
2.6	Summary of literature review and identification of gaps	24
3	Methodology	23
3.1	Design of the study	23
3.2	Sampling Procedure	25
3.3	Unit of analysis	25
3.4	Research tools	25
3.5	Data collection method	26
3.6	Ethical Considerations	26
4	Limitation of study	26
5	Discussion	27
6	Conclusion	39
7	References	42

**LIS
T
OF
FIG
URE
S**

S.NO	Content	Page number
1	Health Belief Model	20
2	Health Utilization Model	21
3	Methodology	24
4	Conceptual Framework	27
5	Individual determinants of health	28
6	Pathway Model	31

1. INTRODUCTION

The world is going through numerous social and economic changes leading to a various phase of epidemiological transition. The modern world is full of new inventions and development in diverse sectors. Shift in population dynamics leading to environmental changes, lifestyle changes, etc., leading to an epidemiological transition from higher mortality caused by infectious diseases to chronic non- communicable diseases is occurring worldwide(Yusuf, 2001) . At present, non-communicable diseases (NCDs) take lives of 38 million people each year. Morethan 75% of NCD deaths, around 28 million, occur in developing countries. India, like other developing countries, is a stroke epidemic (Pandian and Sudhan, 2013)

Sudden death of some brain cells due to lack of oxygen when the bloodflow is lost by blockage or rupture of an artery to the brain results in Stroke. It is also a leading cause of dementia and depression and partial or complete disability.

Hippocrates, the father of medicine, identified and described Stroke- the sudden onset of paralysis more than 2400yrs ago. The old texts of Ayurveda medicine had identified Stroke as Pakshaghat.

Worldwide, Stroke is the commonest cause of mortality after coronary artery disease. Also, it is the commonest cause of chronic adult disability. The lifetime risk of Stroke after 55 years of age is 1 in 5 for women and 1 in 6 for men. Currently, the stroke incidence in India is much higher than in Western industrialized countries. Large vessel intracranial atherosclerosis is the commonest cause of ischemic Stroke in India. The common risk factors of Stroke are, hypertension, diabetes, smoking, and dyslipidemia. These risk factors are pretty prevalent and inadequately controlled, mainly because of poor public awareness and inadequate infrastructure.

Until recently, modern medicine has had very little control over this disease, but the world of stroke medicine is changing drastically, and new and better therapies are being developed every day. Today, some people who have a stroke can walk away from the attack with no or few disabilities if they are treated promptly. But still in developing countries like India, only a small number of ischemic stroke cases can benefit from thrombolytic and advanced therapies. Suddenly one incident changes the whole life pattern; six-letter words become very powerful and change the entire identity of that person. The STROKE turned "Everything upside down". Person starts to experience severe headaches, sudden numbness or weakness of the face, arm, or leg (especially one side), sudden trouble in walking, sudden trouble in speaking, some person becomes unconscious for some time. These symptoms force them to visit hospitals and consult doctors.. Diagnosis of Stroke itself is very shocking for the survivors and their family members because they usually have first-time exposure of this term. The stroke survivors moving into a new location and situation where those cared for will now become caregivers and who took responsibility for all members will now become dependent on them.

Because of Stroke, there is the inclusion of physical and practical, mental, enthusiastic, and social wellbeing. The actual wellbeing measurement alludes to infection-related side effects. Wellbeing involves self-care, versatility, and ability to perform different family errands and work jobs, mental measure incorporates psychological and passionate capacities, and social measure incorporates social and familial contacts. The effect of actual inability on everyday undertakings, the capacity to participate in recently delighted in exercises, and jobs inside the family is a significant test (Amanda M. 2008).

Such changes influence the persons' life. The future had been altered for all stroke survivors. Several Stroke survivors were worried by both the uncertainty of how much they would recover and the anticipation of its mishappening again. They also concerned about the possibility of death. There is no denying the impact of stroke survivors on family or partner who has had Stroke.

Stroke survivors are in a state of shock for few months or even a year at a stretch. Some survivors recover with time whereas some takes years to come up with situation. The variation

in recovery depends on many factors like limited knowledge about living with disability, lack of acceptance of disabling body, lack of acceptance of dependency on others, and bombarding of various ideas, treatment, advice, assistances, and sympathy from others well-wishers and overprotected by family members.

The process starts with hospitalization, medicines, evaluation, and assessment of the functional capability of that person who leads to an adjustment in various areas of life. Having a stroke is often a traumatic and demoralizing experience for survivors and their families. It is obvious to have seen emotional and psychological problems with stroke survivors, either present immediately or later.

1.1 Research questions

1. What is the pattern of the stroke cases reported at hospitals?
2. What is the current treatment scenario available right from the onset of stroke episode until the patient reaches the hospital?
3. What is the treatment-seeking behavior after recovery from a stroke attack?
4. What experiences stroke patients had faced during the lockdown and due to the Covid-19 situation?

1.2 Objectives

Broad Objective: The general objective of the study was to understand the treatment Seeking Behaviour in the study population by various systems of medicine and experiences of people in decision making and choice of a facility due to COVID 19 pandemic restrictions.

Specific Objectives: The specific objectives of the study were as follows:

- To understand the pattern of stroke cases reported in hospitals in India.
- To examine the pathways of treatment-seeking behavior of stroke patients.
- To analyze the patient experience of the various forms of treatment accessed.
- To evaluate the stroke patients experience during lock down and analyze its consequences.

1.3 Design of the Study

The investigation study was planned to keep in view the erstwhile mentioned purpose and meanings. To answer the meanings, a qualitative study design was used with a set of data collection tools that helped conduct the study in a better way.

Qualitative investigation styles were used to conduct the telephonic interview and know the

extent of health problems and treatment-seeking demeanor in the study population. It also reflected the socioeconomic status and the challenges faced due to Covid 19 infection restrictions of the study population.

1.2 Rationale and scope of the study

Lifestyle, continuous stress, hypertension, addiction are the risk factors of Stroke. Control over blood pressure and regular antihypertensive medication play important role in management of Stroke. Changing dietary habits, regular blood pressure check-up, regular physiotherapy and adherence to treatment play important role in Stroke related complications control of patient.

Poor knowledge, attitude, practices regarding hypertension Stroke, and poor adherence to anti-hypertensive drugs influence stroke progression and its serious complications. Physical disability and dependency on care giver are more seen in stroke patients. Quality of life further affected by complications of Stroke for a long time. If the person has good knowledge about preventive behaviors regarding Stroke, he can apply it in his daily living. Complications may decrease, and quality of life may increase; this reduces the financial burden for Stroke.

Perceived severity and perceived benefits force a patient to seek treatment for the disease. A patient's treatment seeking behavior depends on the distance of healthcare facility from their residence, age of the patient, behavior of doctors, and other staff in hospital. Availability of medicines, quality of drugs determines the treatment-seeking behavior of stroke patients.

Large scale studies like, global burden of diseases have data on the burden of Stroke from developing world. Still, there are very few individual studies which have tried to measure burden of Stroke in terms of mortality and morbidity in India. Data on treatment-seeking for Stroke in India is scarce. There is no available literature describing reasons for the choice of a particular healthcare provider and delay in care sought for Stroke. Thus, it has become necessary to explore why and how people choose a specific healthcare provider and the gendered differences involved in it after an episode of Stroke. Findings from this study will also help fine-tune some of the features of the intervention package and help design educational strategies for Stroke.

2 REVIEW OF LITERATURE

This literature review aims to identify relevant publications in peer reviewed journals, reports and books that address the issue of healthcare-seeking for Stroke. It proposes to identify gaps in the available literature on healthcare-seeking for Stroke with specific reference to rural India. The above-mentioned review of literature clearly indicates that there is high prevalence of Stroke in low middle countries like India, thus adding extra burden of Non communicable disease. There are plenty of individual studies, systemic reviews and meta-analysis available on the current burden of Stroke and its projection for near future for developed countries. The main objective of this study has been to understand the Treatment Seeking Behavior among stroke

survivors when primary level health care facilities of multiple Systems are accessible within a specified geographical domain with proximities to institutions of tertiary care for the same. The determinants that influence Health care utilization have been scrutinized for a comprehensive appreciation of the phenomenon. Existing literature concerning Treatment Seeking Behavior and concepts of the same has been reviewed and used as a lead for this study. Previous Treatment Seeking Behavior studies on stroke patients that have been carried out in India have been looked into for the current research. Finally, the current status of treatment Systems in the health care domain of our nation, particularly for stroke patients and also the impact of COVID 19 lockdown on their decision making have been dwelt upon.

2.1 What is Stroke?

Stroke is often viewed as a disease of elderly, in the past, Stroke was referred to as cerebral-vascular accident or CVA, but the term "stroke" is now preferred.

The WHO (1980) defines Stroke as "rapidly developing clinical signs of focal (at times global) disturbance of cerebral function, lasting more than 24 hours or leading to death with no apparent cause other than that of vascular origin."

A stroke, sometimes called a "brain attack," occurs when blood flow to an area in the brain is cut off. When blood flow to the brain is impaired, oxygen, glucose and other nutrients cannot be delivered to the brain. The brain cell dies due to lack of oxygen and blood. Blockage of artery by any clot is most common in case of Stroke. Blood flow can be compromised by a variety of mechanisms. But the most common mechanisms are two which are described below:

Blockage of an artery (Ischemic Stroke):

Ischemic Stroke is like a heart attack, except it occurs in the blood vessels of the brain. Clots can form either in the brain's blood vessels, in blood vessels leading to the brain, or even blood vessels elsewhere in the body which then travel to the brain.

These clots block blood flow to the brain's cells. Ischemic Stroke can also occur when too much plaque (fatty deposits and cholesterol) clogs the brain's blood vessels. About 80% of all strokes are ischemic Stroke. (Web MD)

Rupture of an artery (hemorrhagic Stroke)

Hemorrhagic Strokes occur when a blood vessel in the brain breaks or ruptures. The result is blood seeping into the brain tissue, causing damage to brain cells. The most common causes of hemorrhagic Stroke are high blood pressure and brain aneurysms. An aneurysm is a weakness or thinness in the blood vessel wall that causes it to balloon outward. People who have high blood pressure are 4 to 6 times more likely to have a stroke. Over time, hypertension leads to atherosclerosis and hardening of the large arteries. This, in turn, leads to blockage and weakening of the walls of small blood vessels in the brain, causing them to balloon and burst. The risk of Stroke is directly related to how high the blood pressure is.

