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Research Article

ASSESSMENT OF MEDICAL DEVICE USAGE IN NON-COMMUNICABLE DISEASES AMONG PATIENTS DWELLING IN SOUTH INDIAN DISTRICT

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Abstract:

In the present situation, the incidence of non-communicable diseases was ubiquitous, so to assess the usage of medical devices for disease management in the urban and rural settings of a south Indian district. A study was carried out for 1.6 years. 1024 subjects had been recruited, fifty-four percent had been male and forty-five percent had been girl; seventy-three percent of topics were literates (who had completed their matriculation) and twenty-six percent had been illiterates. Subjects occupation demonstrated 82.03% (n = 840) of subjects were daily wage labors and 17.96% (n = 184) of subjects were salaried. Various diseases among them are diabetes and hypertension, constituting 70.70%. Medical devices usage was assessed among 520 subjects and 327 (68.65%) and 193 (37.11%) subjects of urban and rural areas, respectively were found. Commonly used devices among them are glucometers, digital BP apparatus, thermometer, pulse oximeter, and inhaler machine constituted about 35.96, 15.76, 34.42, 4.80, and 9.03%, respectively. The overall incidence of medical device usage among masses was 50.78% and with a slightly higher percentage in urban areas as compared to rural. Thus, this sort of novel study should be conducted in this jetage, as this was the need of the hour, so to meet the galloping speeds of technology.

Keywords: Non-Communicable Diseases, South India, Medical Device, Disease Management

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INTRODUCTION:

properly, all of us recognize from a while that “healthy is rich”, however in the gift gravity of the scenario to reach the pinnacles, the person was neglecting his health owing to rapid industrialization, urbanization and was living in a global of lifestyle sicknesses comprising of diabetes, weight problems and heart sickness have come to be pretty commonplace among people of every age in particular because of bad eating conduct, sedentary every day workouts, paintings or non-public stress and absence of ordinary exercise. the burden of this non-communicable ailment (NCDs) changed into usually located among low-and middle-earnings countries and accounting nearly eighty% of all untimely mortality. ^(1, 2,3,4)

In such a heartwarming state of affairs, it changed into critical to often show the severa critical signs and symptoms like frame temperature, blood pressure, coronary heart charge or pulse, and respiratory fee or breathing charge. together with those parameters, regular tests of blood sugar levels and frame weight modifications were additionally considered large. The maximum commonly used medical devices had been blood glucose monitors, pulse oximeters, blood pressure video display units, pedometers and weighing scales, thermometers and the principle advantage of steady inspections of critical body metrics permits within the early and spark off evaluation of great illnesses and can improve the effectiveness of treatment and exquisite of lifestyles. on this regard, an assessment study on the use of commonplace clinical gadgets in facilitating the everyday assertion of the chief body attributes, all in the consolation of someone’s home become finished. ^(9, 10, 11, 13, 14)

To carry a drastic exchange in this pathetic and empathetic situation, a potential observational look at become performed within the South Indian district i.e Kadapa area of Andhra Pradesh specializing in the use of commonplace scientific devices used inside the management of NCDs. subsequently, the conduct of this kind of research paintings shall come to the rescue of mankind and create consciousness about NCDs and enhance wholesome way of life picks. It become determined that a observe performed inside the rural location of Konaseema Institute of medical Sciences confirmed the prevalence of high blood pressure and diabetes amongst geriatric sufferers. (1) In every other observe within the rural subject exercise area of a scientific university in Pune, India the burden of diabetes became studied in a go-sectional observe. ⁽¹²⁾

MATERIALS AND METHODS:**Study Setting**

Andhra Pradesh is a southern nation located inside the southern place of India. Kadapa district of Andhra Pradesh state became selected for the have a look at and this was carried out in each urban and rural areas of Kadapa district.

Study Group

Adults of both genders suffering from non-communicable illnesses and dwelling in urban and rural regions of Kadapa district comprised the observe group

Exclusion Criteria

1. Vulnerable populations like pediatrics, geriatrics, pregnant and lactating women were excluded.
2. Mentally challenged people were excluded.
3. People who had not given their consent were excluded.

