Section: Community Medicine

Original Research Article

FIRST AND SUBSEQUENT HEALTH CARE CHOICES OF PATIENTS WITH NON-COMMUNICABLE DISEASES: A COMMUNITY-BASED CROSS-SECTIONAL STUDY

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ABSTRACT

Background: Non-communicable diseases are increasing in urban areas and require continuous treatment and regular follow-up. In India, people have access to different systems of medicine and their choice may change during the course of illness. Understanding these patterns is crucial for enhancing continuity of care and promoting the safe use of multiple modalities. The objective is to describe the first health care modality selected by adults with non-communicable diseases, to assess switching between different modalities and to identify reasons for these choices.

Materials and Methods: A community-based cross-sectional study was conducted among adults aged forty years and above with a confirmed non-communicable disease for more than six months. Households were selected using a multistage method and one eligible participant from each household was interviewed. A structured, pre-tested questionnaire was used to collect information on socio-demographic details, disease profile, first healthcare choice, switching behavior and reasons for switching.

Results: The majority of participants were aged 40–60 years. Modern medicine was the first choice for 90.7 percent, and private facilities were commonly used. Accessibility, perceived effectiveness and advice from family members were major reasons for the initial choice. Satisfaction with the first modality was reported by 83.3% of participants. Switching was reported by 23.3 percent and Homeopathy and Ayurveda were the most frequent second choices. Many participants used the second system in conjunction with the first, which may lead to unrecognized double dosing or overlapping treatment.

Conclusion: Modern medicine was the predominant first choice, but a notable proportion shifted to other systems during treatment. Combined use of more than one modality was observed. Health providers should take a detailed treatment history at each visit and offer guidance to ensure safe and coordinated use of different systems.

Keywords: Non-communicable Diseases, Health Care Seeking Behavior, Alternative Medicine.

INTRODUCTION

Non-communicable diseases are now a major public health challenge in India and contribute substantially to long-term morbidity and premature mortality. Conditions such as hypertension, diabetes, cardiovascular diseases, chronic respiratory diseases and stroke account for a growing share of the disease burden, especially in urban areas where ageing, lifestyle changes and reduced physical activity have altered risk patterns.[1] As these conditions require continuous treatment, regular monitoring and sustained behavioral modifications, the nature of health care use becomes an important determinant of long-term outcomes.

India has a pluralistic healthcare system where people can choose between modern medicine and several traditional systems, including Ayurveda, Homeopathy, Unani, Siddha, Naturopathy and various faith-based practices. This diversity reflects strong cultural traditions and widespread acceptance of multiple healing systems. Studies have shown that individuals often shift between these systems based on perceived benefits, convenience, advice from family or peers and personal beliefs about illness and recovery.[2,3] The first choice of health care after diagnosis is shaped by accessibility, cost, waiting time, trust in the provider and earlier experiences and these reasons vary across communities.[4,5]

Health care decisions may also change as the illness progresses. Many patients reconsider their initial choice when expected improvement is not achieved, when side effects occur or when treatment becomes difficult to continue. Switching from one system to another has been reported in studies involving diabetes, hypertension and chronic respiratory conditions, and lack of improvement remains a consistent trigger for this behaviour.[6,7] Other reasons such as cost of medicines, distance to the facility, dissatisfaction with the provider and influence from family also contribute to switching. These changes may interrupt continuity of care, duplicate treatment or delay the management of complications which are important concerns in chronic disease control.[8]

Although several studies describe the use of individual health systems, very few examine both first choice and subsequent switching within the same population. Evidence is particularly limited from community-based studies in urban settings where multiple health systems operate closely together. Understanding patterns of first choice, switching and the reasons that influence these decisions is important for strengthening counselling, improving continuity of care and planning integrated interventions. This study contributes to the existing evidence by examining healthcare choices and switching behavior among adults with non-communicable diseases in an urban community. The specific objectives were to determine the first health care modality chosen after diagnosis, to assess the pattern of switching between different modalities and to identify the reasons influencing both the initial choice and later switching behavior.

