



Do Nursing Health Care Providers (HCPs) Face Difficulties in Treating the Rural Populations of South India?

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ABSTRACT

Introduction: Our study was aimed at studying the perspectives of nursing health care workers (HCPs) regarding the burden of Diabetes, Hypertension and Cardiovascular diseases that they had to deal with and the barriers faced by them in providing care for patients with NCD .

Methodology: Qualitative methods for the in-depth interviews to elicit information of each of the nursing healthcare workers was done.

Results: A total of 14 in-depth interviews were conducted. Each HCPs was introduced to a separate discussion and were further stratified based on the qualification/position they held in the hospital. The Healthcare providers were primarily specialised in maternity care, although the hospital did cater to General medical cases .Each session lasted 30 min to 1 hour. Themes identified were -High burden of illness and type of patient care, Barriers to good health and unexplored boundaries.

Conclusion: NCDs are a burden on the fast growing societies in India. There is lack of HCPs in treating such NCDs. Many barriers to treating NCDs exist and lack of Indian Protocols for a rural population limits the quality of care to patients. HCPs face many difficulties which in turn increases the gap in the care to the patients.

Key Words: Diabetes, Hypertension, Health care workers, Barriers, Beliefs

INTRODUCTION

Non communicable disease (NCD) deaths occur more commonly in low and middle income countries. About 82% of the deaths due to NCD occur in these countries¹

Diabetes Miletus (DM) which is a major NCD, is a metabolic disorder that causes altered metabolism of carbohydrates, fats and proteins- leading to increased blood glucose. Genetics and environmental factors determine the type of Diabetes an individual would get. Diabetes has been known to significantly burden the health care system^{2,3,4}.Over the last two decades the Global prevalence of DM has increased from 300 million in 1985 to 230 million in 2004 and 384 million in 2013.The International Diabetes Federation (IDF) estimates the diabetic

population to reach 592 million by 2035^{2,5}.Studies have shown that 95% DM patients self treat, and that none of the modern diabetic tools prove effective unless the psychological issues of the patients solved⁶.This disease has been known to cause a variety of mental ,familial, social problems. The patients general perception of health decreases⁷.It is estimated that more than 80%diabetics in low and middle income countries would face mortality⁸.The estimates of the World Health Organization(WHO) is that ,diabetes will be the 7th leading cause of death in 2030⁹.

Another global public health issue is Hypertension (HTN).It is said that by 2025 more than 1.5 billion individuals would have HTN, an that this would be the reason for 15% of heart disease risk and a

75% risk of stroke¹⁰. Life style modifications can reduce the risk of cardiovascular diseases (CVD) and stroke^{11,12}. In general and with respect to HTN, studies have shown that a large number of undiagnosed patients do not receive optimal care¹³.

Nurses have been known to have vital role in maintaining effective strategies in improving BP (Blood Pressure) control¹⁴⁻¹⁸. The role of nurses have been emphasized over 50 years in public and professional education by reports of the National High Blood Pressure Education Programme's Joint National Committee reports^{11,19}.

The nurses role has been the prime establishment of the nurse run clinics, today, all round the world, especially in low and middle income countries, the importance has been given to NCDs¹². But NCDs are seen to be more prevalent in ethnic minority groups²⁰ especially Asians²¹. Hence, NCDs represent the largest growing burden of India²¹. NCDs have been estimated to be 52% of India's disease burden (2013) which was a huge rise from 32% (1990)²². India is the first country to set National targets and specific indicators to measure progress towards preventing NCDs^{23,24}. One study stated that in order to reach India's target of a 25% reduction of premature mortalities of NCD by 2025, a multi-faceted approach is needed²¹. Hence, to build a NCD programme, the understanding of barriers of the entire spectrum of NCD are needed²⁵⁻³⁰.

Hence, our study was aimed at studying the perspectives of nursing health care workers (HCPs) regarding the burden of Diabetes, Hypertension and Cardiovascular diseases that they had to deal with and the barriers faced by them in providing care for patients with NCD.

METHODOLOGY

Study design: Qualitative methods for the in-depth interviews to elicit information of each of the nursing healthcare workers was done during the month of January 2018.

The study area: The study was conducted in a rural village Hospital in Solour village. The area in a study came under the administrative jurisdiction of Magadi Taluk. The hospital was a rural Mission Hospital that was primarily a Maternity centre. The health care providers in our study ranged from auxiliary nurse-midwives, HCPs students and health staff who had completed or were pursuing a health education course in the Mission Hospital. The hospital practiced both allopathic and alternate systems of medicine.

Study participants: Health care staff were the study participants, where in separate sessions were

organised based on the level of qualification of each HCPs. The Healthcare providers were primarily well versed with attending delivery cases, but also tended to patients with diabetes, hypertension and coronary artery disease. Fourteen participants participated in the in-depth interviews (IDI).

The study procedures were conducted in the local language of the population of the village which was in Kannada. A verbal informed consent was taken from each participant before the start of the interview. No financial assistance was given to any of the participant candidates in the study. The participants were thanked for their time in the interview. The permission of the Health centre in charge was taken prior to the study.