Risk Factors and Complications of Stroke:

(Hypertension is the most widely recognized and treatable danger factor in Stroke)

As blood circulates, it applies tension on the dividers of the corridors. Hypertension, or hypertension, is described by a relentless expansion in this pressing factor, in any event, when an individual is very still.

Whenever left untreated, this "quiet executioner," as hypertension is frequently called, is an essential driver of Stroke, yet in addition of coronary illness, cardiovascular breakdown, kidney sickness, and visual deficiency. Luckily, by and large, hypertension is not difficult to determine and is typically controllable to have way of life alterations (like eating regimen and exercise) and medicine. (Johns Hopkins Health Alerts)

Hypertension as a Cause of Ischemic Stroke

Hypertension, if left untreated, can damage arteries and lead to atherosclerosis. This reduces blood flow and increases the risk of developing blood clot. When atherosclerosis affects the brain's blood vessels, it may cause an ischemic stroke.

Hypertension as a Cause of Hemorrhagic Stroke

Uncontrolled hypertension can cause blood vessels to weaken. Like overinflated tires, veins and arteries are susceptible to damage when too much pressure exists. This can result in a burst blood vessel in the brain. (Cardiovascular Disease, www.ehow.com › ... ›, Accessed on 2nd March 2010).

Smoking:

In recent years, studies have shown cigarette smoking to be an important risk factor for Stroke. The nicotine and carbon monoxide in cigarette smoke damage the cardiovascular system in many ways. The use of oral contraceptives combined with cigarette smoking greatly increases stroke risk. (Stroke association, 2010)

High cholesterol:

High blood cholesterol is a significant danger factor for coronary illness and builds the danger of Stroke. Studies show that ladies' cholesterol is higher than men's from age 55 on. Undeniable degrees of LDL (low-thickness lipoprotein) cholesterol (the "awful" cholesterol) raise the danger of coronary illness and cardiovascular failure. Undeniable degrees of HDL (high-thickness lipoprotein) cholesterol (the "great" cholesterol) bring down the danger of coronary illness.

Examination has shown that low degrees of HDL cholesterol appear to be a more grounded hazard factor for ladies than for men.

Symptoms of Stroke:

The symptoms depend on the area of brain affected by deprivation of oxygen and blood. Small Stroke may not cause symptoms in human being but can damage the brain tissue. The Stroke which does not show significant symptoms called *SILENT STROKE*. The more area of brain, affected; the more functions are to be lost. Different type of Stroke shows some other symptoms. For example, intracranial hemorrhage may compress the other structure of brain and alter their function. (Stroke Symptoms, 2010)

2.2 Impact of Stroke

Impact of Stroke is complex and related to body function, restriction in activity and participation. Limitation of body functions ranges from cognitive impairments such as impaired memory, attention; mood changes such as depression and aggression (Hart, 2003, M. Lindberg, 1995) these impairment changes in the overall wellbeing and impact on functioning of daily life, and participation in activities.

Research has shown that most people are initially up to six months to one year dependent for their activity of daily living on either spouse or family member, after one to two years later they became independent on self-care (Hoofien, Gilboa, Vakil & Donovan, 2001).

Impact of Stroke at Individual level:

Physical Effect:

Several physical effects can occur after incidence of Stroke and these effects depend on the severity and location of the brain that is damaged. The most common symptoms are weakness and paralysis usually one side of body (hemiparesis); communication difficulties, which include difficulties in finding words, reading, writing, and understanding the context, slurring speech. Other physical effects are including disturbed vision, loss of sensation. It has been seen that many survivors complain of an overwhelming tiredness. These feelings of tiredness are very often distressing for the stroke survivors. Most of the Stroke's survivors cannot able to continue their occupation even after one year. Many stroke survivors forced to be unemployed situation because nobody employed them because people need reduced working hours and modified tasks in adaptive suitable environment. (November 2002, <http://www.sign.ac.uk/pdf/sign64.pdf>, accessed at 20th Feb 2010). Stroke does not cause single disability in person, it creates multiple disabilities. Due to this the impact varies according to severity of disease. For better understanding impact is divided into three broad categories:

1. Motor Disorder
2. Associative Disorder
3. Psycho-social disorder

Motor disorder:

- Disorder of postural fixation

- Paralysis of half side of body
- Disorder of Voluntary movement

Associative disorder:

- Communication Disorder
- Vision Disorder
- Cognitive Disorder

Psycho-social disorder:

The general meaning of the word "psychosocial" is a combined expression both mental and social factor of human life.

Depression is the one of the more prominent characteristics of person having acquired disability. Depression in person with disabilities may be at least three times more than general population. The studies shows that it is mood related problem after Stroke and between 20 to 50 per cent of survivors might be depressed at any one time. (Neelanjana Paul 1, 2013)

Women are experienced twice greater depression than men because of difference in bio psychosocial factors. Feminist theorists have suggested that gender-based roles and socialization experiences contribute to depression in women more than men. (Jordan, Kaplan, Miller, Stiver & Surrey, 1991)

2.3 Burden of Stroke in Developed World

Chronic non-communicable diseases have become the leading causes of deaths worldwide because of the epidemiological transition from higher mortality caused by infectious diseases to that caused by chronic non-communicable diseases (Yusuf, 2001). Stroke often causes deaths or gross physical impairment or disability and thus, is one of the most devastating of all non-communicable diseases. Every year, there are 15 million people worldwide who suffer a stroke. Nearly six million people die because of Stroke annually and another five million are left with permanent disability (Stroke | World Heart Federation). An important parameter used to measure the potential impact of any disease is the disability-adjusted life-year (DALY). The latest Global Burden of Disease (GBD) data shows that Stroke related DALYs has ranked third (fifth in 1990; a 19% increase) (Feigin, 2014).

The American Heart Association Statistics (2002) committee and Stroke Statistics Subcommittee produce estimates and fact about Stroke and other cardiovascular diseases in United States. Each year 700,000 people suffer from Stroke, out of these 500 thousand are first recurrence and others are repeat stroke. Stroke is the third most common cause of death in United States. Stroke accounts for about 1 of every 16 deaths. According to 2009 data updates, over 143,579 people die each year from Stroke in United States. About 795,000 strokes occur in the United States each year. About 610,000 of these are first or new Stroke. About 185,000 occur in people who have already had a stroke before.

Nearly three-quarter of all strokes occur in people over the age of 65. The risk of having a stroke more than doubles each decade after the age of 55. The risk of ischemic Stroke in current smokers is about double that of nonsmoker. High blood pressure is the most important risk

factor for Stroke. Of all strokes, 87% are ischemic Stroke, 10% are hemorrhagic, and 3% are others. Each year, about 55,000 more women than men have a stroke. Men's stroke incidence rates are greater than women's at younger age but not at older ages. The male/female incidence ratio is 1.25 at ages 55-64; 1.50 for ages 65-74; 1.07 at 75-84 and 0.76 at 85 and older.

Approximately 130,000 people each year in England to under the age of 55 years. It is also estimated that approximately 1000 young people under the age of 20 years will have a stroke every year (Stroke Association, 2002). Available data on annual incidence rates from other population based studies from developed and developing nations report age-standardized incidence rates for strokes per 1000 persons at 2.1 for Takashima, Japan, 1.35 for China, 3.28 for Korea, 1.4 for Auckland (New-Zealand), 2.1 for Melbourne (Australia), 1.6 for Martinique (French West Indies), 1.40 for Chile. (Feigin VL, 2003)

2.4 Burden of Stroke in the Developing World:

According to the Global Burden of Disease Study conducted in 2010, the burden of Stroke has increased in low and middle-income countries, and the projections are that by 2050, 80% of strokes will occur in these middle-income countries (Krishnamurthy, 2013) (Feigin, 2007). A systematic review conducted with sixty-nine studies from the developing world found that most of the burden of Stroke (68.6% incident strokes, 52.2% prevalent strokes, 70.9% stroke deaths, and 77.7% DALYs lost) is in low-income and middle-income countries. This study also found that the proportion of stroke burden in low-income and middle-income regions is higher, overall, in individuals below age of 75 than in those who are above 75 years of age (Feigin, 2014).

2.5 Burden of Stroke in India:

India, like other developing countries, is experiencing an increased burden of Stroke, suggesting a stroke epidemic. There is not exact data present of Stroke in India. As per recent survey of community from different regions in India, a crude prevalence rate for strokes was to be about 203 per 1,00,000 populations. The male to female ratio was estimated to be 1.7.

Interestingly, there is a marked difference in the prevalence rates among various countries and even amongst communities within the same country. For example, in India the crude prevalence reported has varied from 57/1,00,000 in Vellore to 843/1,00,000 in the Parsi community in Mumbai. (Reference Data taken from Department of Physiotherapy and Rehabilitation, Max Institute of Neurosciences, Max Healthcare, New Delhi).

Around 12% of all strokes occurred in population below 40 years. The estimation by consultant Neurologist, Sri Ganga Ram Hospital, New Delhi, derived was 102,000 deaths, which represented 1.2% of total deaths in India.

PM Dalal presented in his paper on "Burden of Stroke – Indian Perspective" that Global Burden Disease (GBD) Study, in 1990, reported 9.4 million deaths in India of which 61,900 were from 'stroke' and the disability adjusted life years (DALYs) lost almost to 28.5 million, nearly six times higher than that due to malaria. Recent community surveys for Stroke identified 320

cases in 145,456 persons, indicating a Crude Prevalence Rate (CPR) of 220 per 100,000 persons. Another recent survey on 20,842 rural residents in East India There are significant regional variations in the burden of Stroke (Pandian and Sudhan, 2013). Diverse community-based studies have shown huge variations in the prevalence of Stroke in India, ranging from 147- 922/100,000 (Prasad, 2012)(Bharucha, 1988).

The incidence rates from recent population-based studies are 119-145/100,000 (Sridhar an, 2009). Case fatality rates due to Stroke also vary from region to region, the highest being 42% in Kolkata (Das, 2007).