MATERIALS AND METHODS

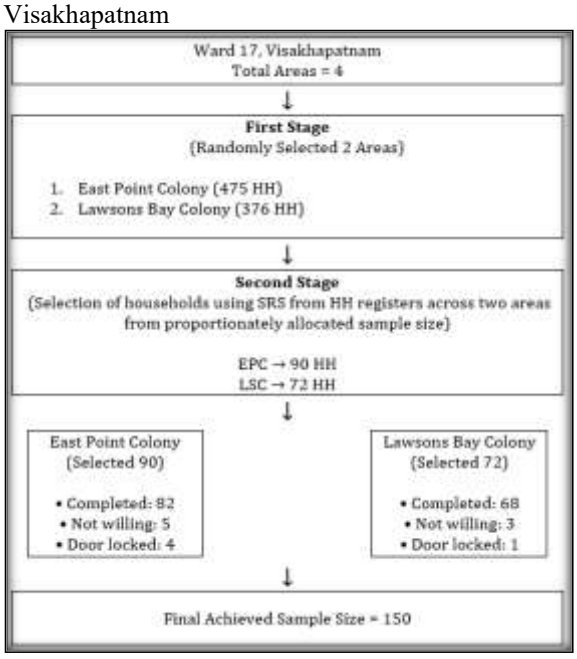
Study Design and Setting: A community-based cross-sectional study was conducted in selected urban areas of Visakhapatnam district, Andhra Pradesh.

Study Population: The study population consisted of urban adults aged 40 years and above with a confirmed diagnosis of at least one non-communicable disease for a minimum duration of six months. Conditions such as hypertension, diabetes mellitus, cardiovascular diseases, chronic respiratory diseases and other chronic disorders were included.

Sample size: The sample size was calculated using an expected switching proportion of nearly 40% reported in earlier Indian studies on treatment changes among patients with chronic illnesses (6,9). Based on this estimate, a relative precision of 20% was used, which corresponded to an absolute precision of 8% at the 95% confidence level. Using the standard formula for a single proportion, the initial sample size obtained was 145. After adding 10% of non-response or not available rate, the required sample size increased to 162. In the present study, 150 participants were successfully enrolled.

Sampling Method: A multistage sampling approach was used. In the first stage, two areas from ward 17 of Visakhapatnam were selected by simple random sampling. In the second stage, systematic sampling was used to select households (HH) within each chosen ward. One eligible participant from each house was interviewed. When more than one eligible person was present, the older person who met the criteria was included. In case no eligible person in the house, the next immediate house was chosen.

Flow Chart: Two-Stage Sampling in Ward 17, Visakhapatnam



Data Collection Tool: A structured and pre-tested questionnaire was used to collect the data. The tool captured socio-demographic information, type and duration of the illness, the first health care modality chosen after diagnosis and the reasons guiding that choice. It also collected information on switching behavior, reasons associated with switching and satisfaction with both the first and second modalities. Whenever possible, responses were cross-checked with prescriptions or available medical records.

Data Collection Procedure: Face-to-face interviews were carried out in the local language after obtaining written informed consent. Interviews were conducted in a private location within the participant's home to ensure comfort and confidentiality. If no eligible participant was available in the selected household, the immediate next house was approached and included using the same eligibility criteria.

Data Analysis: Descriptive statistics were used to summarize the findings. Percentages were used to present socio-demographic characteristics, disease distribution, first health care choices, switching patterns and reasons influencing decisions. Bootstrapped confidence intervals were calculated.

Ethical Considerations: Ethical approval was obtained from the Institutional Ethics Committee. Participants were informed about the purpose of the study and confidentiality and anonymity were maintained. No personal identifiers were used during data entry or analysis.

RESULTS

A total of 150 participants were included in the study. The age distribution showed that 54.7% were in the 40–50 years group and 36.7% were in the 50–60 years group, while 4.0% and 4.7% belonged to the 60–70 and 70–80 year categories respectively. Males formed 62.0% of the study population. Most participants were married (91.3%). Educational attainment was high, with 67.3% having completed a graduation or post-graduation degree. Professional workers accounted for 47.3%, followed by homemakers (24.0%). Diabetes (48.0%) and cardiovascular diseases (43.3%) were the most commonly reported conditions. The duration of diagnosis was ≤5 years for 66.7% of participants.