Procedure: Based on literature and experience of the research team^{31,32}, a basic backbone support system of the study was conducted. The study was designed in order to explain the possible reasons for current practices in treating Diabetes mellitus and Hypertension with respect to current treatment practices, beliefs of the patients, beliefs of HCPs, and the difficulties faced by the Healthcare providers in treating patients in rural India.

A set of open ended questions derived from the topic guide was modified for the study population. There were many domains that were identified which looked into the barriers to optimal care, health seeking behaviour, belief of patients, belief of HCPs, problem of Healthcare, patient relationship and current practices, and the challenges in the prevention of hypertension and diabetes.

The data collection was done by a researcher with experience in qualitative study methodology and consisted of an interviewer and a note taker for each of the in depth interview. The interviews were recorded on a digital audio tablet and the discussions were recorded in the local language of Kannada with a complete verbatim description that was transcribed for each of the in-Depth interviews and handwritten field notes was typed using Microsoft word processor by a bilingual social scientist.

Finally the transcribed manuscripts were double checked and re-edited by the bilingual person. Care was taken to maintain absolute confidentiality of the communication and the trustworthiness of confidentiality to identity was maintained. The research findings was analysed using the Lincoln and Guba criteria³³

Examination of the text information for each of the IDIs was done for the analysis of the data. A two step process was done to code the given results which were key phrases, being coded line by line as a framework and based on the topic guide and the additional themes that has emerged from the

given data an overall framework was made . Memo writing had been done for each of the codes and various relationships and comparisons were identified. Sub themes were identified from the overall themes and a comprehensive data was analysed.

RESULTS

A total of 14 in-depth interviews were conducted. Each HCPs was introduced to a separate discussion and were further stratified based on the qualification/position they held in the hospital. The Healthcare providers were primarily specialised in maternity care, although the hospital did cater to General medical cases .Each session lasted 30 min to 1 hour.

Interrelated themes with underlying subthemes were identified in the data that was textured. The

burden of the disease and difficulties faced by the HCPs was seen as major barriers to the diagnosis of diabetes and hypertension. There were gaps in knowledge that HCPs of the hospital had, when it came to treating NCDs such as diabetes and hypertension. Based on the perspectives of HCPs on various aspects of hypertension and diabetes a theory was derived. Our theory states and lack of adequate care in terms of treatment and management of NCDs due to various barriers such as inadequate knowledge in the Healthcare staff, and non-willingness by patients to take treatment adequately and false beliefs of the patients. Social dynamics seems to be the key factor in determining these challenges faced in the treatment of chronic non communicable diseases and interventions at one or more level will be altered based on these findings.

Table 1: shows the key themes and sub themes that emerged from the study.

Theme 1:	High burden of illness and type of patient care.
a. Sub theme 1:	Overall thoughts about diabetes mellitus and hypertension among Healthcare HCPs staff
b. Sub theme 2:	Identification of patients with diabetes and hypertension by HCPs staff
c. Sub theme3:	Management of patient in Emergency Room or a General OPD.
Theme 2:	Barriers to good health
a. Sub theme 1:	Patients Beliefs.
b. Sub theme 2:	Sisters belief:
c. Sub theme 3:	problems faced by patient
d. Sub theme 4:	Complications
e. Subtheme 5:	problems faced HCPs students and staff
Theme3:	unexplored boundaries
a. Sub theme 1:	Need for holistic approach of care.
b. Sub theme 2:	need for better skill
c. Sub theme3:	unanswered questions by HCPs staff

Theme 1: High burden of illness and type of patient care.

Sub theme 1: Overall thoughts about diabetes mellitus and hypertension among HCPs.

Most participants had a unanimous opinion- that 'good genetics' and 'an Angry personality', 'an obese individual', all had a higher chance of developing NCDs. HCPs also stated that food habits influenced the chance of developing diabetes or hypertension.

Sub theme 2: Identification of patients with diabetes and hypertension by HCPs.

Most of the participants of the in-dept interviews stated that they would diagnose patients based on their overall built, saying that diabetic patients are; 'fat and obese' in appearance. HCPs felt that NCD patients were found to be depressed and had an overall low mood. Smoking and drinking was a common family history stated to be the cause for diabetes and hypertension.

Most HCPs had wearing ideas about the overall symptoms of diabetes and hypertension, confusing one symptom for another with respect to the individual diseases. A blanket symptom list was given for both diabetes and hypertension, not aware that the disease is manifested differently for each of the diseases. The blanket responses were- 'Fatigue, syncope ,tension personality, burning of feet, inability to remember, loss of appetite, 'fearfulness', nutritional deficiencies, drinking lots of water, non-healing wound over the body specially the hands and legs' .

Some individuals felt that certain symptoms like giddiness, swelling of legs, frequent headaches, frequent falls at home, a rich salt diet and 'tension pains', were exclusively seen in hypertensive patients. Similarly, the need to frequently urinate specially in the middle of the night, insomnia, swelling of hands, blurring of vision heaviness of the head, chest pains, and a high sugar diet was seen more in Diabetic patients.