The economic burden of Stroke has not been explored in India (Pandian. 2007). However, a report published by WHO suggests that India's growth of Gross Domestic Product (GDP) has fallen by 1% due to combined impact of CHD, Stroke, and diabetes. (WHO, 2005)

2.6 Delay in Stroke Care Sought

Outcome of ischemic Stroke can be improved by giving intravenous (IV) recombinant tissue plasminogen activator (rt-PA) within 3 hours of symptoms onset (Katzan et al., 2000). But, after an acute episode of Stroke, most of the patients are not eligible for thrombolysis due to excessive delay in care sought (Koennecke et al., 2001).

Numerous studies in the developed world have examined the factors that lead to delays in the treatment of a stroke patient. Findings from these studies are conflicting regarding the factors that cause delay in presentation to hospital.

However, similar observations were not seen in other reports (Harraf et al., 2002). Two common factors associated with the delay in hospitalization, found in all the above studies are- living alone and non-use of emergency ambulance. Data from India and other developing countries on various factors responsible for delay in early presentation to stroke centers is scarce (Srivastava and Prasad, 2001)(Yu et al., 2002)(Pandian et al., 2006)(Harraf et al., 2002).

There are only three studies from India which look into factors contributing to the delay in care sought. According to these studies, factors such as shorter distance from the hospital, family history of Stroke, older age, living in city, direct arrival to emergency department, presence of aphasia or hemiplegia and higher educational status are found to be associated significantly with early arrival to hospitals (Srivastava and Prasad, 2001)(Pandian et al., 2006)(Harraf et al., 2002).

2.7 Gendered Differences in Stroke

Stroke has more prominent impact on ladies than men since ladies have more stroke occasions and they are less inclined to recuperate. Age-specific rates are lower in ladies; nonetheless, in view of ladies' more extended future and a lot higher rate pace of Stroke in more established age, in general, ladies have more stroke occasions than men (Caso et al., 2010). These distinctions are credited to both, sex-related changes and variable danger factors in ladies and furthermore to the way of life and ecological that is sex related co-morbid conditions (Jamieson

and Skliut, 2010). Anti-inflammatory medicine offers essential counteraction against ischemic Stroke in ladies however not in men (Ridker et al., 2005) (Final report of. Guiding Committee of the Physicians' Health Study Research Group, 1989). There are concentrates from created nations which show that old ladies are less inclined to get assessed after intense a scene of Stroke than men. Additionally, essentially, less ladies get imaging inside 1 hour of crisis office appearance than men (Foerch et al., 2007) (Centers for Disease Control and Prevention (CDC), 2007). Many studies show that there are gendered differences in receiving emergency services and also in long-term outcome despite the same baseline functional status after an acute attack of Stroke (Knauff et al., 2010). Finding from a study conducted in rural India says that, there is statistically significant difference in place of death between men and women, with more men dying at hospital and more women dying at home (Kalkonde et al., 2015c).

2.8 Treatment Seeking Behavior

2.8.1 Behavior as a factor in Health

Human conduct is impacted by friendly, social, monetary, and political components which thusly identified with wellbeing, including the danger for irresistible illnesses like intestinal sickness. If it is purposeful, human conduct influences wellbeing advancing and infection forestalling exercises, in certain occurrences expanding hazard and others decreasing it.

There has been minimal expounded on friendly factors in the advanced resurgence of jungle fever. This is on the grounds that the focal point of general wellbeing and malariology, has been barely fixed on the parasite and the mosquito vector.

Inhorn and Brown (1990) have attested that, "Societies effectively change their biology in order to increment or diminishing the danger of specific sicknesses. What's more, in spite of Alland's 'minimax' hypothesis - which social framework social frameworks will in general support, rehearses which limit the danger of illness and expand the wellbeing and government assistance of gatherings. This may not generally lead to the decrease of irresistible infection. It might appear to be peculiar that individuals effectively change their biology such that will build hazard for sickness.

2.8.2 Health Seeking Behavior Model

Socio psychological behavior model of health and treatment seeking Behavior lays the foundation for the determinants of variables for KAP studies. The most used socio-psychological model in public health is Health Belief Model, Theory of Reasoned Action and its later modification to theory of planned Behavior which talks from the individual's point of view. The healthcare utilization model given by Anderson and elaborated by Kroeger in 1983 gives an extensive variable which affects the healthcare utilization.

2.8.3 Health Belief Model (HBM)

Sheeran and Abraham in 1995 gave health belief model. According to this model, actions are guided by:

1. Beliefs about the effect of ailment and its results (danger discernment) which rely upon:
 - a. Perceived helplessness, or the convictions about how weak an individual thinks about oneself corresponding to a specific ailment or medical condition.
 - b. Perceived seriousness of ailment or medical issues and its result. Wellbeing inspiration or preparation to be worried about wellbeing matters.
2. Beliefs about the outcomes of wellbeing rehearses and about the conceivable outcomes and the push to incorporate them. The social assessment relies upon:
 - a. Perceived advantages of preventive or helpful wellbeing rehearses,
 - b. Perceived hindrances, both material and mental.
2. 2. Cues to activity, which incorporates unique, interior, and outside factors, which impact activity.
3. Beliefs and health motivation are conditioned by socio-demographic variables (class, age, gender, religion etc.) and by the psychological characteristics of the interviewed person.

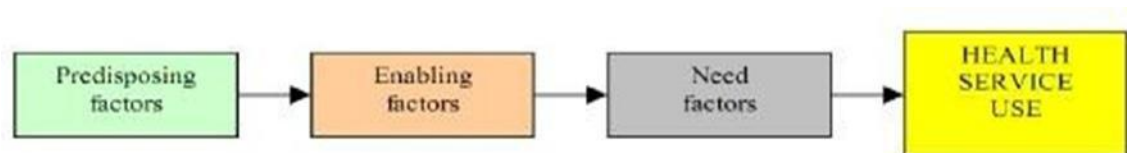


Fig 1 Health Belief Model Source: Sheeran and Abraham, 1995.

Perceived susceptibility, severity, benefits and barriers of the HBM are relevant factors in determining the health behaviour. For example, if in endemic areas if a particular disease is not considered as a severe disease and if people do not think that they are vulnerable to it then it will have a negative impact on the health and treatment seeking Behaviour.

2.8.4 Health care utilization Model

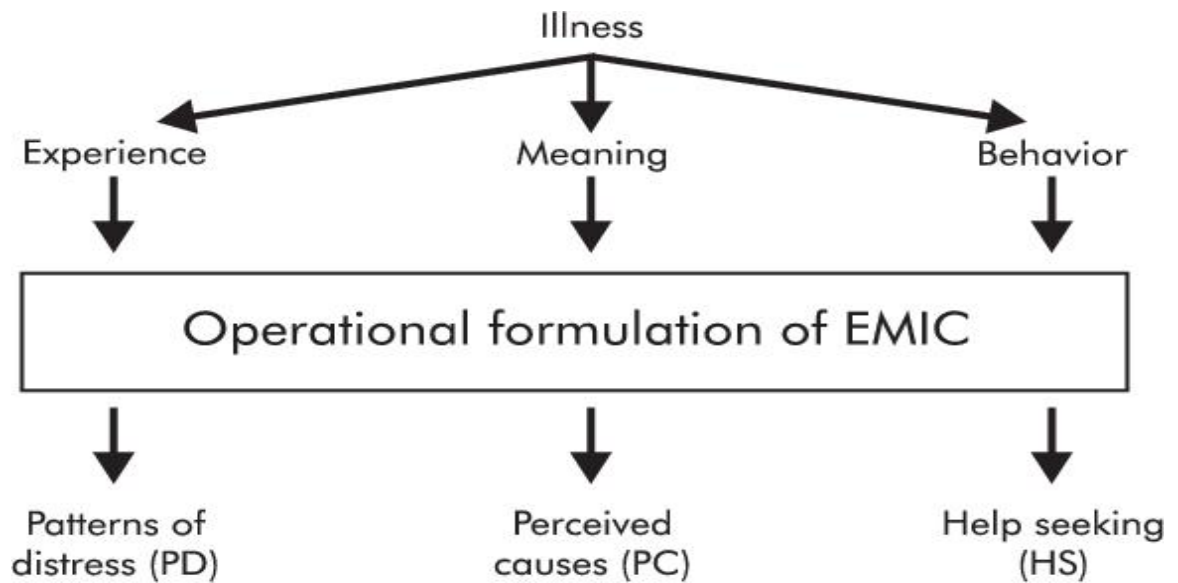


Fig. 2 Source: Weiss M, 2001, Cultural Epidemiology: an introduction and overview

2.8.5 Healthcare for Stroke in India

Healthcare available for Stroke in India can be divided into two broad categories- formal and informal healthcare. Formal healthcare includes management of Stroke with the use of modern medicine whereas, informal healthcare involve management of Stroke with the help of Complementary Alternative Medicines (CAM). There is noscientific evidence on the effectiveness of these alternative therapies for stroke rehabilitation. Well-conducted trials will be useful in defining the possible role of alternative therapies in the process of post stroke recovery (Pandian et al., 2011)

A. Formal Healthcare for Stroke in India

There are insufficient stroke units in India. India has a lot of 35 stroke units which are by and large situated in the private area emergency clinics in huge cosmopolites. Multifold of the private medical clinics don't have CT assessment complex and they apply stroke cases to other private emergency clinics or focuses as a trade-off for certain motivations. This causes crucial time misfortune. Then again, public clinical focus doesn't have a dedicated organization and spot to oversee stroke cases. Clearness of CT assessment is additionally an issue in both less open medical clinics just as in private emergency clinics (Pandian and Sudan, 2013c). Public Program for Avoidance and Control of Malignancy, Diabetes, Cardiovascular Complications& Stroke (NPCDCS) was begun by legislature of India for lessening the weight of major NCDs. The program gives accentuation on early choice, administration, raising setup and making public awareness for major on-transferable entanglements, including Stroke. (Public Program For Counteraction and Control of Malignant growth, Diabetes, Cardiovascular Infection and Stroke (NPCDCS) Service of Health& Family Welfare,n.d.)

B. Informal Healthcare for Stroke in India

Stroke registry situated in Mumbai proposes that one out of each three patients with Stroke are not getting to proper medical services. This might be because of excessively expensive expense of care, inclinations for elective medications, and trouble in transport (Dalal et al., 2008b).

