



# Drivers of Home Healthcare Industry: Contrasting Views of Users and Providers in a Developing Country

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## **Authors' contributions**

*This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.*

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## **ABSTRACT**

Home healthcare fills an important void in a country's healthcare system; factors promoting home healthcare growth vary. In this study, the perceptions of the users and providers are analyzed to identify the important factors. Survey analysis was done for ten identified factors on 378 nurses and 394 patients. Responses were analyzed with Garret Ranking Method. The systematic random sampling method was used after acquiring the list of nurses working in home health organizations. The preference should be given to the user's perception as the customer is the king; it is encouraging for Indian home health providers that users are feeling they are deriving benefits from home health service usage; however, this feeling can be further enhanced by focusing on the right factors such as doctors recommendation, the rise of chronic diseases and the cost advantage associated with home health over Institutional care. Results revealed a disparity between the perceptions of the providers and users. This study suggests that home health agencies highlight features, such as cost-effective care, medical professionals' recommendation, and utility in providing relief to chronic disease patients.

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**Keywords:** Home healthcare; garret ranking method; chronic diseases; doctors recommendations; caregiver burden.

## 1. INTRODUCTION

India is a country of more than a billion people. It is expected to surpass China to become the most populous country by 2020 [1]. The elderly population accounts for nearly 8.6 % of the total population in India. They are in a disadvantaged position compared to their counterparts in developed countries in matters related to access to home healthcare, health insurance, and economic independence [2]. Home Healthcare is getting popular in India, especially in tier one and tier two cities.

Moreover, reports suggest that the market for home healthcare in India is expected to double by 2019 [3]. Home Healthcare as a service is just one decade old, and providers are working to find the most appropriate business model. However, there is an abundance of private healthcare providers in urban areas compared to rural areas [4], which raises the question of why home health care in urban areas is increasing and the factors promoting the growth of home healthcare in India. The answer to this question will help the policymakers in identifying the gaps in the healthcare system. It will also help the home health providers get an insight into the relevant factors that would be considered while developing their strategic and operational plans. However, one more question arises whether the care recipient's perception and the caregiver's perception about the identified factors are similar or not; in other words, is there any correlation between the rank of identified factors from both provider's and receiver's perspective. There is no specific and proper research done to identify the factors promoting home health care growth in India. Thus, this study is planned to rank the identified factors and measure the correlation between the provider's and the care recipients' perspectives.

## 2. LITERATURE REVIEW

The identified factors responsible for the growth of home healthcare include technological advancement in monitoring and assist devices [5], making it easier for the caregivers to monitor the patient parameters from a distant place, with the rise in chronic diseases [6]. In India, the chronic disease burden is increasing [7]. The patients suffering from chronic diseases require monitoring and palliative care instead of long-

term hospitalizations that can be effectively delivered at home with home health services. Patients not being able to carry out activities of daily living [8], one important characteristic of older people is a dependency on others as they get unable to perform activities of daily living, home health service providers provide healthcare attendant at home services which make life easier for older people. With the rising number of nuclear families [9], India's family system is changing. It is moving from traditional Joint family to nuclear family concept, especially in urban areas.

Moreover, in joint families, the family members take up the responsibility of patient caretaking, leading to an increase in caregiver burden [10]. Cost advantage with home care as they are cheaper than a hospital. In earlier research, home healthcare is cheaper than acute hospital care [11]. Some customers opt for home healthcare because it offers Logistical Convenience [12]. Patients need not travel long distances to access health care. Moreover, presently doctors have also started to recommend home health services after experiencing their benefits to their patients, [13] Increased awareness about the availability of good quality home health service providers is another factor as these private home care providers are going for extensive promotional campaigns, preference for care at home in comparison to hospitals is yet another factor most relevant to elder patients [14]. The family member taking care of patient feels stressed and does not have the required skills also called as caregiver burden [6], Which can also an important factor. The identified factors are shown in Table 1.

## 3. PROPOSED METHOD

To rank the identified factors, Henry Garrett Ranking Method is used; this technique is used earlier also to rank stress factors [15], Industrial problems [16], and Factors affecting coffee brand selection [17]. There are seven steps for Henry Garret Ranking Method, as shown in Fig. 1.