One participant stated that small wounds would become very large, "if the patient or his caregivers did not take care of it adequately and 'if dust' would fall on the wound, it takes a long time to heal". HCPs also felt that patients with chronic non communicable diseases went into depression if at all they realised that they were having a chronic wound that did not heal despite adequate care.

Participants also said that antenatal mothers re-viewing in the hospital were diagnosed to have possible hypertension, if at all they developed swelling of feet and they would have a certain change in the appearance of their face.

Sub theme 3:

Most participants in the study said that they had an overall idea as to how to manage a patient with diabetes and hypertension when they entered into the Emergency Room or a General OPD.

One HCPs said that, 'first we have to see in which stage they are'. Going on to say that they had to stage patients into, 'very high ,medium, or low blood pressure', and if they are, 'serious or not', and to do the same for diabetic patients too. A common response was , the need to start anti-hypertensive drugs should be withhold at the first visit and a history of BP in the patient and in the family should be taken well. HCPs also felt that BP medication should not be started immediately but only as a follow up medication and not at the time of presentation.

Other statements such as,

'to check BP first'

'to observe the patient first'

'sugar is high, to start treatment as oral medication first' were made.

One participant said that if the patient took too much tension, 'we have to get to a personal level with them and talk to them of their anxiety issues', as an initial treatment most HCPs said that a stat dose of Atenolol had to be given if the patient's BP was found to be high ,after checking it at serial intervals. Despite giving Atenolol ,if the BP still persisted to remain high, then a higher antihypertensive drug such as Nifedipine capsule given as a sublingual medication..

With regard to hypertension, HCPs said that if a patient happened to be diagnosed to have BP for the first time, after checking the BP, they felt it was not advised to tell the patient immediately but to inform senior duty sister. Even after rechecking the BP by senior staff and if the BP persisted to be high - the sisters felt that they had to tell the patient, 'nirdharavagi' that the patient had BP.

Responses in the presence of low blood pressure was also recorded, 'not to give BP medication and not to give ORS first'.

For diabetes the scope of treatment known by the HCPs was limited. Insulin and tablets were the common modalities of treatment. Glynase MF (Glipizide and Metformin), was the common OHA used in the centre. If a patient had swelling and fatigue they would ask to do a GRBS and if the sugar was found to be high, they would inform the senior duty sister who would in turn tell to start an IV drip and to start tablets or insulin.

Complications such as non-healing wounds, would be told to the patient, 'kolathu hoguthude' . The patient would also be told to be compliant with medications to prevent complications of diabetes.

'If a patient was found to consume sweets , a RBS should be done at home, and the patient is requested to review on OPD basis for a FBS and PPBS on empty stomach'. The HCPs stressed on the point where in they would advise patients on the complications if at all they did not take their OHA. The HCPs also said that they have to tell it in a calm and 'non Rash' way ,as they had experienced patients not to be compliant if they spoke to the patient harshly and that they have experience instances where in the patient has been angry with them.

The HCP also said that for obese diabetic patients and for those with hypertension, they would advise a strict diet preparing a timetable and giving them and overall knowledge of insulin. Salt Reduction for Hypertension and reduction in the overall sugar intake was the common agenda expressed over all categories of HCPs . ' Jolada rotti will control sugar and no tension will decrease BP',

"Special care to be given to elders and to explain to the patient that 'this is not a big disease and that they are normal", was a view point.

Common investigations practice by the HCPs were Routine Urine albumin, regular BP check ups, every two hourly for hypertensive and for diabetics a, random blood sugar, fasting blood sugar and postprandial blood sugar.

Although the treatment for diabetes and hypertension was not unanimous among the HCPs s, a combined response stated that the overall knowledge on treatment with respect to diabetes and hypertension was inadequate. Hypertensive patients were given oral Nefedipine 5mg as a drop form if the patient had a b p more than 160 / 100 the patient was reassured and advise not to take any tension at the time of presentation the BP was high. Bp was rechecked every 15 minutes for the same.

Other nurses felt that the cutoff for Hypertension was more than 150 / 100mmHg, "I am telling the patient 'samadhana vagi 'would bring down the BP". As this was a Maternity Centre the nurses were well versed with hypertension medications in pregnancy, which was 'T.Alphadopa 100 mg or T.Labetalol 100 mg or Nifedipine 5 mg' and if the BP was persistent, they would start with Magnesium Sulphate," 10 grams of magnesium sulphate with 100 ml normal saline -16 drops over 24 hours", was given for persistently high BP in pregnant mothers.

Some HCPs students also said that Labetalol 100 mg could be given as a BD/OD/HS dose for non pregnant hypertensive patients, and If the systolic blood pressure was more than 150 or 160 or 180 or 200mmHg, sublingual Nifedipine 5mg or 10mg was given as an emergency treatment.

Before the administration of Nifedipine , vitals needed to be checked.