Ludhiana, India additionally proposes that more than 33% patients are utilizing reciprocal elective medication (Pandian et al., 2012). A new local area based examination led in country region from India likewise tracked down that in about half (53.71%) of the stroke patients, casual suppliers or natural medication suppliers were the principal medical care suppliers after intense Stroke.

More than three-fourth of the stroke patients have sought care from the informal health care provider or herbal health care providers at least once (*Neuroepidemiology*, 2015b)

2.8.6 Treatment seeking behavior for Stroke in India

In a study conducted in Gadchiroli district of Maharashtra researcher concluded that healthcare utilization was seen according to the feasibility and ease to receive treatment. Most of the patient choose to accept treatment from the herbal medicine provider despite the study was conducted in area 30km radius from government facility. This qualitative study revealed that understanding of Stroke and its symptoms, perception about different types of available treatment, perceived barriers and conveniences, perceived severity of an episode, and past experiences with different health care provides facility play an important role in healthcare-seeking Behavior.

Seeking care from herbal provider is perceived as a more efficient option. Factors like presence of other member at the time of episode of Stroke, place of Stroke, and ability to recognize episode of Stroke play crucial role in determining delay in care sought from formal healthcare provider. There is a significant gap in the knowledge about recognition of symptoms of Stroke and consequences of delaying care. (Sahane, 2016)

2.9 Summary of Literature Review and Identified Gap in Literature

There are plenty of individual studies, systemic reviews and meta-analysis available on the current burden of Stroke and its projection for near future for developed countries. Large scale studies like, global burden of diseases, have data on burden of Stroke from developing world, but the data on healthcare seeking for Stroke in India is scarce there is no available literature describing reasons for the choice of healthcare provider, and treatment seeking behavior among stroke patients in India.

3. METHODOLOGY

The following framework for this study is an outline of the explanatory model of illness (by Kleinman) which has been modified to study the treatment-seeking Behavior of the patients of

Stroke in the district of Nagpur District. Impact on treatment-seeking behavior for Stroke due to lockdown imposed to prevent Covid-19 virus spread has also been included.

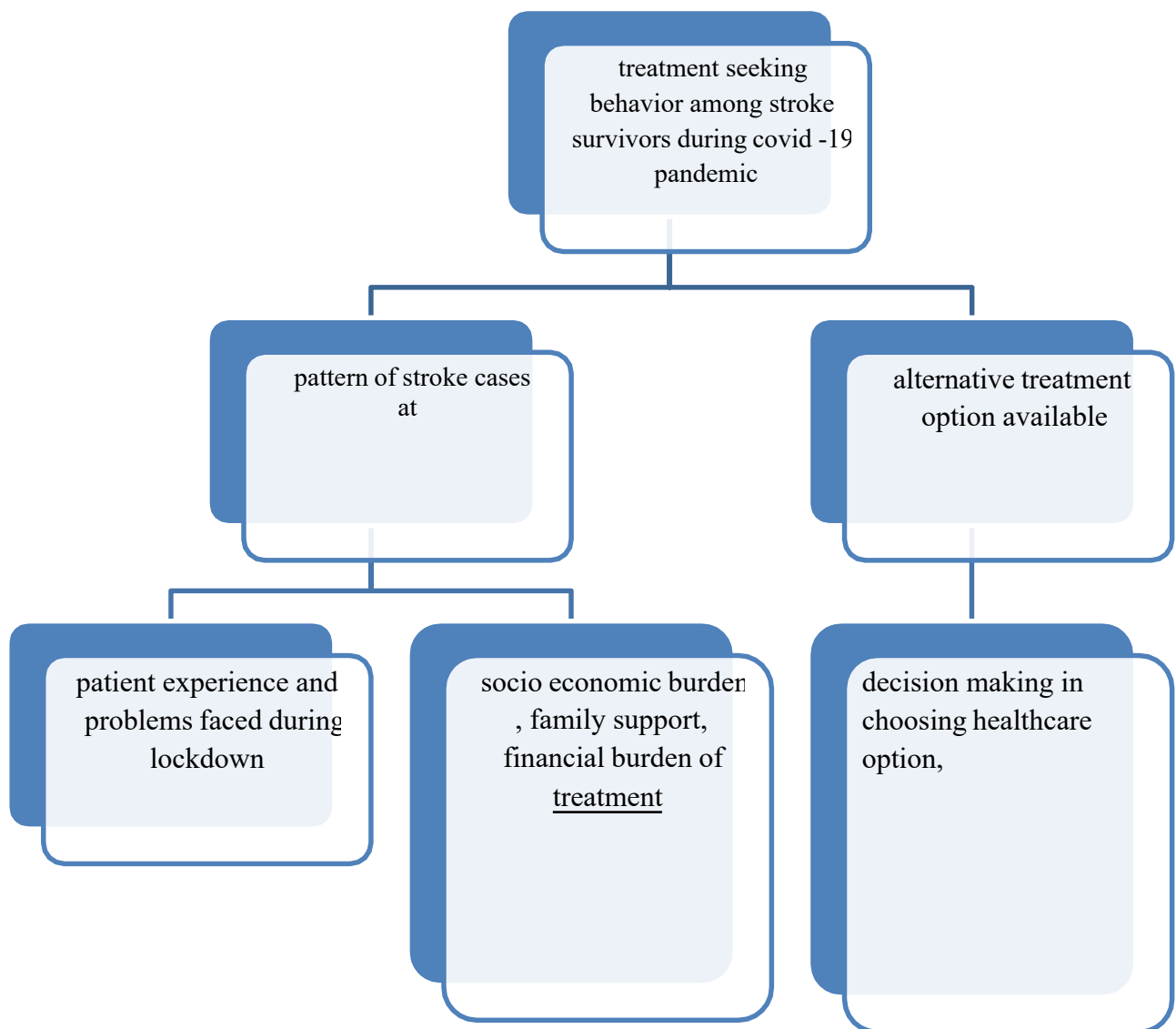


Figure3: Methodology

3.1 Design of the Study

The examination study was arranged to keep in see the previously mentioned reason and goals. To answer the destinations, Qualitative strategies are utilized with a bunch of information assortment devices that have helped in investigating the examination in a superior way. Qualitative research methods were used to conduct the telephonic interview and know the ~~ext~~ of health problems and treatment-seeking behavior in the study population. It also reflected the socioeconomic status and also the challenges faced due to COVID 19 pandemic restrictions of the study population.

3.2 Sampling procedure

The study focused on to understand the perceptions, awareness and ongoing treatment options and also experiences faced during COVID19 ~~study~~ by stroke patient. To fulfill the study objectives, the sampling procedure involved two steps

In the first stage, the researcher decided to look for the literature supporting the study's objectives and perform a systematic review to draw a pattern of stroke cases reported in hospitals and analyses them. Key findings were about the age groups of the cases reported in hospitals in India. Gender differences among stroke cases were reported and to look for any particular variations among stroke cases across social groups in India.

The second stage researcher tried to capture the lived experiences of the stroke cases through in-depth interviews with stroke survivors who had Stroke during lockdown due to covid-19 pandemic.

The Interview participant was divided into following age groups based on systematic review i.e.

- Less than 40 years
- 40 years to 59 years
- 60 years and above

Both male and female participants were interviewed verbally on the telephone due to social distancing norms. Interviews were conducted telephonically and there verbal transcription was noted down in their own language of communication i.e. Marathi. .

The purposive sampling method was used for the study design, and participants were finalized according to convenience and who were fit for the study. The stroke cases were identified with the help of a list of patients generated with the help of relevant sources like medical officers, community health officers, and ASHA workers who were known about the patient who are undergoing stroke treatment in their area of work in Nagpur district. Total 20 cases were initially identified as stroke cases that had undergone treatment during period of March 2020 till January 2021. Out of 20 respondents list, the cases were segregated according to inclusion criteria and willing to participate in the study. Around 10 participants were found suitable for study. Out of which 8 were ready to participate in the study. Two cases out of 8 respondents were purposively selected for the study as the cases were deceased persons. The story of the challenges they faced was narrated by their family members, which will help look for another dimension of the COVID 19 pandemic. All the interviews were conducted directly with respondents, and if they were unable to understand the questions were asked to take the help of their respected family members. The researcher had to face a drawback of having a telephonic interview as the actual situation, and emotional expressions were unable to capture on the phone. The researcher tried to conceal the emotional expression and stress the patient is undergoing an in-depth interview. The interview was conducted entirely on the feasibility of the respondents in between the hours of 9.30 am and 9 pm. And each interview last for about 15- 30 min

3.3 Unit of Analysis

For this research, the unit of analysis taken were individuals.

3.4 Research Tools

In-depth interviews were conducted by using an in-depth interview guide. Systematic review was conducted using PRISMA guidelines from a review of articles and literature. Tools were developed based on existing theories related to treatment seeking in general and treatment seeking for acute conditions in resource-poor setting identified from literature review. Also, tools were modified according to the context, based on the investigator's previous experience in community and with help from experts related to the study (guide from institute). Tools (guide for in-depth interview) were developed in Marathi considering local dialect and were then translated to English. Many local words are used for medical terms like describing symptoms of Stroke. Choice for appropriate word was made on the basis of previous experience, consultation with community health worker and some primary care givers for stroke patients from the field practice area in Nagpur.

These tools served only as guidelines to ensure that all important themes related to stroke stroke treatment have been explored. Sequence and wording of questions were changed depending upon the flow of conversation. When answers to questions were overlapped, then depending upon the situation, investigators skipped the few questions. Probes were used only when deemed necessary, either as an elaboration probe or a clarification probe, or a continuation probe. Also, each tool kept on modifying as newer information came.

3.5 Data collection method:

Researcher carried out in-depth interviews with the help of study tools developed for in-depth interview. In-depth interviews were audio-recorded (with participants' consent). Due to COVID 19 pandemic and social distancing norms all the interviews were conducted telephonically. No cases were visited home in order to maintain the safety protocol. In case if respondents are unable to understand any question or any network connectivity faced caregivers were requested to help them out and interviews were conducted in their presence only.

