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## NUTRACEUTICALS: A SLOW TRANSITION FROM PREVENTIVE TO CURATIVE HEALTHCARE AND THE PERCEPTIONS AMONG PHYSICIANS AND PATIENTS - A STUDY OF SOUTH DELHI IN INDIA

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**ABSTRACT: Introduction:** The health and wellness sector is bracing for a radical change with Information and Communication Technology taking the leading role in research and development, diagnostics, and monitoring. The consumer's focus is shifting from treatment-based remedies to preventive remedies gradually. **Aim:** To explore the slow transition from curative to preventive healthcare in the prescribing behavior of physicians and the different perceptions among physicians and patients regarding Nutraceuticals. **Methods:** A cross-sectional study based on observation was conducted in South Delhi in India. Random sampling was used to divide the physician population into two strata namely physicians practicing in the hospitals and physicians practicing privately. The respondents were interviewed separately and the prescriptions and bills were scrutinized. Pediatricians were excluded from the study. The data was fed into EXCEL sheet and analyzed based on percentages and proportions. **Results:** It was found that vitamins comprised the largest chunk with 49% prescribed in the hospitals whereas 40% prescribed in the private clinics. It is found that 40% of the physicians agreed that non-availability was a major reason for fewer prescriptions. Sixty-five percent of the physicians and the patients disagree with the adequate awareness and supply of Nutraceuticals products whereas 50% disagree with the existence of the required variety of Nutraceuticals. Seventy-three percent and patients disagree that people consume a well-balanced diet everyday. **Conclusion:** Nutraceuticals prescribed at various healthcare organizations are less convincing. The present challenges need a systematic approach and proper coordination between the private and public healthcare sectors for better growth.

**INTRODUCTION:** The health and wellness sector is bracing for a radical change with Information and Communication Technology taking the leading role in research and development, diagnostics, and monitoring.

Today, diagnostics have become less invasive, imaging based and preventive. Medicines will be marketed as molecular and personalized drug cocktails. The high cost of treatment coupled with economic development has resulted in a positive impact for the people, given the fact that people all over the world are trying to be more proactive individuals <sup>1</sup>. However, given current levels of spending on healthcare by Governments, it is expected that the consumer's focus will shift from treatment-based remedies to preventive remedies in the upcoming years.

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A Nutraceutical is a product isolated from food stuff and can be sold in the form of powders; pills and other forms not generally associated with food and demonstrating numerous physiological utilities and offer protection against chronic diseases. Any type of food or a part of food carrying any health benefits can be called as Nutraceuticals<sup>2</sup>. Dr. Stephen De Felice who is the chairman and founder of the Foundation for Innovation in Medicine (FIM), Cranford, NJ, is often accredited to having coined the term Nutraceuticals<sup>3</sup>. The word is the conjugal of two words pharmaceuticals and nutrition.

One of the key stages in any process of product development for any food or supplement manufacturer is to enhance the functional ingredients in their products in order to preserve the stability during the process. Subsequently, the manufacturers of these products have to present these products in a lucrative and innovative style<sup>4</sup>.

This has led to rising customizing of the Nutraceuticals products worldwide. The knowledge and awareness of how diet affects human health is spreading across the globe and thus the perception towards a diet which is healthy has changed. The primary ingredients used in Nutraceuticals are antioxidants, oils and nutritional lipids, phytochemicals, minerals, Vitamins and proteins<sup>5</sup>.

Both health awareness and health promotion has been a guiding star in making the consumers more aware of the health promoting effects of food and the various properties in it. This function is definitely played by media and education. The success and efficacy of Nutraceuticals will surely be put to test in the upcoming times and it will be an edge over for those Nutraceuticals with fewer or minimum side effects<sup>6</sup>. There are innumerable evidences of Nutraceuticals offering protective action against various diseases like obesity, diabetes, heart disease, neoplasm's, neurological diseases and osteoporosis<sup>7</sup>.

One of the major goals in any health care system is to remove nutrition-related deficiencies and diseases which definitely affect the morbidity and mortality of the patients<sup>8</sup>. The main reasons can be attributed to lack of knowledge, non-availability of Nutraceuticals, financial limitations, patient beliefs,

and behavior. The current study is an endeavor to know how Nutraceuticals are increasingly prescribed by physicians as a preventive measure instead of a curative one with the basic intent of boosting his/her health status rather than targeting the ailment itself.