For diabetic patients they would start off by doing a random blood sugar and if the sugars were found to be more than 350 mg/dl, FBS and PPBS was advice .Based on the report injection Insulin was given and if the Sugars persisted to be high,1 pint of normal saline 500 ml NS was diluted with insulin and Glipizide and metformin was started if the RBS continued to be over 200 or 300 or 400.

Theme 2:Barriers to good health

Sub theme 1: Patients Beliefs.

The HCPs claimed that a lot of false beliefs existed with the patients. These false beliefs had been passed down from elders generation to generation. The HCPs felt that the health care providers needed to change these beliefs of the people.

One example is 'milagu rasam at home but at hospital medicine'

Beliefs of patients were to take a Ayurvedic herb called, 'Amrita belli'. 'basale ssoppu' 'agalekai' must be eaten to get success in the treatment of BP and sugar'.

The need to take salt in low BP patients. 'Namma Arogya namma kaiyalli', is the caption given by the patients depending on the type of people they were. Some patience said that the sugar came from the body and not from others, and depended on the family. Some felt that Ayurveda medication did not make the BP low. Further patients went on to say that they were able to make a hypertensive and hypoglycaemic patient normal but said that the reverse was not true.

'Menthiya', decrease the sugar. 'Not to drink milk and salt for BP'. Some feel that the disease is a 'curse by god' and do not believe what the HCPs

have to say." I do not understand the disease completely".

Patience also felt that in the past there was no allopathic medication and only natural form of treatment was practiced. Hence only 'naati medication', is good medication and 'kshaya' medication is good medication and despised allopathic medication

HCPs felt that the medical terms added to the confusion about the disease. Some felt that the disease developed from the intestine and when the nurses gave remedy for it they would say that only a Pooja would remove the curse.

One sister said that " I have to believe in God but also have to look at the patients in a medical perspective". She was emotional and said that," we can't blame God we can't only pray and say go away disease, we need the medications also, and we have to pray together to get a healing". The sister went on to say that if at all the staff argued with the patients, the patients would get angry on them. Some patience say that after going to a particular Temple, their god got angry with them and give them the disease.

'Moodanambikai', false belief was so inbuilt in the patients that they did not want to let go of it. HCPs said that the root cause of disbelief should be targeted, for example, one staff told the patient to, 'go to Pooja in the temple, but you also come back to the hospital for a regular check-up',and once the patient understood the intentions of the HCPs they would know that their false belief or moodanam-bike was the root cause.

Patience also said that the hospital performed a lot of tests, and in turn the blood pressure would rise and hospital personnel would do the same check up again and again and it was a better option to stay back in the house and not go to the hospital.

Most patients reviewing at the centre did not believe in medications. 'Disease was with your grandfather and with your father the disease has transferred to them and people around their homes would influence this thought and would mentally trouble these patients more'. False beliefs like not to eat sugar and rice, not eat too much food, to eat only 'Chapati', and to drink lots of water.

People also felt that it was because of their past sins that they got the disease. One patient believed in blackmagic and did not accept the reasoning of the HCPs. One patient did not want change in medication and wanted to continue the same medication despite no improvement of sugar and BP levels. Sisters say that patients ask the same questions again and again and like a child they have to be concerned of the patient. 'nodabeku'

Patients said that they were shouted at.

'One patient took tension as her baby did not pass urine and motion and even after shifting to the ward she took tension, the patient only said ' the doctor will give a medication' and she became better , but on giving medications the patient refused any injections as she said the only treatment was Ganga water and doing Pooja and to take bath over there and taking thertha, mata maduthara'. Patience also practice branding for fever. One Peculiar ritual for Hypertension was the patient would prepare rice first with more salt and then place it at the god in pray and believe that the salt would evaporate and only the Rise would remain as this is God's doing only your pooja confuse them. Attenders of patients feel that they have to pray in the Midnight and some patients feel is because of Mantra. One patient said that someone is praying that that he should be killed and he is trying to take away the Curse by managing the disease.

'Panjabootha mix' is a mixture kept in a container called a chambu vessel and prayers are done and some patience also believe that chicken bloods built around particular trees and on the road would reduce sugar. One HCP said that her sisters friends mother had a good control of a Sugars and was an insulin secrets with developed kidney stones following which she had a splenectomy as the spleen was enlarged and then she developed a non healing wound on the leg which spread to the whole body and needed amputation in the process should develop bed sores and was put on a catheter and insulin two to three times a day with no improvement.

Some patience when informed of the diagnosis of BP and sugar they say,' is it!',in a non-concerned manner.

Sub theme 2: Sisters belief

HCPs felt that 'if a remedy is at home for the patient then ' it is a good thing'.

One cannot claim that all beliefs are bad, for example- a change in diet like , salt restriction would help the patient.

'Firstly we must be mentally prepared to hear the patient's beliefs and what the patient has to say'.

"Sugar patients should follow a ,low fat diet ,with a strict timetable, and BP patient should be 'cool', in their workplace, their behaviour, in the way they speak to people and as they grow up". 'no chinthae'. Mental health and a sudden anxiety in a particular situation causes BP. Consumption of beef causes diabetes and hypertension and people eat too much of junk food -it is bad".