### 3.1 Sample and Procedure

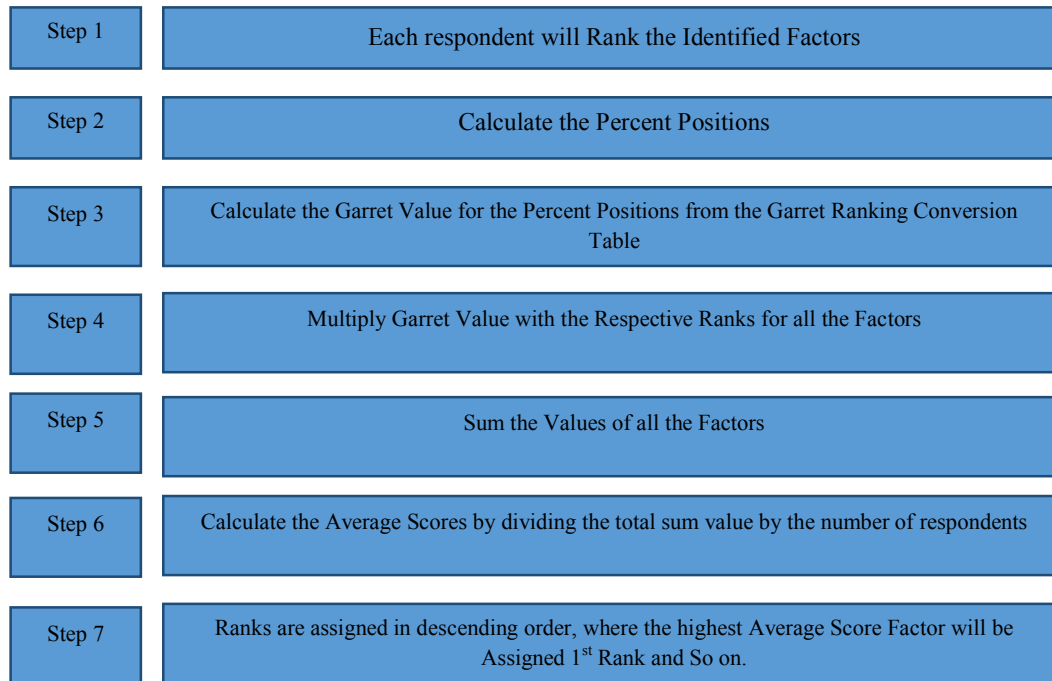
A total of 425 nurses and 425 patient caregivers were approached for their responses. The home health nurses with a minimum of 6 months of

experience in the home health care profession were selected for the study. The systematic random sampling method was used after acquiring the list of nurses working in home health organizations. Out of 425 nurses approached, 397 nurses agreed to fill the questionnaire, with a response rate of 93 %, out of 397 filled questionnaires, 19 questionnaires were discarded because of incomplete responses to more than forty percent questions, so finally, 378 filled questionnaire were

considered for the analysis. Similarly, 408 patients caregivers agreed to fill the questionnaire, with a response rate of 96 %. Moreover, 14 questionnaires were discarded because of incomplete responses, so finally, 394 filled questionnaires were considered for the analysis. The survey questionnaire consisted of two sections, A and B, where section A comprised demographic questions and section B comprised the list of identified 10 factors.

**Table 1. Identified factors responsible for the growth of home healthcare in India**

Sr. no	Factors
1	Cost advantage with home care as they are cheaper than hospital
2	Doctor's recommendation for Home health services
3	Increased awareness about the availability of good quality home health service providers
4	Logistical Convenience, i.e., the comfort of getting services at home
5	The patient cannot carry out activities of daily living such as bathing, dressing, eating, going to the toilet, and moving without one's help.
6	Preference for care at home in comparison to hospitals
7	Rise in chronic diseases such as arthritis, diabetes, etc.
8	The rising number of Nuclear Families
9	Technological advancement in monitoring and assist devices
10	The family member taking care of the patient feels stressed and does not have the required skills.



**Fig. 1. Henry garret ranking method**

## 4. RESULTS AND DISCUSSION

The caregiver respondents' demographic analysis revealed that the majority of the family caregivers were in the age group of 31- 40 years with 34 % and 41-50 years with 48 %. However, out of all caregivers around 65.5 % were males and 34.5 % were females. Moreover, around 72 % of the caregiver's education level was graduation and above. Lastly, around 81.1 % of the caregivers were married. Similarly, the home health nurses' demographic analysis revealed that most of them were females, with 53 % and around 70 % of the nursing staff were less than 40 years of age. Around 30 percent were diploma holders, and 67 % had a bachelor's degree in educational qualifications. The percent score for each rank from 1 to 10 is calculated using the formula.

$$PercentScore = 100 \frac{R_{ij}-0.5}{N_j} \quad (1)$$

$R_{ij}$ , where  $R_{ij}$  is rank for  $i$ th item  $j$ th individual, and  $N_j$  is the number of items ranked by the  $j$ th individual. The next step is to convert scale value using the scales conversion table given by Henry Garret. The scale values from 1<sup>st</sup> to 10<sup>th</sup> ranks are [16] 82,70,60,58,52,47,42,37,30,18.