Data Collection

Data were obtained by interviewing each subject and socio-demographic details such as age, gender, marital status, occupation, and education were obtained. History and family history of comorbidities, substance abuse, dietary habits, and awareness of any medical emergency number and this cross-sectional study were conducted for 18 months and medical history of the subjects were collected with the consent of masses of age ≥ 35 years and < 65 years of both the genders were included in the study and this survey was conducted as per the questionnaire prepared and evaluated. Ethical clearance was obtained before the written (or thumb impression) consent was obtained from each subject and the nature and purpose of the study were explained and were assured privacy and confidentiality of the information provided by them. Data collection was been done by the principal investigator. The facts were entered in Microsoft excel and have been analyzed for the percentage of topics who were aware of NCDs and the usage of scientific devices for its management.

RESULTS:

After the final screening of 3000 population in Kadapa district of Andhra Pradesh and 1024 subjects met the criteria (34.13%) and 54.68% (n = 560) of subjects were male and 45.31% (n = 464) subjects were female and this was demonstrated in figure 1; 73.92% (n = 757) of subjects were literates and 26.07% (n = 267) subjects were illiterates and this was described in figure 2. Occupational status among the study population demonstrated that 82.03% (n = 840) of subjects were daily wage laborers and 17.96% (n = 184) of subjects were salaried subjects were summarized in figure 3. The diabetic and hypertensive

subjects constitute about 70.70% (n = 724), diabetic subjects constitute 8.78 % (n = 90) and other pathological conditions constitute about 20.50 % (n = 210) were explained in figure 4. In the south Indian district assessment of medical devices usage was seen among 327 (68.65%) and 193 (37.11%) subjects in urban and rural areas, respectively and in figure 5, its

overview was mentioned. Some of the commonly used devices in the study sites were and the variety of them like glucometers, digital BP apparatus, thermometer, pulse oximeter, and inhaler machine constituted about 35.96, 15.76, 34.42, 4.80, and 9.03%, respectively and was depicted in figure 6.

Gender Wise Distribution	Number (%)
Male	560 (54.68)
Female	464 (45.31)

Table 1: OVERALL STATISTICS OF THE STUDY POPULATION

Table 2: EDUCATIONAL STATUS AMONG THE STUDY POPULATION

Educational Status	Number (%)
Literates (who had passed their matriculation)	757 (73.92)
Illiterates	267 (26.07)

Table 3: OCCUPATIONAL STATUS OF STUDY POPULATION

Types Of Occupation	Number (%)
Daily wage labors	840 (82.03)
Salaried subjects	184 (17.96)

Table 4: NCDs AMONG THE STUDY POPULATION

NCDs among study population (disease category)	Number (%)
Diabetes and hypertension (Metabolic)	724 (70.70)
Diabetes (Metabolic)	90 (8.78)
Heart failures & myocardial infraction (Cardiovascular)	76 (7.42)
Cancer(Oncology)	24 (2.34)
Asthma & COPD (Respiratory)	57 (5.56)
Acute and Chronic Renal Failure(Renal)	35 (3.41)
Epilepsy (Neurological)	18 (1.75)

Table 5: ASSESSMENT ON USE OF MEDICAL DEVICES AMONG THE STUDY POPULATION

Assessment on medical device use	Number (%)
Urban Awareness	327 (62.88)
Rural Awareness	193 (37.11)

Table 6: TYPES OF MEDICAL DEVICES USED

Various medical devices were used among the study population	Number (%)
Glucometer	187 (35.96)
Digital BP apparatus	82 (15.76)
Thermometer	179 (34.42)
Pulse oximeter	25 (4.80)
Inhaler Machine	47 (9.03)