"Even HCPs believed on' Amrita Balli, Vishu gala, basale soppu, 'cheepakai', 'empty stomach in the early morning. Some felt that eating salt and tamarind together would normalise a low blood pressure'. One staff said,' that she did not know the complications of tablets and the disease itself would cause and that it was a complex disease to handle'. Some HCPs sisters felt that it was their duty to force and give medications to the patients .

A strict diet involving,' no tea-coffee, sweets ,oily foods, pickles', was to be followed. Patients with income and family problems are prone to diabetes and hypertension. One sister said that the opposite house persons would cause family discord to the patient and this will cause the patient to get more BP. 'Ragi mudde and Goa', control sugar.

One Sister said, 'some sweets will decrease the sweet for diabetic patients'. Tender words will make the patient happy and decrease BP'.

'Before they used to be a lot of hard work, like manually, but presently as everything has become a button system and life is sedentary, there is a high risk for blood pressure and sugar. In the past farmers used eat only once a day and didn't developed BP and sugar, and the farmers were happy as they eat well and worked well and had a good life and no tension'.

'you should not tell the BP value to the patient as it can give a heart attack and sudden loss of life and these BP patients will be Rash in their words' and 'we HCPs cannot understand what they are saying , and they may develop burning of eyes , leg pains giddiness ,consciousness and probably they would have poor food habits'.

'Dandese work', must work so hard that the stomach hurts, was the prime motto of the farmers and it is best that the HCPs don't indulge in patients beliefs'.

Sub theme 3: problems faced by patient

Patients had said that they fear to take tablets everyday as it may lead to kidney failure and hence hypertensive patients don't take tablets.

Hypertensive patients get angry suddenly and later regret their actions. 'BP patients cannot control their anger and can sometimes kill someone'. Sugar patients face social restrictions ,such as a young hyperglycaemic individual will have to avoid parties,' we have to hear the notion, you are not healthy', by relatives, friends and this will give the mental torture in their personal life. Relatives will 'Kutty katti' pin point and hurt the patients feelings.

'Patients with a small wound will have to undergo an amputation. Family problems ,alcoholic homes,

family issues issues between the mother in law, wife and husband ,are factors that increase the chance of having BP in the patients’.

‘BP patients take medication only when it is higher than usual and then discontinue. BP patients also suffer the complications of stroke and patient say that they are scolded’.

‘BP patients and sugar patients always have the question why did this disease come in is it possible to cure it and patients don’t get adequate answers for their many questions and go back with the doubts in their minds,

‘why to eat this medication as it is a lifelong disease and why do some people eat so much sweet and still don’t get any complications or sugar’

Sub theme 4: Complications

HCPs identified the most of the possible complications seen in diabetic and hypertensive patients. Heart attacks, burning of legs, fainting, giddiness and unconsciousness. Depression because of the disease itself and due to the need to have to take many medications.

Even if the health staff say that it is not a big issue in taking medications from time to time the patient will not be willing to understand. Patients said that they will need surgery if there is a non healing wound and will further lead to their depression’.

Sudden deaths can occur if there is poor patient care, in low BP, low sugar, high BP and high sugar. LSCS ‘In a pregnant lady with high BP, blindness paralysis, epileptic seizures, Breathlessness, bleeding PV, need for emergency’.

Non healing wounds for sugar patients and gangrene of hands and toes, excessive fatigue, increased thirst ,loss of weight, preeclampsia, eclampsia and with specificity to eclampsia HCPs said that tiredness, depression, family tension, excessive use of technology by young people, was a major cause for the complication.

For HTN ,Insomnia ,non activity ,unable to lift the legs inability to move the hands or the legs ,no healing power, slurred speech and for diabetics, dry mouth ,depressed skin ,frequent falls, joint pains, vomiting headache, tremors, shivering, nerve weakness , were identified complications respectively.

Subtheme 5: problems faced HCPs

The participants felt that it was their duty to explain to the patients the need to take medication,’ as it is our job’.

‘Should not give sweets or talk about sweets in front of patients as it will hurt them and they will eat more sugar’.

‘If we cannot convince the patient to take the medications in a calm and nice way, we should understand that they are scared of taking the medication and hence we have to scare them even more with the help of others, so that they take the medication and tell them things like ‘we have to cut the finger if a wound is there due to uncontrolled diabetes’.

Junior HCPs said that there was no senior HCPs to guide them. Other Sister said that they were many problems among the staff of the hospital.

Health staff said that they could not elicit adequate medical history when old people came to the hospital as an emergency basis. Even the attenders of these patients were ignorant of the disease or medications these patients were on and this hampered the work structure of the health staff.

‘When old couples come to our hospital ,each of them does not know what medication the other is taking, and their children do not accompany them, and ‘we have no clue’ of the patients biodata’.

HCPs had to battle the economic constraints that were prevalent in the patients of the area. “When a patient comes to us we need to do a sugar test ,urine test and many other test ,and the first question the patient asks us is' how much is it ?." Amount Ella, amount Ella’.