The Table 2 analysis of patient's perspective revealed according to the patient's perception, the top 5 factors out of 10 responsible for the growth of home healthcare in India are doctor's recommendation to opt for home health with an average score of 53.71, followed by the rise in chronic diseases (51.76), Cost Advantage with home healthcare (50.85). Logistical Convenience with home healthcare (50.36), and rising number of Nuclear Families (50.21). Moreover, the Table 3 analysis of Home Health Nurses perspective revealed that according to the home health nurses perception, the top five factors out of ten responsible for the growth of home healthcare in India are Cost Advantage with an average score (82), followed by Increased awareness among patients and their caregivers about the availability of good quality home health service providers (62), Rising number of nuclear families (57), Preference of Care at home (52) and Logistical Convenience (47).

### 4.1 Discussion

The analysis of patients perspective revealed that for them, the doctor's recommendation to opt for home healthcare is the most important reason which is leading the growth of home healthcare in India, and that is because the patients trust the doctor and are convinced by the justifications given by the doctor for preferring home healthcare instead of keeping the patient at the hospital, this aspect also brings the importance of effective communication between patients and the doctors where one of The Final Summary of both the patients and nurses perceived factors responsible for the growth of home healthcare in India is presented in Table 4.

The important goals of effective communication is to facilitate the exchange of information [18]. Moreover, the doctors in India would have also started to recommend home healthcare because of primarily two reasons: first, after gaining faith in the capability of Indian home health service providers and, secondly, because of extensive marketing programs by home health providers to impanel medical practitioners to refer patients to them. However, to the surprise of the researchers, the nurses put doctor's recommendation at seventh rank, which clearly shows that the providers are missing an important link and the best way to get more customers is to market about the good services and special service offering to the key medical practitioners to increase their awareness about the existence of good quality home health services in the town and to educate them about the gap home health providers can bridge in the Indian healthcare system. Moreover, the nurses are opining that cost advantage with home healthcare services compared to costly hospitalizations is the most important reason for the growth of home healthcare in India. As per research, it was found that a patient, on average, spends Rs. 463 per day for hospitalization in India [19]. However, patients put that as the third most important reason for the growth of home healthcare, which is slightly surprising as home healthcare users are considering cost advantage as the third most important reason which details are given in Table 4.

**Table 2. Average score of factors based on patients perceptions**

Factors	1 <sup>st</sup>	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	Total Score	Average Score
C2	3034	5600	3276	2958	520	1440	2058	828	870	576	21160	53.71
C7	4428	1470	3150	1914	3172	1248	1764	1980	870	396	20392	51.76
C1	3034	5950	1008	1566	2236	1440	1260	1620	1218	702	20034	50.85
C4	3116	3570	3150	2262	1976	1488	1092	1404	812	972	19842	50.36
C8	4018	2380	2394	3132	2496	1488	714	1044	1595	522	19783	50.21
C3	2952	2450	2394	2030	2392	2688	1134	1152	1479	684	19355	49.12
C6	2624	1890	3087	3016	1664	2064	1932	1368	435	1080	19160	48.63
C9	3362	1400	2520	1508	2964	2736	1428	864	1421	828	19031	48.30
C5	4182	2380	1827	290	1560	1344	2394	2304	1740	648	18669	47.38
C10	1394	490	1386	4060	1612	2976	2856	1692	928	684	18078	45.88

**Table 3. Average score of factors based on nurses perceptions**

Factors	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	Total Score	Average Score
C1	2542	4756	1968	1640	1640	2214	7298	4428	3198	1312	30996	82
C3	2914	2480	2790	2976	2976	1116	3286	1736	1364	1798	23436	62
C8	1710	1938	2052	3021	1311	2166	1596	3078	1254	3420	21546	57
C6	2288	1300	1924	2496	1196	1248	1508	2860	3536	1300	19656	52
C4	1128	940	1363	1269	2585	1692	1081	1645	2820	3243	17766	47
C7	2508	1892	1364	1144	2376	2024	748	2200	1012	1364	16632	44
C2	1922	868	1581	899	682	651	1891	775	1891	558	11718	31
C9	810	1890	1380	1320	1290	1560	990	570	300	1230	11340	30
C10	162	918	459	1512	1053	2916	243	891	1350	702	10206	27
C5	1248	792	1536	600	1176	192	744	720	552	1512	9072	24