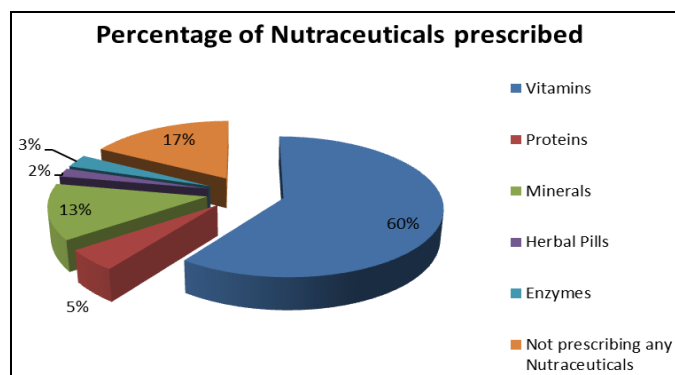
**Aim:** To explore the slow transition from curative to preventive healthcare in the prescribing behavior of physicians and the different perceptions amongst physicians and patients regarding Nutraceuticals.

**Methods:** A cross-sectional study based on observation was conducted in South Delhi in India and is concerned with two categories of 30 respondents each. The respondents were selected by random sampling after dividing the physician population into two strata namely physicians practicing in hospitals and physicians practicing privately. The period of the study was June 2016 to October 2016. The respondents were interviewed separately and the prescriptions and bills were scrutinized. Pediatricians were excluded from the study.

The data was gathered based on a structured pretested questionnaire comprising of the category of Nutraceuticals, their knowledge, and understanding of Nutraceuticals, the different perceptions among physicians and patients, health awareness activities influencing their prescription and finally the response from patients after prescribing it. The data was fed into excel sheet and analyzed based on percentages and proportions.

**RESULTS:** The prescription percentage of vitamins, proteins, minerals, herbal pills, and enzymes are shown in the **Fig 1**. As depicted in **Fig. 1**, 83% of the prescriptions generated in the Hospitals and the private clinics contained Nutraceuticals with the maximum percentage was for vitamins which accounted for 60%.

Alternatively, Nutraceuticals were not prescribed in 17% of the prescriptions. Proteins comprised 5%, minerals comprised 13%, herbal pills and enzymes comprised 2% and 3% respectively.



**FIG. 1: PERCENTAGE OF NUTRACEUTICALS PRESCRIBED**

The prescription percentage in the hospitals and the private clinics are shown in the **Table 1** below. It was found that vitamins comprised the largest chunk with 49% prescribed in the hospitals followed by 40% prescribed in private clinics. Proteins constituted 5% in the hospitals and 3% in private clinics.

**TABLE 1: PERCENTAGE PRESCRIBED IN THE HOSPITALS AND PRIVATE CLINICS**

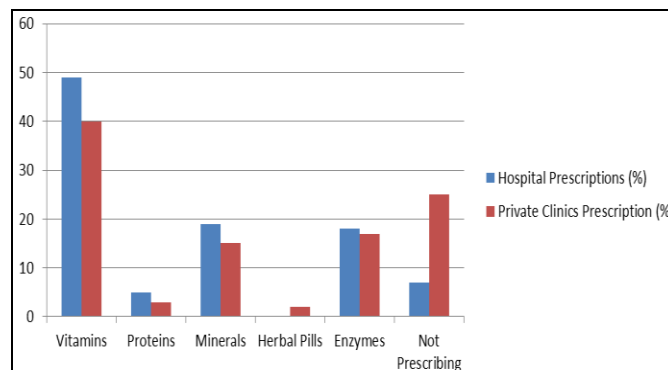
Nutraceutical products	Prescription percentage in hospitals (%)	Prescription percentage in private clinics (%)
Vitamins	49	40
Proteins	5	3
Minerals	19	15
Herbal Pills	2	0
Enzymes	18	17
Not prescribing	7	25

Minerals comprised 19% of the prescriptions in the hospitals and 15% in private clinics. The prescription percentage of enzymes was 18% in the hospitals and 17% in private clinics. Herbal pills were not prescribed in hospitals but percentage prescribed in private clinics was only 2%. It was also found that Nutraceuticals were not prescribed in 7% of hospital prescriptions and in 25% of private clinic's private clinics.