Modern medicine was the first treatment modality chosen by 90.7% (95% CI: 86.0–94.7) of participants, demonstrating a strong and consistent preference for allopathic care at the initial stage. Alternative modalities such as Homeopathy and Unani were each selected by 2.7% (95% CI: 0.7–5.3), while 0.7% (95% CI: 0.0–2.0) chose Ayurveda. The reasons for choosing the first system reflected a mixture of practical and experiential reasons. Accessibility showed the strongest influence at 84.0% (95% CI: 78.0–89.3), followed by perceived effectiveness at 70.0% (95% CI: 62.7–77.3) and recommendations from family or friends at 66.7% (95% CI: 59.3–74.0). Previous habit of use contributed 62.7% (95% CI: 54.7–70.7). These findings suggest that the initial treatment decision was strongly shaped by convenience, trust and social endorsement, while cost-related reasons such as affordability 55.3% (95% CI: 47.3–63.3) played a relatively smaller role. [Table 1]

Switching from the initial modality was reported by 23.3% (95% CI: 16.0–30.7), and most participants who switched did so based on interpersonal advice. Family members and other patients influenced switching in 65.7% (95% CI: 48.6–80.0) of the cases. Newer information pathways also played a role: social media influenced 25.7% (95% CI: 11.4–40.0) and artificial intelligence-based tools influenced 17.1% (95% CI: 5.7–31.4). These figures indicate that while traditional interpersonal networks continue to shape health decisions, digital sources are becoming increasingly relevant in guiding treatment shifts. [Table 2]

Among those who changed modalities, Homeopathy was the most common second option (45.7%), followed by Ayurveda (25.7%) and spirit-based healing (11.4%). A striking finding was that 77.1% (95% CI: 62.9–91.4) used the second modality alongside the first one, instead of replacing it. This suggests that individuals often supplement their existing treatment rather than shifting completely, reflecting a pluralistic approach to managing chronic illness. The strong CI range supports the reliability of this combined-use pattern. [Table 2]

The reasons for switching showed that clinical concerns were more influential than logistical ones. Lack of improvement was reported by 71.4% (95% CI: 57.1–85.7), making it the dominant driver. Side effects contributed 45.7%, while medicine unavailability affected 40.0%. Dissatisfaction with the provider was reported by 34.3%, and long travel or waiting time and cost contributed 20.0% and 14.3%, respectively. These findings point towards gaps in perceived treatment outcomes and satisfaction with care delivery rather than accessibility alone [Table 3].

Table 1: First Health Care Modality After Diagnosis and Reasons for Initial Choice (n = 150)

First health care modality after diagnosis (n=150)	Frequency	Percent	Bootstrapped 95% CI
Modern medicine / Allopathy	136	90.7	86.0 – 94.7
Homeopathy	4	2.7	0.7 – 5.3
Unani	4	2.7	0.7 – 5.3
Ayurveda	1	0.7	0.0 – 2.0
Others	5	3.3	0.7 – 6.7
Reason for choosing the first modality (n=150) (Multi-options question)			
Habit of previous use	94	62.7	54.7 – 70.7
Perceived effectiveness	105	70.0	62.7 – 77.3

Affordability	83	55.3	47.3 – 63.3
Accessibility	126	84.0	78.0 – 89.3
Recommendation by family/friends	100	66.7	59.3 – 74.0
Short waiting time	73	48.7	40.7 – 56.7
Free or low-cost medicines	47	31.3	24.0 – 38.7
Cultural belief	34	22.7	16.0 – 29.3
Other	23	15.3	10.0 – 21.3

Table 2: Switching to Another Treatment Modality, Sources of Suggestion and Pattern of Use (n = 150; switching subgroup n = 35)

Moved to a different modality for the same condition (n=150)	Frequency	Percent	Bootstrapped 95% CI
Yes	35	23.3	16 - 30.7
No	115	76.7	-
Suggested second modality (n=35) (Multi-options question)			
Family	23	65.7	48.6 – 80.0
Friends	6	17.1	5.7 – 31.4
Other patient	23	65.7	48.6 – 80.0
Social media	9	25.7	11.4 – 40.0
Artificial Intelligence tools	6	17.1	5.7 – 31.4
Second modality used alone or in combination with the first (n=35)			
Combination	27	77.1	62.9 – 91.4
Alone	8	22.9	-