All potential participants were informed one day prior through community health worker. Researcher choose a neutral platform to talk so that, all participants will feel free to talk. Before beginning the interviews, participants were informed about the purpose of the study and informed consent were taken. Participants were also informed that there are no right or wrong questions and should freely narrate the event occurred. The Interviewer tried to hold his personal opinions and took notes whenever he deemed necessary. Duration of each in-depth interview was around 20 to 40 minutes.

Plan for Data Analysis

Primary data analysis-

All the interviews were audio-recorded (with participant's consent) and transcribed verbatim in Marathi and then translated to English. Data was analyzed using conventional qualitative methods that seek to identify themes. Researcher went through the transcripts repeatedly to get familiarize with the data.

To ensure anonymity, the names of the respondents are changed, and their respective healthcare facility visited name is not mentioned during the research. After each interaction, notes were written down. It was followed by a translating of data from Marathi to English. Since the details of each relation were significant, verbatim reiterations were performed. Next, a thematic analysis of the interviews in the light of the probing questions was done. While the investigator plays a major work in any qualitative probing for interpretation of the data, the emphasis presently to prioritize the words of the querists, followed by the observances and play-by-play of the investigator. New surfacing blocks were related and grouped under unifying tier. These tiers represent the arching themes that have cropped.

3.6 Ethical consideration

The entire purpose of the research study as well as the methodology to be adopted and the research tools were briefed to participant. Oral consent was obtained from every respondent before the commencement of the telephonic interview. The anonymity and confidentiality of all information shared was assured to them. The choice of the respondent to refuse to answer or skip any query was respected and adhered to.

3.7 STUDY FINDINGS

In an examination directed in Bangalore to reconnaissance Stroke occasions in the medical clinics: An aggregate of 1,174 cases were enrolled from the three clinics during the half year time frame. Stroke comprised 4% (1.5 to 7.5%) of loss enrollment, 5% (1 to 18%) of inpatient enlistments, 7% of clinical affirmations and 45 percent (22 to 60%) of nervous system science enlistments with rates fluctuating across foundations. The mean time of stroke patients was 54.5 ($\pm$ 17.0) year, with 66% (65.6%) being 50+ and 18 percent under 40 year (Fig.)? A more prominent prevalence was seen among men (67%) with a male to female proportion of 2:1. (Nagaraja, 2009)³ In an investigation led in all emergency clinics of Ludhiana of Punjab state. Out of 493 patients, 341 were from private medical clinics, 73 from check focuses, 63 from public medical clinics. The mean period of patients was 58 $\pm$ 15 years and there were 308 (62.5%) men. Larger part were Sikhs – 199 (49%). The female patient announcing was not exactly male.

The treatment seeking Behavior emphasized that the individual alone is not the sole decision maker regarding treatment but that an extended group of relatives and friends have a considerable say in the same and that during the course of the episode of illness, the involvement of these groups can change. This can, in effect, bring a change of health care provider by a switch from one modality to the other. Many people did not go to government hospitals due to fear of getting quarantined or COVID positive. There was a significant delay in seeking medical care and eventually not being eligible for the treatment. COVID 19 has affected the treatment seeking behavior in many ways. There was no satisfaction by the treatment given by the doctor as there was already burden of COVID cases. In many hospitals beds were not available. Denial of treatment due to Covid-19 burden.

4. Limitations of the study

The study conducted in depth interview telephonically due to COVID 19 social distancing

norms which have affected the quality of data as many attributes were unable to capture more intensely on phone. Being a qualitative study, the findings are very context-specific with a limited scope for generalization

5. DISCUSSION

An emergency clinic based observational cross-sectional investigation directed in the Branch of Nervous system science, AIIMS, New Delhi, India, over a time of 15 months from 2012 to May 2013. The examination was led to search for setting off variables of Stroke. On the whole, 290 patients who had later and first assault of Stroke were remembered for the examination the mean period of whole investigation populace was 54.1 years (SD 13.5). Stroke in youthful (age ≤ 40 years)

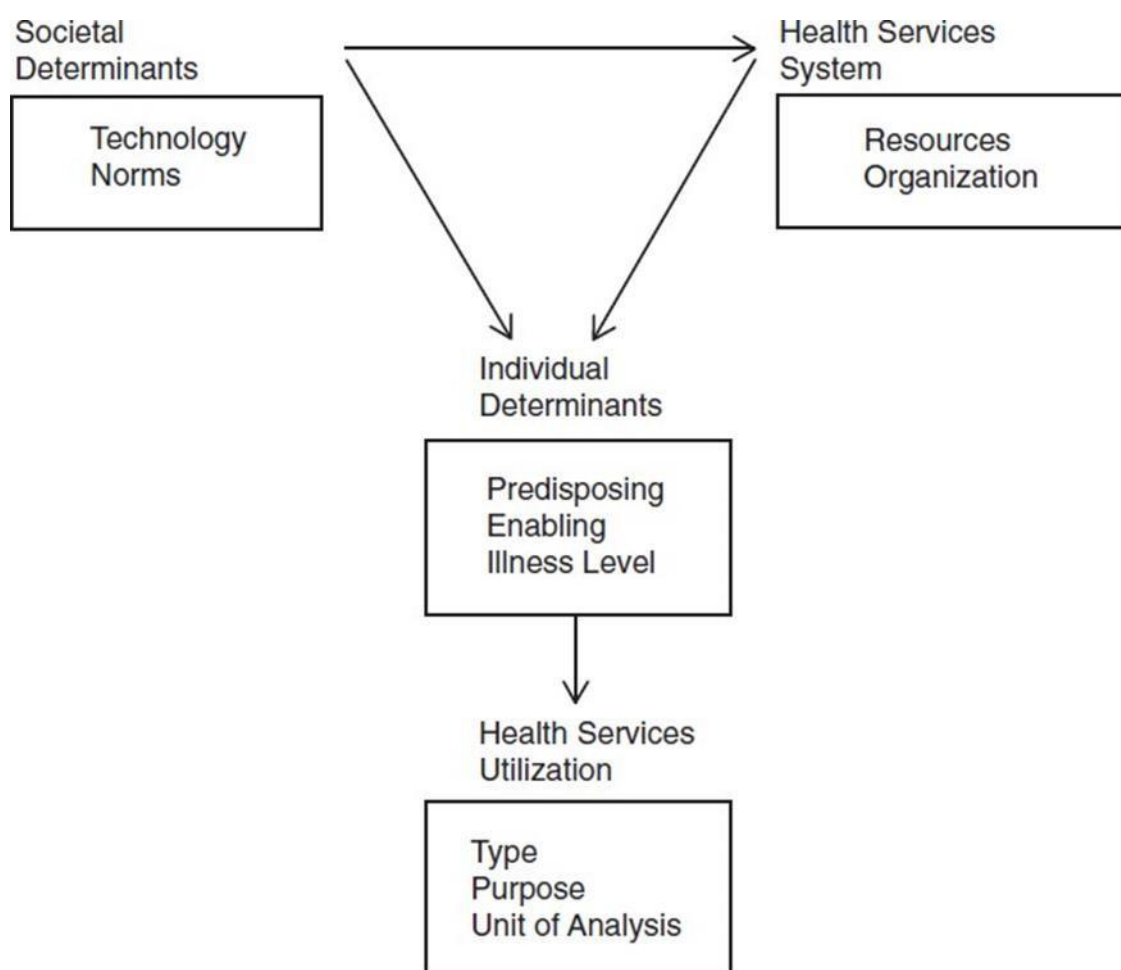


Fig 4. Conceptual framework of model:

The main societal determinants are said to be (a) Technology and (b) Norms. Improvements in technology have an impact on the diagnosis and prognosis of diseases thereby directly accentuating or alleviating the demand for Health services. Such favorable disposition from the consumers in turn heartens institutions to reciprocate by progressive augmentation of such services. The normative component is a reflection of the accepted beliefs and values that exist

in the society. This is consecrated by means of formal established legislations reflecting the collective will of the society. However, practices emanating from such beliefs are amenable to change as a resultant of wider acceptance of new developing technologies.

Collectively, these have a major sway over individual disposition to different kinds of health services and service providers.

Any health care system would have two fundamental dimensions – Resources and Organization. The labour such as Health personnel and the physical structures where health care is provisioned and the equipment's used for this purpose would define as resources. In other words, they are the investments that are made into the health care provision system. The organization would be responsible for the control and coordination of these resources for the objective of providing medical care.

Resources would again be identified with two important characteristics – volume and distribution. Volume would describe the quantitative availability of the resource in question, such as the existing ratios of the personnel to the population for different kinds of health services. Volume of the resource would underscore its availability to the population. Distribution refers to the geographical distribution of these resources. This again becomes an important factor for resource accessibility.

Similarly, organization too would be enumerated into two sub-components – access and structure. Access takes into account requirements that have to be met by the individual and barriers that have to be overcome before an individual can get medical care. These barriers may be manifold such as expenses for treatment, waiting time etc.

Structure would imply the characteristics of the medical system which would come into play in defining the processes the patient would go through post his entry into the system. All potential operational processes within the health care system such as therapy, follow-up, referral and the format of clinical practice adopted by a particular discipline would fall under the scope of structure.