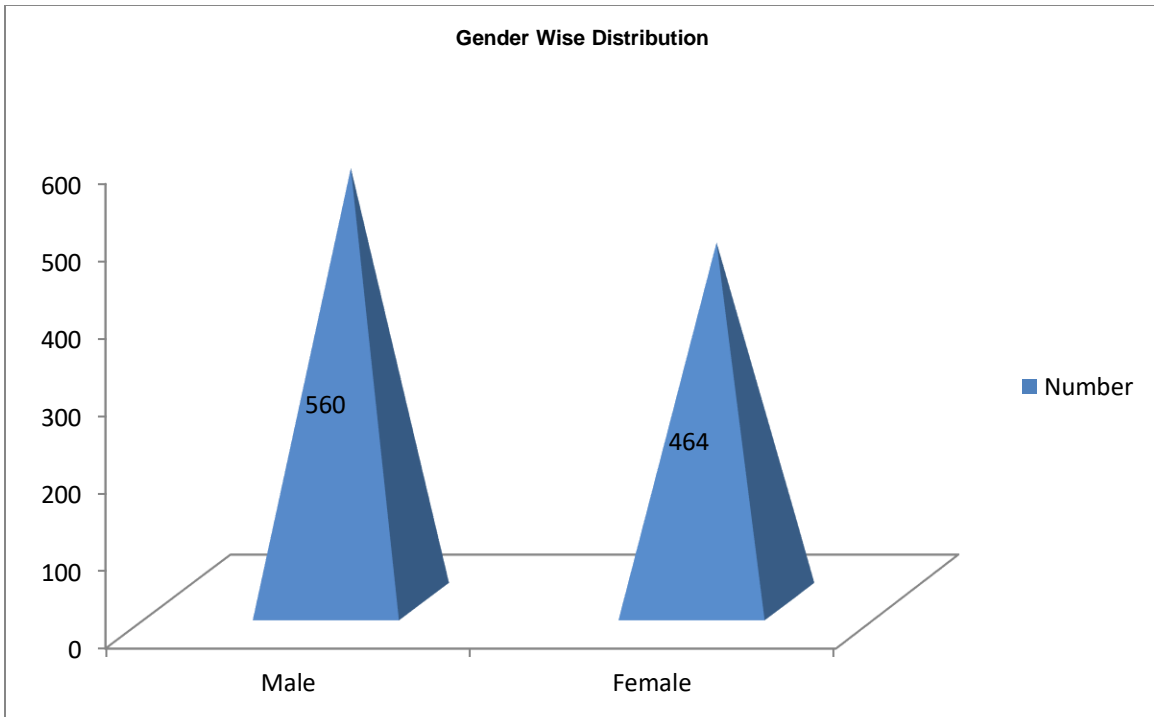


Figure 1: Gender-wise distribution of subjects among the study population and this shows that 54.68% (n= 560) of subjects were male and 45.31% (n= 464) subjects were female.