**Table 4. Final rank of factors based on patients and nurses perception**

<b>Patients Perception</b>	<b>Average Score</b>	<b>Nurses Perception</b>	<b>Average Score</b>
Doctors Recommendation	53.71	Cost Advantage	82
Rise in Chronic Diseases	51.76	Increased Awareness	62
Cost Advantage	50.85	Rising Number of Nuclear Families	57
Logistical Convenience	50.36	Preference of Care at home	52
Rising Number of Nuclear Families	50.21	Logistical Convenience	47
Increased Awareness	49.12	Rise in Chronic Diseases	44
Preference of Care at Home	48.63	Doctors Recommendation	31
Technological Advancement	48.30	Technological Advancement	30
Patients not being able to carry out activities of daily living	47.38	Family Member taking care are stressed	27
The Family Member taking care of patients feels stressed	45.88	Patients not being able to carry out activities of daily living	24

In contrast, the providers are taking it as the most important reason for the growth of home healthcare in India, highlighting that providers are not mapping the market properly or cannot communicate about the cost advantage with home healthcare to the consumers appropriately. The patients rank rise in India's chronic diseases as the second most important factor for the growth of home healthcare in India because they have experienced chronic diseases in their personal lives or know many people suffering from single or multiple chronic diseases. Here also a surprising finding is that home health providers rank growth of chronic diseases at sixth rank, which again highlights they are not reading the perception of consumers properly. Again the providers are ranking increased awareness about the availability of good quality home health providers as the second most important factor for the growth of HHC. However, the consumers are putting it at sixth rank in terms of importance, revealing the discrepancy between the marketers' and consumers' perception. Lastly, the most important finding of the study is that both the care receivers and the care providers ignore the role of caregiver burden in the growth of home healthcare in India, which might be because In the Indian culture to care for the elderly is considered as a moral responsibility and to accept them as a burden in front of the third person (researchers ) is a big task hence might be the respondents have given a biased response, or they might not have derived the utility form home healthcare to the level where they can say it has resulted in the reduction of caregiver burden, However reduction in caregiver burden is associated in most of the countries with the increased utilization of home healthcare [20]. Hence it can be summarized that there is a significant difference in perception between providers and users about the growth of home healthcare in India.

## 5. IMPLICATIONS

In this study, it was found that there are significant differences between the perceptions of patients and providers (nurses) about the growth of home healthcare in India which is not a good sign for the home health consumers, providers, and the industry as a whole, which shows that the providers are not reading the minds of the patients properly and this can hamper their ability to grow and serve the patients in a better way. Moreover, the home

health providers can focus on the identified factors based on patients' perceptions [21]. They can include them in their strategic and operational plans to get better results. For example, based on the patient's perception, the doctor's recommendation for home health services is the most important factor, which warrants that in the promotional campaign, the home health providers should ethically highlight themselves based on the received medical practitioner's testimonials. Similarly, they should tie up with maximum medical practitioners and make them aware of the range of services they provide, which can be useful for the patients suffering from chronic diseases. Moreover, they should conduct street plays and community outreach programs to make the community aware of the rising burden of chronic diseases in society and the cost advantage associated with home health service compared to the hospitalizations.

## 6. CONCLUSION

This study concludes that home healthcare in India is in the nascent stage, which is proven by the fact that there is a vast disparity between the perception of providers and users perception about the growth of home healthcare in India. Hence, the preference should be given to the user's perception as the customer is the king. It is encouraging for Indian home health providers to feel they are deriving benefits from home health service usage. However, this feeling can be further enhanced by focusing on the right factors such as doctors' recommendation, the rise of chronic diseases, and the cost advantage associated with home health over Institutional care. In the end, it is suggested that a fresh study should be carried out in which appropriate measures should be taken to reduce the respondent's biases for assessing the caregiver burden in caring for elder family members and the role of home healthcare in addressing it.

## CONSENT

As per international standard or university standard, patient's written consent has been collected and preserved by the author(s).

## ETHICAL APPROVAL

Ethical clearance taken from Symbiosis Institute of Health Sciences, Symbiosis International

(Deemed University) (SIU), Pune, Maharashtra, India.

### COMPETING INTERESTS

Authors have declared that no competing interests exist.

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