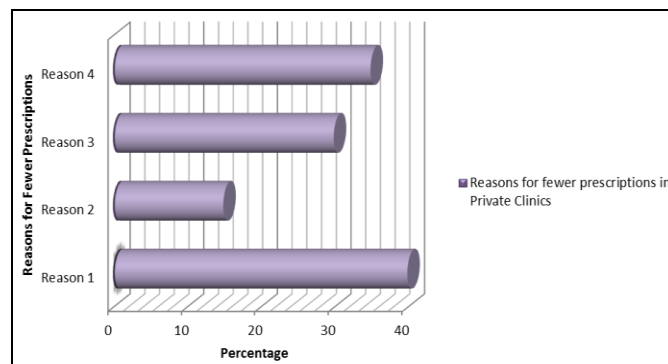
The above data is further plotted as a bar chart **Fig. 2** below, showing the distinction between the prescriptions of physicians in hospitals and private clinics.

The reasons for fewer prescriptions for Nutraceuticals in private clinics are shown in **Fig. 3**. It is found that 40% of the physicians agreed that non-availability was a major reason which was followed by 35% for less awareness about

Nutraceuticals. The other reasons were financial constraints of the patient which accounted for 30% and finally the high price of the Nutraceuticals products in the same range accounted for 15%.



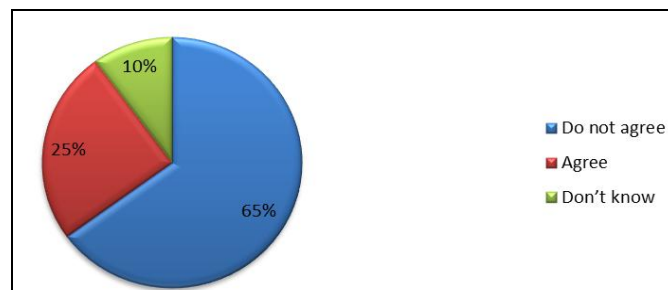
**FIG. 2: DIFFERENCE IN PRESCRIPTIONS OF NUTRACEUTICALS**



**FIG. 3: REASONS FOR FEWER PRESCRIPTIONS IN PRIVATE CLINICS**

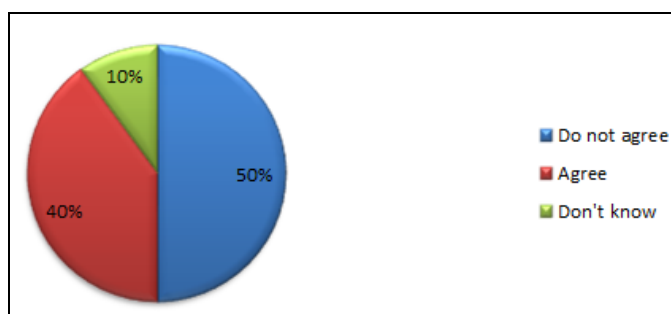
**Perceptions among the physicians and patients:**

The perception among the physicians and patients about awareness and supply of Nutraceuticals products is depicted in **Fig. 4**. It is shown below that 65% of the physicians as well as patients don't agree that there are adequate awareness and supply of Nutraceuticals products as per the demand, 25% have agreed that there exists sufficient awareness about Nutraceuticals whereas 10% don't know about it.



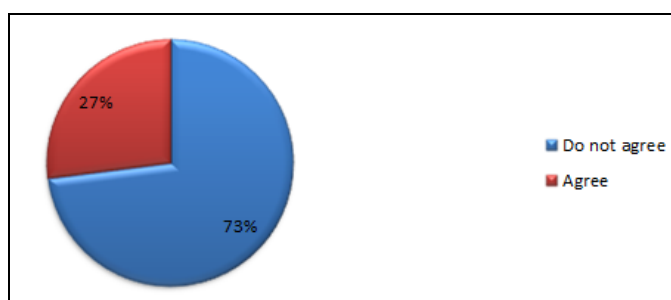
**FIG. 4: PERCEPTION ABOUT AWARENESS AND SUPPLY**

The perception whether the required variety of nutraceuticals is readily available in the market which caters to all groups of the population is shown in **Fig. 5**. It was found that 50% don't agree there exists the required variety of nutraceuticals in the market. 40% agree that the required variety of Nutraceuticals exists in the market whereas 10% of the physicians and patients don't know about the required variety of Nutraceuticals.



**FIG. 5: PERCEPTION ABOUT REQUIRED VARIETY OF NUTRACEUTICALS**

The perception amongst the physicians and patients regarding adequate consumption of nutritional food daily to maintain a well-balanced diet is depicted in **Fig. 6**. It was found that 73% of the physicians and the patients don't agree that people consume a well-balanced diet everyday containing all the nutritional elements. 27% of the physicians and patients agree that people consume a well-balanced diet daily.