Table 3: Reasons for Switching to Another Modality (n = 35)

Reasons for switching (n=35) (Multi-options question)	Frequency	Percent	Bootstrapped 95% CI
No improvement	25	71.4	57.1 – 85.7
Side effects	16	45.7	28.4 – 63.7
Medicines not available	14	40.0	22.9 – 57.1
Dissatisfaction with provider	12	34.3	20.0 – 51.4
Long travel time / Waiting time	7	20.0	8.6 – 34.3
High cost	5	14.3	2.9 – 25.7

DISCUSSION

The present study shows important patterns in treatment behaviour among adults with non-communicable diseases. Switching between systems of care was reported by 23.3%, and this level of switching aligns with findings from Kerala, where 21–28% of patients with chronic diseases changed modalities when they felt their symptoms were not improving.[9] Such movement may disrupt treatment continuity and is consistent with evidence suggesting that inconsistent care contributes to poorer long-term outcomes.[10]

A notable finding of this study was the widespread use of multiple treatment modalities at the same time. Among those who shifted treatment, 77.1% continued to use both systems in combination. Earlier research in India reported combination use ranging from 60% to 75%, often because patients perceived different systems as complementary.[11] While each system may offer its own strengths, unsupervised combination can result in duplicate dosing or unrecognised interactions, particularly in chronic diseases requiring consistent regimens.[12] The proportion observed in this study lies on the higher end of published literature, suggesting that parallel use may be increasing.

The reasons for switching were also in line with existing studies. Advice from family members and other patients influenced 65.7% of participants, similar to findings where interpersonal recommendations guided treatment decisions in 62–70% of cases.[13] Digital influences were also evident. Social media prompted 25.7% of switching decisions, and 17.1% of participants reported suggestions from AI-based tools. Previous Indian reports described digital influence in 12–20% of patients with chronic diseases,[14,15] indicating that reliance on online information is gradually increasing.

Satisfaction after switching was high, with 91.4% of participants reporting a better experience with the second modality. Similar studies have shown satisfaction levels ranging from 85% to 92% with alternative systems of care.[16] However, satisfaction may reflect perceived comfort rather than objective clinical improvement, and combination use without professional guidance may complicate monitoring and follow-up.

The findings emphasise the need for stronger counselling to reduce unnecessary switching and to address the risks associated with the unsupervised use of multiple modalities. Literature indicates that structured communication improves adherence and supports continuity of care.[16] Coordinated guidance between different systems of medicine may help reduce fragmented treatment and promote safer decisions, as suggested in previous evaluations of India's pluralistic health system.[17,18] Strengthening patient education is essential so that treatment choices are based on reliable understanding rather than trial-and-error approaches or unverified digital suggestions.

CONCLUSION

The study shows that treatment choices among adults with non-communicable diseases are shaped by expectations of improvement, influence from family and peers and growing exposure to digital information. A substantial number of participants shifted from their initial system of care and many continued to use more than one modality at the same time, which may interrupt continuity of care and create difficulties in monitoring long-term treatment response. Although satisfaction after switching was high, unsupervised combination therapy can lead to duplicate dosing or unrecognized interactions, especially when patients do not disclose the full range of treatments they are using. These findings highlight the need for regular counselling, clear communication and a complete treatment history at every clinical visit. Strengthening guidance on the safe and coordinated use of different systems of medicine, as well as improving follow-up practices, may help reduce fragmented care and support better management of non-communicable diseases in community settings.

Limitations

1. Information on switching and modality use was based on self-reported data, which may be affected by recall differences even though records were checked when available.
2. The study was conducted in one urban area and the findings may not fully represent rural settings or other regions with different patterns of health care access.

Recommendations

1. Health care providers should routinely take a complete treatment history, including all systems of medicine being used, to ensure safe and coordinated care.
2. Counselling at the time of diagnosis and during follow-up should address the risks of unsupervised combination therapy and guide patients toward informed, safe treatment decisions.
3. Public health programmes should strengthen communication strategies and promote responsible use of digital health information so that treatment decisions are based on reliable sources rather than unverified online suggestions.

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