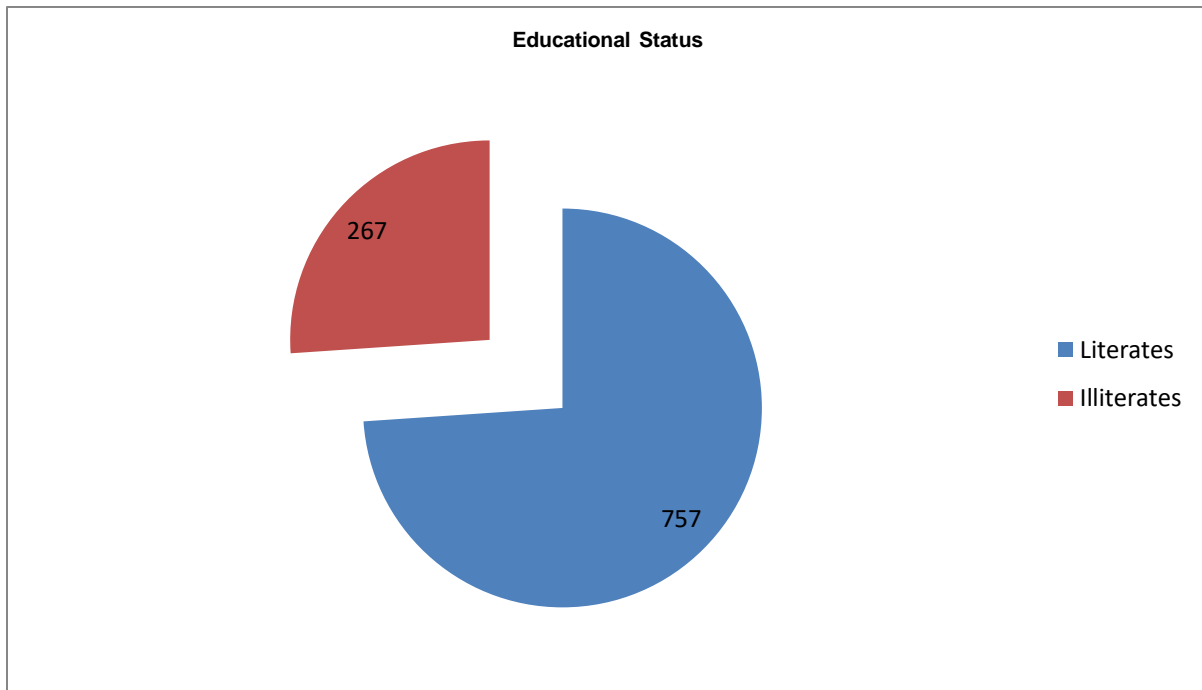


Figure 2: Educational status among the study population and this shows that 73.92% (n= 757) of subjects were literates and 26.07% (n= 267) subjects were illiterates

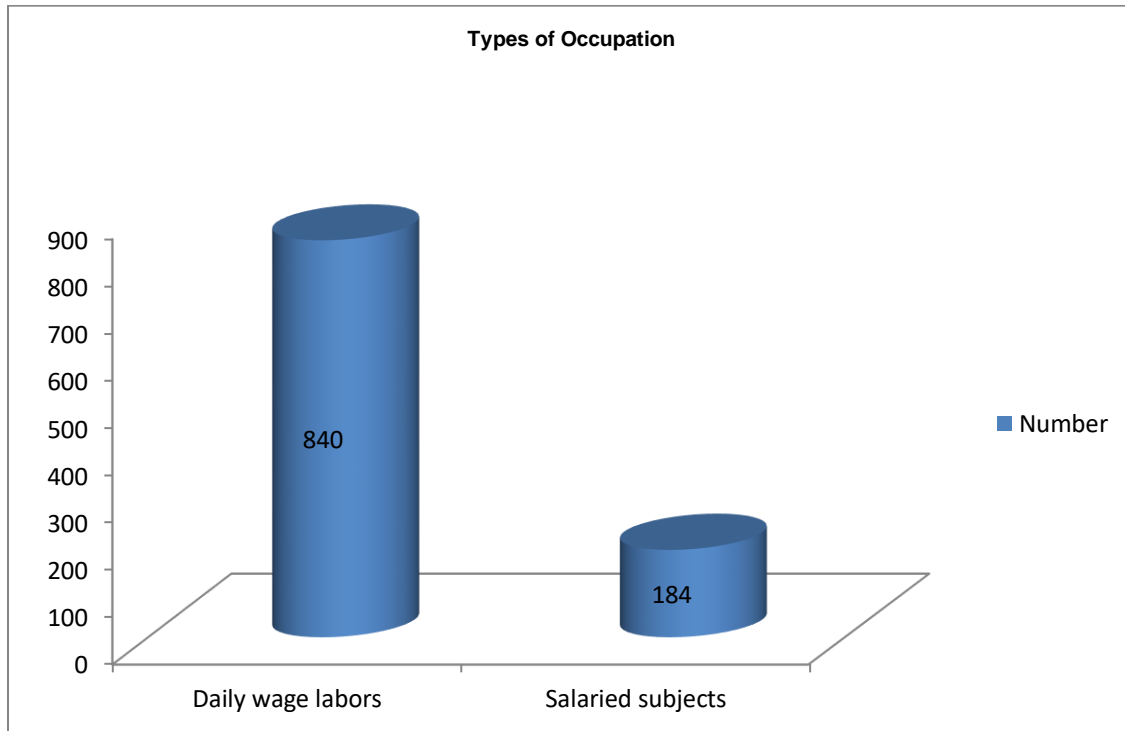


Figure 3: Occupational status among the study population and this shows that 82.03% (n = 840) of subjects were daily wage laborers and 17.96% (n = 184) of subjects were salaried subjects.