‘In another scenario when a old patient came to the hospital, the attender of that patient said any way the patient is old why to give treatment.’

Patients believe that after taking medications their disease would increase. Hence, patients do not take medications and it was a difficulty for the nurses to make such patients understand the disease. Some patients had more than one disease and concealed information. Probable reasons stated by the participants were, ‘as they do not want to pay for all the routine test and want only a specific blood test or urine test, and they may be worried that if other tests are done, everyone would know of the diseases they have’.

‘Patients repeatedly complain on the HCPs ,that they take a lot of blood from them during blood test and sisters get tired when they have to explain each test and the use of each test considering the patient load’.

One sister said that ‘we sisters will get more tension when the BP patients have bad behaviour and use bad words and don’t listen to us and don’t take medicine properly and don’t co-operate well with us and patients get disgusted with hospital and feel' when will all this get over' and say why BP has come at such an old age.’

'Patients lie and tell that they will take the medications correctly in front of us but behind our back do not do so'.

We nurses feel bad when medications do not work, the side effects of medicines and the different treatment outcomes that are not foreseen'.

'Patients have bad reaction to tablets and question us too much and get even more scared when we check them up too much'.

HCPs said that if they questioned their patients too much, the patient would get BP and sugar and hence the HCPs should adjust with the patient and speak to them in a calm way and not shout at them'.

'HCPs said that if patients got angry with them they would understand that it was only anger episode and the patient would eventually come down and say thank you sister' ,

Attenders of the patients were a nuisance to the health staff. Attenders of these patients would instruct nurses to give medication as per their wishes and not follow doctor's orders Attenders of patients would order the HCPs staff around and they would not let the HCPs work freely. This was bad for the HCPs environment.

Sometimes HCPs did not tell the results of the sugar or BP test to the patient, as they were worried that the present values of the test would increase even further and they did not want to deal of with attenders of the patients after revealing the results

HCPs extremely frightened if at all ANC mother was to develop high blood pressure as they would anticipate a fit.

Although the HCPs well aware of most symptoms such as sweating etc., staff said that they have experienced situations where in the patients looked absolutely normal, even with a high blood pressure and it was difficult to diagnose such individuals.

HCPs were unable to explain situations where in the blood pressure would increase suddenly.

HCPs advised patients who are diabetic to do limited activities, minimum work, where in they would not get injuries and have adequate rest timings.

Staff felt that treating an unconscious patient adequately was difficult and hence they had to stabilize the patient first and then talk to them calmly and clearly.

HCPs said that they faced problems when the patient was either young or old, as these age groups would eat a lot of salt, sugar, coffee and mostly

would have had this habit from small age. HCPs explained to the patient to take a small piece of sweet and put it in the mouth and to eat egg, fish, to control blood pressure and sugar. The main reason to get BP and sugar at young age is poor Life-style habits like eating outside Food and not eating at home.

One possible reason for patients to eat outside Food,' is because homemade food is a restricted food and it won't taste very well but it is very hygienic, whereas on the other hand, pizza, burger, roadside Samosa, pani puri, gobi Manchurian are attracting foods and lead to obesity, which in turn leads to tension due to poor body image, and patients feel depressed because they are fat at such a small age, and have developed a ponch which leads to depression and hypertension. Patients can't control sweets, Jamun, and even if they have high sugar they will not restrict.

'Who will say I don't want laddu?'

'Even if they are going to die they want sweets and if a child eats sweet front of the grandfather it leads to craving hyperglycaemia' Hence ,to maintain good diet by the HCPs was a challenge.

Patients would come in the last stage for treatment and many tests are warranted (haemoglobin,RBS ,FBS,PPBS etc.)' only once we are hundred percent sure we tell them of the diagnosis'

'if we advise them to avoid sugar they tell us' swalpa matra eddee alva Madam' (the sugar is only little) and still eat sweets after having an unhealthy wound'

The patients are given a strict diet chart, restricting sugar and jiggery. Patient have to go for a family function especially marriages where they,'eat sweets nicely and forget to take care routine sugar medication 'and review to the hospital 3,4, days later or even after a week for a fasting blood sugar.

'I do not feel it is difficult in being a HCPs sister but patients do not understand the situation. Patient attenders come and fight with the health staff before treating the patient and demand for IV glucose bottle directly and order us all around and if you do not reply to them they fight with us, and they fight almost for half an hour to 1 hour in the ward and they say,' why there is no treatment, why nothing is done the patient ', and patients also fights with us directly'.

The patient party complain as,' yesterday only the patient was active, why has the patient deteriorated today' and say,' you are not eating properly'.

The family members don't know the history of the patient.

'The patient has gone for some function secretly and hence the Sugars would have gone high, but they put the blame on the HCPs, we first tell don't eat Mutton, chicken, no curd,' alugadde 'no potato, no butter milk products, and patients eat the same thing again and again and we face the same problems again'.