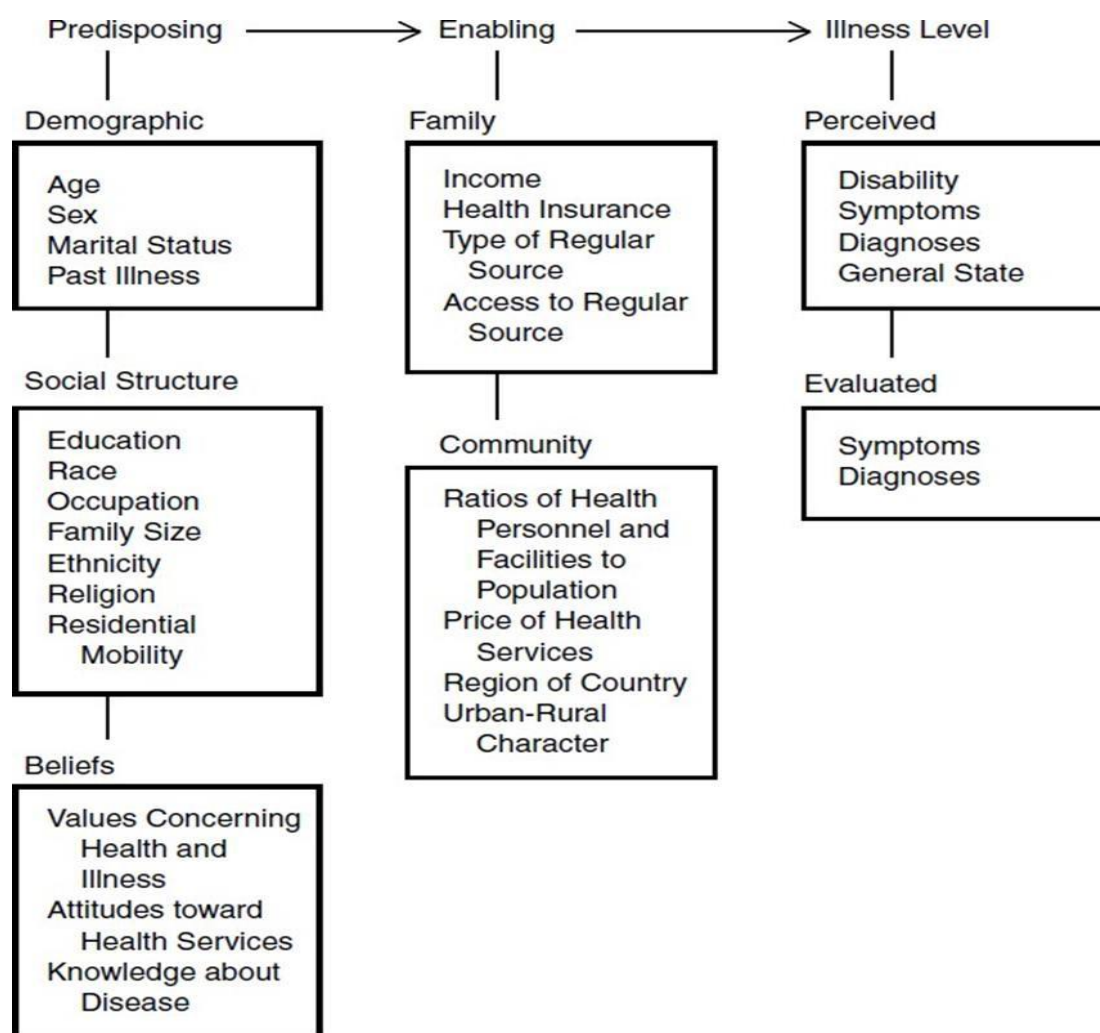


Fig. 5 Individuals determinants of health

The Individual determinants of Health care utilization have been broadly classified into three components – Predisposing, enabling and illness level. The elements that make up the predisposing component are those that are related to the demographic, social structure and beliefs of the individual. The demographic factors would be concerned with elements such as age and gender. Social structure in relation to the individual would be a determination of his significance within the larger community network and the position that he commands in relation to the same. This would be, to a large extent, dependent upon factors such as caste, education and occupation.

Beliefs would comprise of attitudes and knowledge regarding health which would have a major influence on the inclination to access or withdraw from particular health services. In a wider bonded community, there may be shared beliefs or subservience to dominant beliefs.

The enabling component is made up of elements that exist within the individual's family structure and those that are present in the community to which he belongs. From the perspective of the individual family structure, it can be said that the knowledge about health and health services and the requisite means to access them are significant. With respect to components present in the community, it would imply the existence of Institutions and human resources for health care.

Finally, the illness level looks at several planes of what is perceived by the individual himself and what has been subject to systematic and technically sound evaluation. Depending on the gravity of the discomfort that an individual experiences with his symptoms, he may categorize his need for health care. The more significance it is accorded to by the individual, the more rapid would be his response to seek treatment. On a similar plane, the physician's instinct to accord a particular level of healthcare to the individual would depend on his appreciation of the individual's need with respect to his current status. These are described by the terms perceived need and evaluated need.

Finally coming to Health services utilization, the important characteristics that would define the same would be type, purpose and unit of analysis. Type would denote the exact type of Health care that would be utilized by an individual such as Dental, Medical, and Hospital etc. Purpose will describe the focused or multiple levels of care such as Primary, Secondary,, and Tertiary etc. Of equal significance would also be the volume or the number of services that have been obtained by an individual during a particular period. The final element of consideration would be the nature of episodic care that an individual would have utilized for different illnesses or problems that he would have encountered. This would provide insights into the quality of care for different conditions, patient compliance and any form of referral adopted.

The concept of Treatment Seeking Behavior

Treatment Seeking Behavior could be perceived as activities that are received by people to track down a suitable cure when they see themselves as being sick or having a medical issue. Getting what motivates people to pick or move toward specific structures or trains of treatment is mind boggling and unavoidably represent factors that would oversee such dynamic like individual or potentially family conduct, local area standards and assumptions, and supplier related qualities and conduct (Olenja,2003).

Correlations between factors and outcomes are established with a good degree of predictability by Socio-Behavioral models. However, they are unable to pin-point as to how and why the different factors affect therapeutic selection (Weller et al, 1997). Another popular categorization of key factors by researchers for Treatment Seeking Behavior is the cataloguing into four A's, namely:

- Availability which considers the geographical distribution of health facilities, pharmaceutical products etc.
- Accessibility which covers modes of connectivity such as transport, roads etc.
- Affordability which implies expenses that are borne out of treatment for the individual and household.
- Acceptability deals with characteristics of the health providers such as the attitudes of the health workers, gender aspects, bureaucratic control etc. in relation to the cultural and social sensitivities of the target community.

Pathway models have been used by researchers to explain Health Care Utilization Behavior. This focuses on a path that an individual is likely to follow commencing from the recognition of his illness and his perception regarding the same ultimately leading him to utilize varied health services. The intervening component between perception of illness and choice of health service is the 'significant others' (Good, 1987). It emphasizes that the individual alone is not the sole decision maker regarding treatment but that an extended group of relatives and friends have a considerable say in the same and that during the course of the episode of illness, the involvement of these groups can change.

This can, in effect, bring a change of health care provider by a switch from one modality to the other.

Ethnographic decision-making models have also been employed in research to predict Health Care Utilization Behaviour. The main idea espoused by this model is that there is never a spontaneous or random choice exhibited by the individual in the choice of his Health Care Provider and is rather always the outcome of the pursuance of a predefined pattern (Garro, 1998; Ryan 1998). In the case of illnesses which are non-severe in nature, people tend to commence care with low cost treatments and progress to higher treatments only in the event of their prior attempt failing or their ignorance regarding treatment of the same. However, in serious illnesses, the primary desire of an individual becomes the probability of cure and this overrides all treatment expense concerns (Garro, 1998).

Waiting for a disease to evolve in terms of severity so as to help in its better identification and maximizing treatment modalities to benefit from at least one potential variety have also been described as key strategies under these models (Ryan, 1998).

Pathway models

This is a model where paths taken from symptom recognition to the use of different health services (home treatment, traditional healer, biomedical facility) are followed. The role of relatives and friends in the decision making process is given importance. This decision making process is an important aspect in health seeking Behaviour of the elderly because of their dependency on others. Usually, in this model the path to the first contact with a health facility is traced.

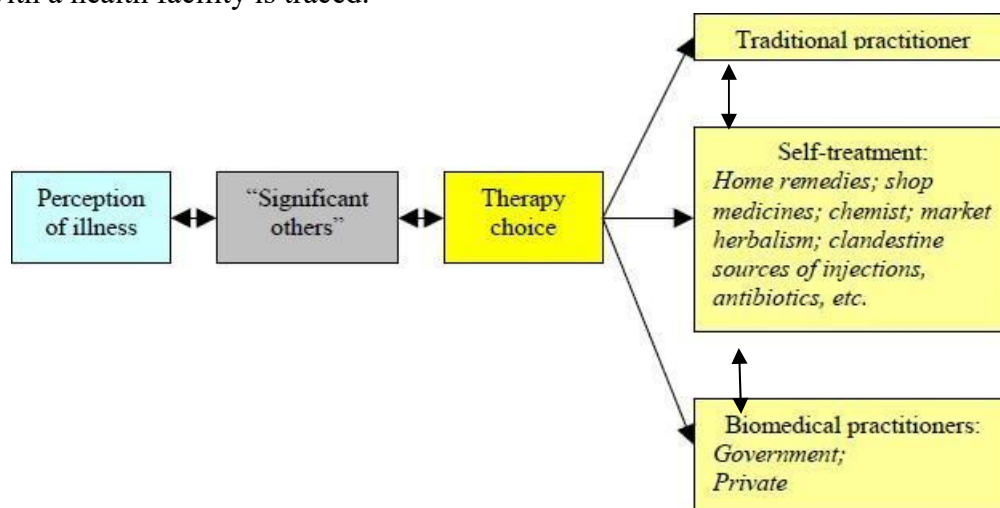


Fig. 6 Pathway Model

'Significant others' are important for the 'treatment overseeing bunch', an idea explained by Janzen, which is the key for understanding choice is making in restorative cycles. This thought difficulties the solid accentuation on the individual and stresses the essential part of broadened gatherings of family members and companions in sickness arrangement and the board. Over the span of the ailment scene, the association of care groups in ailment the executives can progressively change. Pathway models recognize these elements of ailment and dynamic.

The vast majority of the examinations which use pathway models research the way until the main contact with a wellbeing office. All the more as of late, there has been an expanding accentuation on progressive treatment decisions. Nyamongo explained a spellbinding model which incorporates treatment successions for jungle fever in a Kenyan people group, thinking about various elements (for example term of ailment, information) and rationales (for example limiting consumption) which decide treatment decision and changing starting with one methodology then onto the next.