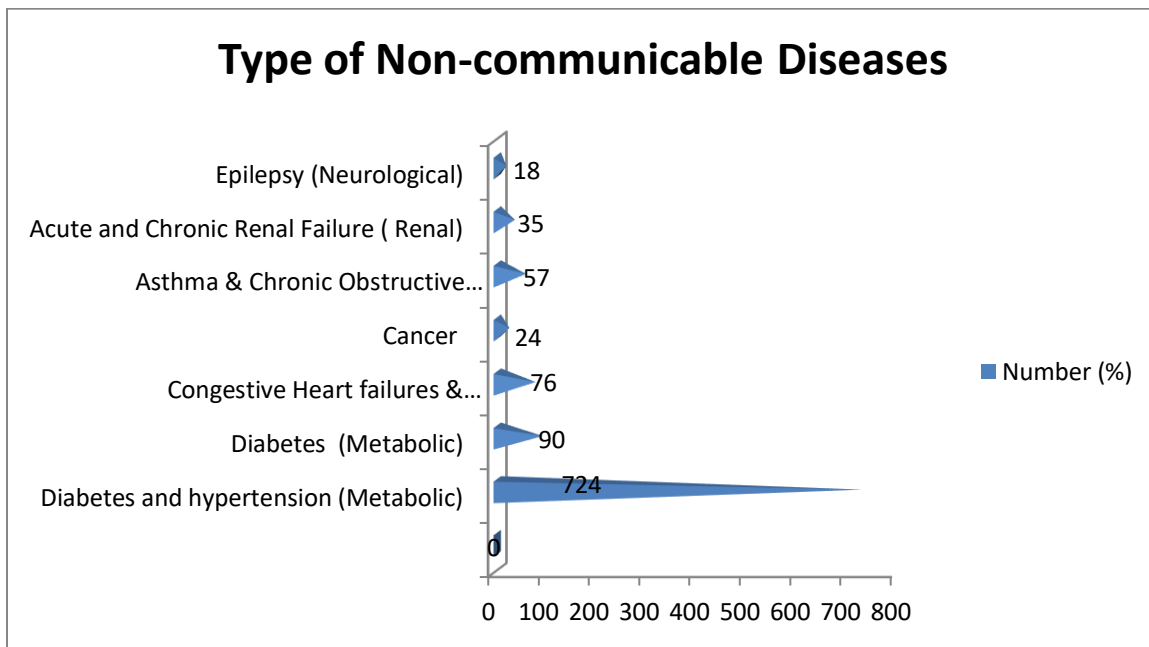


Figure 4: NCDs among the study population and this shows that diabetic and hypertensive subjects constitute about 70.70% (n= 724), diabetic subjects constitute 8.78% (n= 90). Some of the other prominent NCDs relating to major systems like heart, cancer, respiratory, kidney and brain disease constituted about 7.42 (n = 76), 2.34 (n = 24), 5.56 (n = 57), 3.41 (n = 35) and 1.75% (n = 18), respectively.