'Some patients who have blood pressure have the habit of eating,'kebab chicken with alcohol,it is very important to eat pickle also at the same time ,they also eat lemon and all this increases the BP, but some patients will take BP tablet and try diet also but they will be no improvement and they try to blame us only and say BP was normal yesterday and not today and always say the HCPs are at fault'.

'Some patients even come fully drunk to hospital and say that,'the medicine is not good and we had good BP yesterday and today but today there is no good BP why is this' and give such comments to us and they won't accept the very fact that they have high blood pressure because of the improper diet'.

Some patients after admission to the treatment Room, escape without telling anyone and HCPs get tensed and tried to search these patients.

If it is a antenatal mother with high blood pressure, advice on BP medications would be given but, the patients present at the last stage and,' scream and even talk allowed in the labour room and causing more tension to us, the attenders and patient herself.' Although we tell her to calm and understand that she is well taken care of, the patient wont listen to us and we'll scream even more aggravating her BP '.

If the baby is born we do not give ergot or cytotec 600 micrograms we give sublingual nifedipine.

'Once the baby is born the first question the mother asks us is,' is it a boy or a girl and in my experience patients are not happy if they deliver girls, one person had four girls and they got even more tensed if I say, except this child they would initially say 'ok, I will accept this child', but actually they are not willing and they will have a high BP'.

'Some patients take too much pressure and results in pressure over the uterus which results in bleeding that does not stop and even after shifting into the postnatal ward and repeated checking of blood pressures the blood pressure would remain alleviated'.

'These mothers take more tension if the baby does not pass urine and stools at the correct time and these patients are found to have poor breast feeding practices which results in the baby to cry . These kind of patients trouble the HCPs more than 20 times'.

'We give BP medication from our side but we do not see any effort from the patient side and if we explain this to the patient they do not agree with us and some official people come as if they are Royal people and say sister please check my BP, before anything they order us to check BP and sugar and in that case if any business they call and they raise their voice, and their BP will increase eventually we also can't hear the Korotkoff sounds'.

Some senior staff nurse,' why did you not take the address, and the name of the patient.

'when the senior staff shout at us, we will get more tension'

Staff said that she felt the tension after her senior staff shouted at her for not taking the address and said that the senior staff told her to take the address and at the same time to give the injection and at the same time to also handle the patient and at the same time to also handle the attenders and this caused her to get very tensed

'We all should be polite from the junior staff to the senior staff'

One sister said that,' if official people come as patients ,for example from the Gram Panchayat member or Taluk Panchayat member and if at all we do not work at that instant we get shouted even more and even if you do a good work we get shouted so this is a big problem faced'.

Treating BP on one side and sugar on the other side, we don't let the patient party come inside the room as they won't let the patient get oxygen properly and if attenders come in , carbon dioxide will build up in the room and increase the tension of the patient and we tell them not to cry and we have to face these problems'.

'If the patient died or suffered because of a underlying cause for over 2 years the bad attenders will tell you only poke the patient with all your investigations and you only did something to the patient and finally sister who is senior will shout at the junior sister and say the sisters killed the patient'.

'Then if the sugar is high and insulin is given and RBS is still not reducing the patient is referred to a higher Centre like Apollo ,SJMC, Martha's, Victoria ,Apollo and dressing is done. At the time of referral the patient party will say,' you did only half treatment here and how the other half is being done at a higher centre'.

'Even if we say it is not possible to treat the patient here ,' agudilla', Still patient will forces and they won't go also from our hospitals'

'These patients will tell ,'you give treatment now, or we will go home' , then we tell them that there is

a possibility that the patient may die here and please go to a higher Centre but still the patient and the attendance will not listen and they will still keep the patient here

Some patients come with no family support and they didn't even inform anyone while coming to the hospital. These responses show the levels and diversity of the issues faced by rural HCPs.

Theme3: unexplored boundaries

Sub Theme 1: Need for holistic approach of care.

One sister felt that it was the duty of the HCPs to sort out any familial discord that existed in the patient's family and make the patient talk to any relative or any family member they were angry with so many years'.

'Family is more important than the medical treatment day received'.

Other treatments such as taking the patient to the garden for a walk, was found to be helpful in some patients as claimed by the HCPs.

'Cool irabeku', 'ondu magu hindhe thaaye-aathara mathaduvareethi', going on to say that the nurse had to speak like a mother to her child in coming the patient.

To advise the attendance of the patient to keep a no tension and no noise environment 'at home and give adequate rest to the BP patient and strictly stop alcohol. Some even felt complete bed rest was needed for BP patients

Sub theme 2: need for better skill

'As this is a small Hospital we do not get that much experience and we do only and mostly delivery cases but not general cases, we do see fever cases with other small medical cases'. 'we know a lot of theory but when it comes to patients we are not that confident with practical knowledge and we need more experience with patients on emergency basis'.

'Asthma patients, poison patients, breathlessness, accident patients come and we treat adequately but we not get that much experience in overall patient care'.