**FIG. 6: PERCEPTION ABOUT A HEALTHY BALANCED DIET**

**DISCUSSION:** The platform is open for pharmaceutical companies to practice innovation in the field of Nutraceuticals and manufactures taking extra care to produce these products in a lucrative and innovative style<sup>9</sup>. India will be a strong market for Nutraceuticals as the companies will be a combination of multi-national pharmaceutical companies. A combined study carried out by the Assocham and RNCOS - 'Indian Nutraceuticals,

Herbals, and Functional Foods Industry: Emerging on Global Map,' found out that the market for Nutraceuticals globally, is projected to cross \$262.9 billion by the year 2020. It was forecasted that India's Nutraceuticals market would exceed \$6.1 billion by the year 2020 from the present stage of \$2.8 billion thereby rising at a Compound Annual Growth Rate (CAGR) of around 17 per cent<sup>10</sup>. There is an ever increasing wakefulness regarding health and fitness coupled with varying lifestyle<sup>11</sup>.

We find there is increasing customizing of the Nutraceuticals worldwide. The evolving definition of health, wellness, and well-being will turn out to be the new value proposition for manufacturers across this sector and an important factor of demarcation<sup>12</sup>. We find that there is a slow transition from the curative form of treatment to the preventive form of treatment. **Fig. 7** shows that Nutraceuticals encompass natural products not containing any harmful substances mostly prepared from food stuff. Manufacturers in designing these products have to deal with cultural differences as the food habits change from one culture to another. Another important aspect in manufacturing Nutraceuticals is that efficiency has to be upheld during formulation so as to get the best results<sup>13</sup>.

Finally, Nutraceuticals have to show specific health benefits as all patients are ever more conscious of the fact non-consumption of Nutraceuticals as a component of the diet cause many disorders. In a study carried out by Abdullah and Waqar, it was found that most of the patient's consumed Nutraceuticals in order to improve the function of the body, elevate their mental performances and to promote well-being entirely<sup>14</sup>. Physicians are better aware of the fact that Nutraceuticals have beneficial effects and henceforth they have included various types of products in their prescription<sup>15</sup>. There is an urgent need to make physicians and patients conscious of the different types of Nutraceuticals available in the market which can be taken as a preventive measure instead of a curative one<sup>16, 17</sup>.

The perception towards Nutraceuticals has to be addressed. Though Nutraceuticals are increasingly perceived to have a function in the diet of a population, adequate steps to promote



Nutraceuticals across all departments in a hospital and private clinics outside hospitals have to be taken.

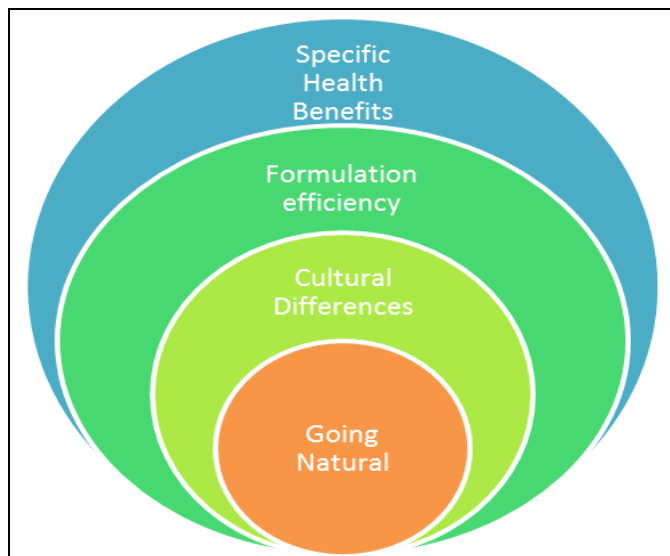


FIG. 7: CUSTOMIZATION OF NUTRACEUTICALS

**CONCLUSION:** Nutraceuticals are prescribed at various healthcare organizations but their proportion in the prescriptions is less convincing. There should be an immediate call for increasing the awareness about Nutraceuticals. The present challenges need a systematic approach and proper coordination between the private and public healthcare sectors for better growth. The expenditures within the healthcare system have increased exponentially and the need for continuation and sustainability of the system has forced many patients and consumers to hunt for further cost-effective alternatives.

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