The strength of pathway models is that they portray wellbeing looking for as a powerful cycle. Elements are successively coordinated, as per the diverse key advances (for example

acknowledgment of indications, dynamic, clinical experience, assessment of results, and re-translation of ailment) which decide the course of the treatment way. (Susanna et al, 2003)

Cultural Epidemiology

The EMIC system for social investigations of ailment was created because of such requirements, and a social the study of disease transmission arose out of that structure as an interdisciplinary field of exploration on locally substantial portrayals of sickness and their disseminations in social setting. These portrayals are determined by factors, depictions, and story of sickness experience, its significance, and related disease conduct. Specific intuitive subjective and quantitative examination strategies give an illustrative record, work with correlations, and explain the social premise of hazard, course, and results of useful importance for clinical practice and general wellbeing. The need that Arthur Klein man's plan of informative models provided for sickness experience, causal clarifications, therapy impacted the advancement of the EMIC.

The term 'emic' signifies an insider's or people point of view and this is the thing that the examination attempts to center as far as the disease experience, thus the utilization of the EMIC has demonstrated a reasonable system for the investigation. The design of EMIC system centers around disease experience, its importance, and related conduct, which have been made functional as examples of pain (PD), saw causes (PC), and help-chasing conduct (HS) (WEISS, 2001) included 55 (19%) patients; 210 (72.4%) patients were men with contrasted with female 80 (27.6%). Presence of any trigger factor out of 11 trigger elements examined was seen in 128 (44.2%) of 290 patients, 104 (46.4%) of 224 ischemic stroke patients and 24 (36.4%) of 66 hemorrhagic stroke patients. Mental pressure was available in 51 (17.6%) patients, among mental pressure: upsetting life occasion in 34 (11.7%), negative effect in 17 (5.9%), intense liquor maltreatment in 31 (10.7%), clinical contaminations in 24 (8.3%), and outrage and espresso consumption in 12 (4.1%) each. Sexual movement, injury, and medical procedure were available in 5 (1.7%), 4 (1.4%), and 5 (1.7%) patients, individually. (Ashish Sharma, 2015)²

In an examination directed in Bangalore to reconnaissance Stroke occasions in the medical clinics: An aggregate of 1,174 cases were enrolled from the three clinics during the half year time frame. Stroke comprised 4% (1.5 to 7.5%) of loss enrollment, 5% (1 to 18%) of inpatient enlistments, 7% of clinical affirmations and 45 percent (22 to 60%) of nervous system science enlistments with rates fluctuating across foundations. The mean time of stroke patients was 54.5 ($\pm$ 17.0) year, with 66% (65.6%) being 50+ and 18 percent under 40 year (Fig.)? A more prominent prevalence was seen among men (67%) with a male to female proportion of 2:1. (Nagaraja, 2009)³

In an investigation led in all emergency clinics of Ludhiana of Punjab state. Out of 493 patients, 341 were from private medical clinics, 73 from check focuses, 63 from public medical clinics. The mean period of patients was 58 ± 15 years and there were 308 (62.5%) men. Larger part were Sikhs

– 199 (49%). The female patient announcing was not exactly male. (Pandian, 2011)⁴

In an investigation led in Trivandrum out of the 541 approved first-historically speaking stroke occasions found out during the examination time frame, 431 happened in the metropolitan local area and 110 happened in the country local area. The middle period of stroke patients was 67

years, which didn't vary among metropolitan and rustic populaces. 77% of patients were matured ≥ 60 years. Stroke in the youthful, characterized as first Stroke happening at ≤ 40 years, included just 18 (3.8%) patients in this populace based investigation. The occurrence rates expanded consistently with age for the two sexual orientations in metropolitan and rustic networks. (Sapna E. Sridharan, 2005)⁵

In a cross sectional investigation led from Aug 2015 to Jan 2016 in tertiary consideration emergency clinic in South west of Rajasthan to search for socio segment and facility radiological profile. The examination bunch comprised of 360 patients out of which 215 (59.7%) had a place with country and 145(40.3%) to metropolitan populace. Greater part (29.8%) of stroke patients were in age bunch 60-69 years. Mean time of stroke patients in our investigation was 60.46 ± 14.84 years. Most youthful patient was of 19 years and most seasoned was of 95 years old.

There were 217(60.3%) guys and 143(39.7%) females. The proportion of male to female is 1.5:1. 42 (11.7%) patients were under 40 years of which 26(61.9%) were guys. In the study larger part of patients announced were from provincial region. Study has male female proportion of 1.5: 1 recommending the commonness of all the more no. of male with a mean age gathering of 60-69 yr. (Gurdeep Kaur¹, 2020)⁶

The current examination was led in the Department of Stroke at MGM Hospital, Warangal, India, to consider the examples of stroke confirmations. The mean period of study populace was discovered to be 58.9 ± 18 . Just 2.7% of stroke occurrences happened in individuals matured ≤ 40 years old, 4.9% of cases concerned individuals somewhere in the range of 41 and 50 years of age, 18.2% of the episodes happened when the subjects were somewhere in the range of 51 and 60 years of age, and in 74.2% of the cases, the people were ≥ 60 years old. Study is proposing that there is higher commonness of Stroke among individuals who are ≥ 60 years old. (Sarangapani, 2020)⁸.

The prevalence was double among men compared to women. Stroke is emerging as a public health priority in rural India.

Studies on Stroke in India predicting the hospital based registries of stroke cases were identified and compared by researchers to explore stroke cases reporting at hospital. The case study method use in the research further tries to look for stroke cases reporting according to age, gender, regional differences and rural and urban areas. Researcher had tried to support the systematic review with the in depth interview conducted among stroke cases. The purpose of the systematic review was to examine age, gender, regional differences in importance of stroke health beliefs to seek treatment for the illness.

Distribution of stroke cases across age, gender:

Our review showed that the mean age of the patients in each of the study varies from 54.5 year – 67 year. In a hospital based study in Chennai 77.8% of the people belong to 50-79 years of age. Also severity of disability and mortality due to Stroke is suggested to be more

in 6th – 8th decade of life. (Deepak Arjundas¹, 2007)¹. Thus most of the stroke cases reporting the hospitals are from age groups from 54yr of age and above. It is assumed that the average age of patients with Stroke in developing countries is usually 15 years younger than those in developed countries. (Jeyaraj Durai Pandian, 2013). The detailed overview shows that the prevalence of stroke cases according to age group are 40 years and below less cases of Stroke have been registered, while more no of cases are from >50yr and above. Stroke occurs more in person above 50 years of age and no regional variation in north, south or central India was observed in study. Stroke comes in all ages but more likely to be in age where person is 50 yr of age and more. Among the respondents characteristics the mean age is observed to be 56 years with age ranging from 39 yr to 75 years, which is significantly same as observed in the secondary review. The age of the person is observed to be a peculiar characteristic among the respondents and review. Gender has an important attribute to look for occurrence of disease. Male and female variations are observed in all of the studies. The number of male cases reported are observed to be more than that of female. Study shows that male cases reporting to hospital is two third of the female cases reporting for Stroke. It is observed that age factor is common among male and female cases in India but the incidence of stroke reporting is more among men. There is no evidence in literature review of reason behind the low reporting of female patients compared to male researcher concluded based on observations that women somehow fail to report her conditions about Stroke as more priority is given to male counterpart. Gender differences somehow effect the treatment seeking behavior of person as women choose to wait for the severity of symptoms and men acts more rigourously to any illness as observed among respondents of the study

The study conducted in AIIMS Delhi which looked for triggering factors of Stroke shows that psychological stress, stressful life event were responsible for Stroke. Stress can be considered as non-clinical factor the Stroke

The literature on social group and stroke cases is very minimal. Researcher had observed that some of the studies with demographic factors had captures the social variations. In a study conducted in Jharkhand among tribal and non-tribal it is observed that tribal have high incidence of Stroke with compare to non-tribal populations. Significant age differences are observed in the study. The study has suggested that the mean age of stroke patients among tribals people are more than among the non tribals. Also the young individual from age group 15yr- 49yr is more among tribals than non-tribals. Tribals have early onset, poor outcomes and higher proportion of Stroke compared to non-tribals (Singh, 2012). These difference can be inculcated in the study from a perspective of cultural differences and beliefs in the area. People who are residing in remote areas have less access to health facilities there geographical characteristics effect there decision making and making them more vulnerable. Two of the investigations in the survey have caught the provincial populace of

India. It is noticed not very many investigations on Stroke have zeroed in on the metropolitan provincial polarity. It is questionable with respect to whether the metropolitan country contrasts in the epidemiological files of Stroke saw in these examinations are genuine or could be clarified by the dissimilarities in the nature of the information, which are harder to get dependably in a rustic setting contrasted with a metropolitan setting. In view of the segment progress happening in greater part of non-industrial nations as of late, the metropolitan provincial contrast in the danger factor dispersion is quick vanishing. In Trivandrum, more provincial male with Stroke. There were more strokes dubious sort in the provincial local area in view of an absence of accessibility of imaging data. The stroke frequency didn't contrast among metropolitan and rustic networks. Essentially a greater amount of our provincial patients contrasted with metropolitan kicked the bucket inside multi month, presumably reflecting lacking offices in the country region to oversee them during the early post stroke time frame. (Sapna E. Sridharan, 2005).

Covid-19 lockdown and Stroke treatment

- The growing coronavirus disease 2019 (COVID-19) pandemic has posed major challenges on acute stroke care in several aspects. As the pandemic is rapidly evolving, there has been a rise in calls for social distancing, limiting unnecessary interactions and physical contacts, and even mandatory quarantine and isolation in many countries.
- Many people did not go to government hospitals due to fear of getting quarantined or COVID positive.
- There was a significant delay in seeking medical care and eventually not being eligible for the treatment. COVID 19 has affected the treatment seeking behavior in many ways.
- There was no satisfaction by the treatment given by the doctor as there was already burden of COVID cases.
- In many hospitals beds were not available
- Denial of treatment due to Covid-19 burden.

6. CONCLUSION

Healthcare systems utilization is determined by the behavior of the beneficiaries who utilizes this service. To achieve enhancement and improvement in this domain it can be fulfilled by taking into considerations understanding of these beneficiaries and thus try to shape further approach with the help of these needs of the beneficiaries. To get a knowledge of these viewpoints it is basic to dive further into getting this individual behavior of the beneficiaries (recipient) in the field of medical care.

Literature review on treatment seeking behavior suggests that it follows a fixed model in light of which a few significant elements that can be perceived by individual point of view get disparaged and a more profound understanding from the beneficiaries and a deeper insight from the beneficiaries is missed out, this was also observed specifically in case of Stroke. Stroke related study mostly focused on prevalence and incidence and clinical factors as concluded from the study stroke had a varied trend, it comprised of loss enrollment, inpatient enlistment, clinical affirmations and nervous system science enlistments with rates fluctuating across foundations.