'The work as a much more here and we cannot maintain the duty timings and we get extremely tired'

Subtheme3: unanswered questions by HCPs

'Why does sugar come, is it possible to cure this sugar disease completely?'

'We see that it comes in childhood is it so?'

'Earlier it was seen only in adults and there were medications for it why?'

'Now there are really high drugs to treat diabetes and hypertension'

'Does sugar come only in blood?' 'BP is always hereditary?' 'Is BP due to risky work?'

DISCUSSION

Our qualitative study highlights the perception of HCPs and the barriers they faced in overcoming NCDs, in the Indian rural population. As described the burden of HTN and DM is well documented in India³⁴⁻³⁷. Our study demonstrated many themes, of which a major sub theme emerged, which was the lack of knowledge base and no protocol in the treatment of NCD patients.

The next dominant theme that emerged from the study was the difficulties the nurses faced in treating patients in rural South India. Although the Nurses did do their level best in achieving a holistic care for the patients, the patients false beliefs, was a major barrier that stood in the way of receiving adequate treatment as described by the HCPs of the hospital.

Unlike other diseases CVDs (cardiovascular diseases) require timed follow up, which is quite inadequate in South Asian Population³⁸. (20) Farrah et al reported a low adherence rate of only 40.1%³⁹ in DM and HTN patients. Our study responses show that nurses identified that patients had poor follow up visits to the hospital, and poor adherence to medication. Patients would sort treatment only when they felt they were ill and not as a routine.

In recent times, the stresses and challenges faced by nurses has emerged. One study in the US shows that diet related issues were a major (54%) challenge faced by their home caregivers⁴⁰. A similar response was given by the nurses of our study, stating that they were unable to convince the patients of the need to follow diet. Patients had many false beliefs on medication and alternate form of medication which hampered the good advice on diet.

Our study shows that nurses faced difficulty in treating patients (especially elderly), who were unaccompanied by a care giver.

A study showed that resistance by the family members was a major barrier in achieving a good health behaviour⁴¹. The results of our study, show similar findings where caregivers of patients feel that there is no need to treat the elderly. The false beliefs in the health system, on the medications etc. posed a stressor on the HCPs of the hospital.

The nurses of the hospital in our study had low awareness of the standard guidelines and had a

loosely bent agenda in treating DM and HTN patients. Ferreante et al showed similar findings in the doctors of Argentina⁴².

Studies justify the overall quality of nurse managed health centres to be good⁴³. The quality of care was good among the nurses of our study too.

As described by the nurses, that the patients experienced many fears-fear of life, fear of medications, fear of complication of disease, fear of family, fear of social life impact of disease, fear of stigmatization, and the fear of deprivation. These findings are similar to a study done by Maria D et al on fears and health needs of patients with diabetes in a rural population⁴³.

Psychosocial support was a prime expectation in the above study⁴³. Our study group of nurses, did administer psychosocial support, but patients false beliefs, bad behaviour, violence of attenders and the factors listed, hinder their efforts in giving a holistic care.

Our study and the study done by Maria P et al show the need for adequate training, but having said so, the nurses had to face many difficulties of negative mood, poor psychological disruption, violence against health staff, fears of allopathic medications. These fears, were barriers in achieving success in being able to explain to the patient of their disease⁴³.

Standardised study projects, like that of the Bakers Study⁴⁴ and the DASH study approach mandates the need for diet restriction in HTN patients⁴⁵. Our study shows that nurses did have an overall knowledge of the type of diet advice when it came to treating DM/HTN patients. But, further education on the same was required. False beliefs of the patients and that of the nurses themselves posed as a vacuum in the advice of adequate diet in the NCD patients.

Nurses play a vital role in the management of DM/HTN at the grass root level of the community. Our study shows its strength in a way that it expresses the health care providers issues in treating NCDs. HCPs are only care providers and don't control the nature or complication of the disease. A series of decorum and programme needs to be implemented for the safe functioning of the nurses in rural villages. Mass health educational camps and national programmes in educating the public is needed to dissolve the barriers, namely false beliefs of patients and false beliefs of HCPs. Certified courses that is government funded needs to be made mandatory to the rural set up health staff in order that, the nurses can be up to date with respect to guidelines and treatment regime with respect to DM and HTN.

Limitations: As very few studies were made in this field of interest a constant comparison of the same could not be made. Comparison with the surrounding Government PHCs could have been made.

Public health importance: Our study is the first of its kind to interview HCPs in a rural set up bringing out the difficulties faced in such hospitals. There is an immediate need to stabilise the Non-Government Mission Hospitals of the Country and to ensure safety to HCPs who in turn can maintain a high level of Health care. Need for standard Indian Protocol Guidelines for Rural Hospitals in India.

Direction of future research: Follow up interviews could have been done after the recommendations and educational platforms were set into place at the centre

CONCLUSION

NCDs are a burden on the fast growing societies in India. There is lack of HCPs in treating such NCDs. Many barriers to treating NCDs exist and lack of Indian Protocols for a rural population limits the quality of care to patients. HCPs face many difficulties which in turn increases the gap in the care to the patients.

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