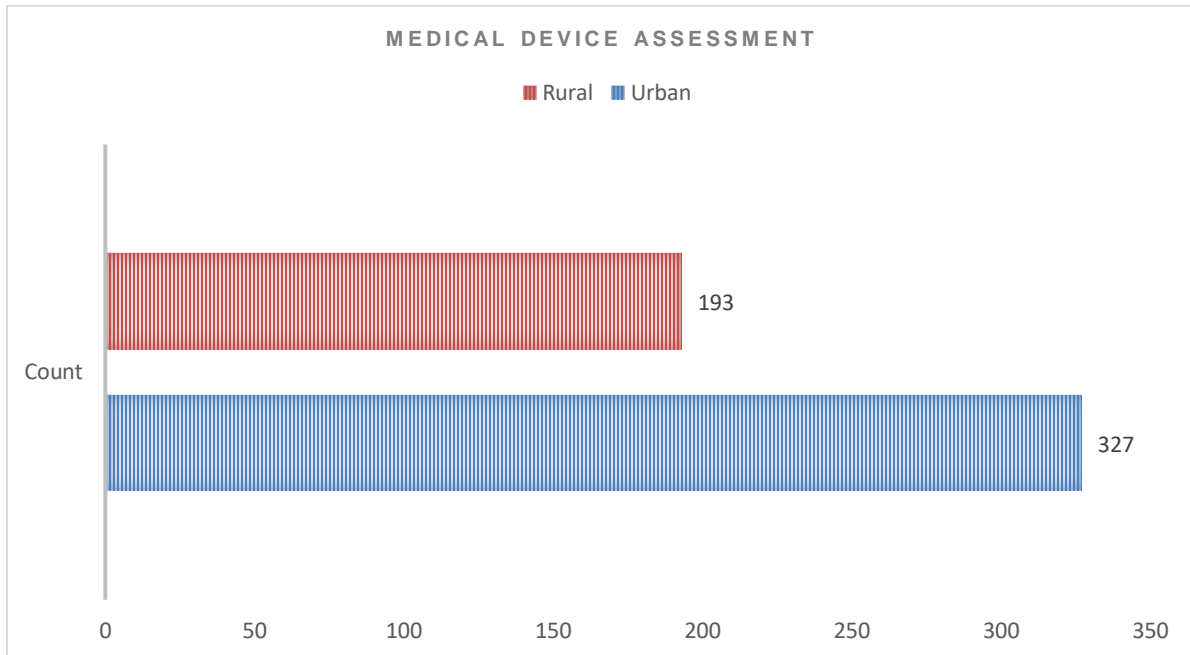


Figure 5: Medical device assessment was demonstrated among 327 (62.88%) and 193 (37.11%) among urban and rural areas, respectively.