The treatment seeking Behaviour emphasized that the individual alone is not the sole decision maker regarding treatment but that an extended group of relatives and friends have a considerable say in the same and that during the course of the episode of illness, the involvement of these groups can change. This can, in effect, bring a change of health care provider by a switch from one modality to the other

Many people did not go to government hospitals due to fear of getting quarantined or COVID positive. There was a significant delay in seeking medical care and eventually not being eligible for the treatment. COVID 19 has affected the treatment seeking behavior in many ways. There was no satisfaction by the treatment given by the doctor as there was already burden of COVID cases. In many hospitals beds were not available. Denial of treatment due to Covid-19 burden. Studies on treatment seeking behavior on Stroke in India also focused only on the quantitative approach to the individual's behavior. The descriptive and exploratory focus over individual's perspective about the illness behavior is overlooked somehow in the literatures for Stroke in India.

Utilization of programs is effected due to these pre fixed ideas and leads to its failure due to absence of understanding about the inclinations of communities and people which together builds the community. The point focused on here is the need to incorporate the individual viewpoints of the recipients to use the existing resources in a productive manner. The acknowledgment of any medical services by masses is the marker that it obliges their prerequisites. In a general public with various choices of medical services which use various concepts of medication for treatment there are bounty choices for the patients to browse. A comprehensive methodology towards every one of these choices should be utilized to get a more extensive image of the situation. Considering opinions about these people who also utilizes various other forms like alternative medicine and traditional

medicine from herbal medicine provider depicts a scenario of lacunae amongst the existing healthcare model and by doing so an endeavor to bridge these gaps can be made. In order to bridge these gaps a qualitative exploratory approach is made by researcher in this study to look for the treatment seeking behavior among the stroke cases which helped to get a better insight about the experiences that patients undergo to seek treatment.

Lack of knowledge about the disease and certain misconceptions about the symptoms of stroke changes the entire course of treatment is observed. There is a significant gap in the knowledge about recognition of symptoms of Stroke and consequences of delaying care. Severity of episode emerged as one of the key themes in determining the course of action to seek treatment and also choice of a particular health provider. This finding coincides with the health belief model developed to predict healthcare seeking Behaviour, where perceived severity of episode is one of the determinants in deciding the future course of actions (Abraham et al., 1996).

Past experiences with health care provider and facility emerged as one of the key themes for healthcare seeking for Stroke. Experiences of respondents were mainly negative when it came to the government facility. The study conducted in AIIMS Delhi which looked for triggering factors of Stroke shows that psychological stress, stressful life event were responsible for Stroke. Stress can be considered as non-clinical factor for the Stroke. These negative experiences constitute experiences such as lack of attention by the health staff, delay in the admission process and asking more money for drugs and intravenous fluids and shifting the patient from one place to other. These issues mainly originate because of the structural and managerial problems like, shortage of health staff, management of drug supply etc. The rude behavior of healthcare provider in government facility also suggests the possibility of class-based discrimination, as majority of the population belongs to lower socioeconomic status and also rural background.

Respondents in the study belonging to urban area have seek better and immediate treatment than semi urban and rural areas. Accessibility to health facility which is nearby during the emergency decides the course of treatment. Non availability of modern medicines in rural areas are more likely to rely on herbal medicine. Medical pluralism is the coexistence of various systems of medicine without disturbing the harmony with one another. Among the patients taking treatment from various systems of medicine this practice of pluralistic treatment seeking or shifting of treatment was observed more in case of stroke patients. The pluralistic nature of treatment is common in this area, where people have been taking treatment from different providers. In such cases, the formal healthcare facility and provider needs to be more sensitive towards patients and their beliefs rather than just ridiculing them. People often felt discouraged to seek care from government facility after such episodes. Many perceived barriers like- access to money in case of an acute event like Stroke, availability of the means of transportation and roadblocks, can be

attributed to the larger socioeconomic and political context. There is no security in terms of availability of work and money which makes the situation far more difficult in an event like Stroke, as people do not have enough savings to bear the catastrophic expenditure.

Almost all of the respondents in the study have agreed to take herbal medicine from traditional healer for Stroke. In a study conducted on alternative medicine use among stroke patients also talks about similar findings. (Jeyaraj Durai Pandian, 2012)

Convenience in seeking healthcare from an herbal provider is mainly on account of flexibility in accepting money and there is also no need to bring patient to provider. Thus, the convenience of seeking health care from an herbal provider is, to some extent, the result of barriers such as, availability of money and means of transportation. Findings like flexibility in accepting money and low cost of treatment emerged as one of the crucial factors for the choice of a specific provider.

Herbal providers are strongly relying on oil and powdered form of herbs thus there was strong faith in treatment given by herbal provider due to the thought of herbal medicine less harms to body. The self-limiting nature of disease helped in reinforcing this faith, as recovery from Stroke was often attributed only to oil massage.

There was very strong interconnection between Vata and Stroke. A similar finding was also found in a study conducted in Asian population, where seeking healthcare from herbal provider is prevalent in 'chronic disease triad' (arthritis, musculoskeletal disorder and Stroke)(Lee et al., 2004). The local word '*vata*' was used by to describe Stroke, and to link with other disorder like arthritis. Herbal treatment provided for Stroke and arthritis was same. Reputation of these traditional herbal medicines was determined by his expertise in treating '*vata*' in general.

COVID -19 lockdown has also impacted the treatment seeking behavior, fear of getting quarantine and isolation had made people to choose for private or alternative health systems provider for Stroke. Roadblocks and travel restrictions have also impacted as it causes delay in seeking treatment. Availability of other facilities and admission of patient at the hospital was also seemed to have impacted the treatment seeking behavior.

Hospitals involved in providing care to COVID patients have somehow shown less concern for non COVID patient those having other illness. Public health facility seem to be more engaged in COVID 19 patient management, thus patients seems to rely more on private facility for emergency care, who also have set their protocol for hospitalizing patient, changes in the admission fees, availability of specialist doctors for specific illness. Huge new reform is seen in the health systems due to COVID pandemic. Stroke patients seem to be more convenient in seeking treatment from herbal medicine provider easily despite of the pandemic and all restrictions. It is observed that the treatment seeking behavior of the patients is mostly affected by changing norms which emerged newly in the pandemic situation. The awareness for Stroke needs to be increased to increase the utilization of available qualified health care provider.

7. RECOMMENDATIONS

Given the rising stroke burden, there appears to be an urgent need to develop stroke systems of care in India with the help of telestroke services throughout the country. One of the potential solutions could be the use of telestroke to provide improved access to patients mainly from rural areas in order to bridge a significant gap in stroke care. Telestroke has proven to be a powerful tool in advancing stroke care in many countries by increasing the number of patients getting thrombolysis and by properly triaging patients, which helps in reducing the socioeconomic burden on the healthcare system. With the growing use of smartphones in India, efforts should be made to use this technology for stroke education, treatment, and rehabilitation.

Prevention of Stroke is one of the best cost-effective strategies given the social and economic factors in India. Awareness drive should be stepped up in India. Efforts should be made for primary and secondary prevention, which appear to be very cost-effective tools in reducing the stroke burden.

Other potential areas for improving stroke care are by establishing stroke centres in referral hospitals at the district level with appropriate system of care. The integration and adequate utilization of different health programs should be emphasized with a common goal, for example, utilization of primary health care workers for stroke education in addition to providing antenatal care or common protocols/policies for Stroke, trauma, and STEMI.

8. REFERENCE

- (2010, March 2). Retrieved from stroke association: strokeassociation.org/presenter.jhtml?identifier=4716
- Ashish Sharma, D. K. (2015, January). Prevalence of Triggering Factors in Acute Stroke: Hospital-based. *Journal of Stroke and Cerebrovascular Diseases*,, 337-347.
[doi:dx.doi.org/10.1016/j.jstrokecerebrovasdis.2014.08.033](https://doi.org/10.1016/j.jstrokecerebrovasdis.2014.08.033)
- Deepak Arjundas1, U. P. (2007). Surveillance of Stroke: WHO STEP-wise

approach: A Chennai stroke unit report. *Annals of Indian Academy of Neurology*, 154-159.

- Feigin VL, L. C. (2003). Stroke epidemiology: a Review of population based studies of incidence, prevalence, and case-fatality in the late 20th century. *Lancet Neurology*, 43-53.
- Gurdeep Kaur¹, N. S. (2020, march). A Study of Clinico-radiological and Socio-demographic Profile of. *Journal of The Association of Physicians of India* ■, 145-155.
- Horton R, D. P. (2011). Indian health: The path from crisis to progress. *Lancet*.
- Ihaji E, G. E. (2014). Educational level, sex and church affiliation on health seeking Behaviour among parishioners in Makurdi metropolis of Benue state. *JEPER*.
- Jeyaraj Durai Pandian, M. D. (2012). Complementary and Alternative therapy Medicine Treatments Among Stroke Patients in India.
- Nagaraja, D. (2009). Feasibility study of stroke surveillance: Data from Bangalore, India. *Indian J Med*, 396-403.
- Natalie C, I. M. (2003). Measuring chronic patients' feelings of being burden to their caregivers: Development and preliminary validation of a scale. *American Public Health Association* 41:, 110-118.
- Neelanjana Paul¹, S. D. (2013, September). Depression among stroke survivors: a community-based, prospective study from Kolkata, India. *The American Journal of Geriatric Psychiatry*, 10. doi: 10.1016/j.jagp.2013.03.013
- Pandey AS, R. A. (2020). Minimizing SARS-CoV-2 exposure when performing surgical interventions during the COVID-19 pandemic. *J Neurointerv Surg*.
- Pandian, J. D. (2011). Establishment of Population-Based Stroke. *Neuroepidemiology*, 69-77. doi:10.1159/000371520
- PN Sylaja, M. D. (2018, January). Ischemic Stroke Profile, Risk Factors and Outcomes in India: the Indo-US Collaborative Stroke Project. *HHS Public Access*, 10. doi:doi:10.1161/STROKEAHA.117.018700.