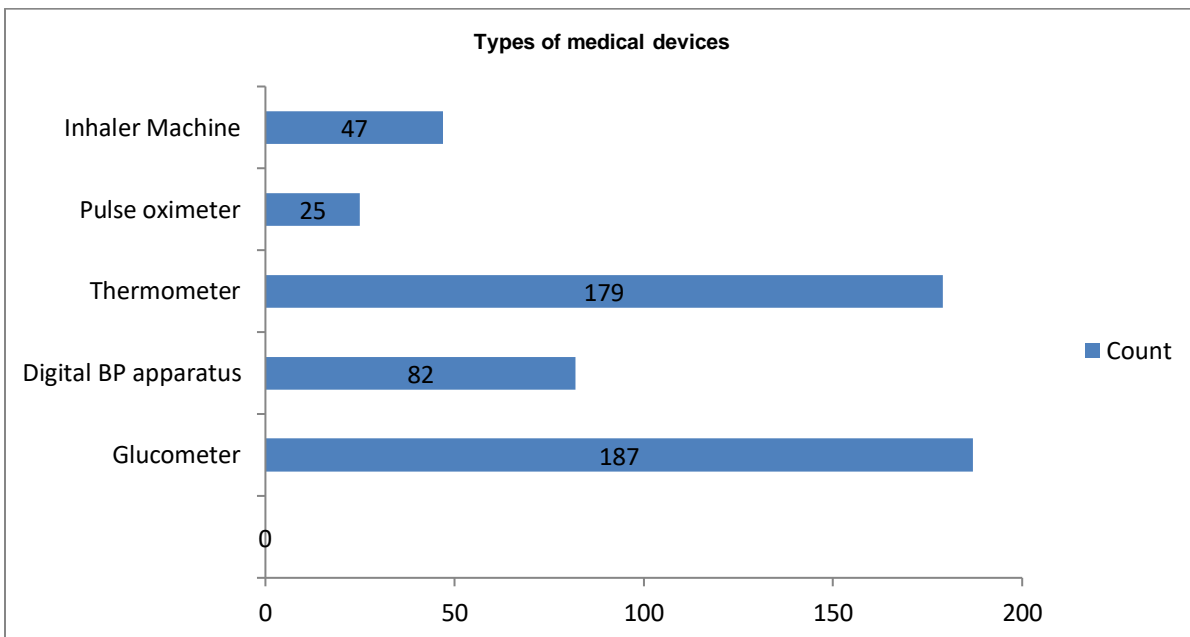


Figure 6: Various medical devices among the study population including usage of devices like glucometers, digital BP apparatus, thermometer, pulse oximeter, and inhaler machine constituted about 35.96, 15.76, 34.42, 4.80, and 9.03%, respectively.

DISCUSSION:

In developing countries, the knowledge on the usage of medical devices was still at the grass-roots level, and with the advent of various latest methods of technology, the awareness was slowly improving and

the possible usage of health information technology via medical devices for the management of (NCDs) would be wide-ranging and can help in various interventions like prevention, diagnosis, disease

monitoring, managing surveillance, and medication adherence.⁽²⁰⁾

In this study a total of 1024 subjects were recruited and the count of males 54.68% (n = 560) were slightly higher than female 45.31.78% (n = 464). Literates (who passed matriculation) constituted about 73.92% (n = 757) and 26.07% (n = 267) subjects were illiterates. The summary of occupational status among the study population showed that 82.03% (n = 840) of subjects were daily wage labors and 17.96% (n = 184) of subjects were salaried subjects. The various types of NCDs among the study population depicted that diabetic and hypertensive subjects constitute about 70.70% (n = 724), diabetic subjects constitute 8.78% (n = 90) and in addition to this, various other NCDs like heart, cancer, respiratory, kidney and brain disease constituted about 7.42 (n = 76), 2.34 (n = 24), 5.56 (n = 57), 3.41 (n = 35) and 1.75% (n = 18), respectively. In have a look at web site assessment on using clinical gadgets changed into seen amongst 327 (68.65%) and 193 (37.11%) subjects, respectively and the various of them like glucometers, digital BP apparatus, thermometer, pulse oximeter and inhaler machine constituted about 35.96, 15.76, 34.42, 4.80 and 9.03%, respectively.

Similarly to this, the virtual interventions among hundreds with NCDs in India became still in toddling degree, however as a result of this pandemic COVID-19, one of the effective results turned into that the use of clinical gadgets like pulse oximeter, virtual thermometers had increased at a drastic fee each in the rural and urban settings and can be considered as boon amidst of the pathetic situations inside the area of digital health, as a sea alternate in mind-set and awareness was found a few of the loads regarding the usage of medical gadgets. In our perspective, we also assume that the behavior of this type of broader studies regarding the usage of scientific gadgets within the control of persistent and acute illnesses also can ignite the minds of the masses and shall location the healthcare area, specially digital fitness on the staggering heights.^(15, 16, 17, 18, 19)

Not only this, but this type of study also definitely brings crystal clarity in the perceptions of the patients and caregivers for the management of NCDs. Eventually, in our perspective, we think that this area of research needs to be brought to the limelight so that digital health shall be a torchbearer in this jet age and helps in prolonging the healthy life span of the masses and helps to be as livewires in the battle of life against the chronic pathological conditions. From the observe findings, it became showed that the expertise within

the utilization of scientific gadgets for the control of noncommunicable diseases changed into determined to be 50.78% in the south Indian district and this is very minimal as compared to the alternative evolved international locations, so each man or woman must take into account that this virtual fitness became the want of the hour inside the international village, to be as the survival of the fittest and led a healthy lifestyles without fine-adjusted existence years.

Limitations of the Study

1. Various other types of medical devices were not studied.
2. Data from the elderly (geriatrics) was not available.
3. Restricted to only one region.

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