

IS ONLINE SEARCH FOR MEDICATION INFORMATION WILL BECOME A NEW DIMENSION FOR NONCOMPLIANCE

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ABSTRACT

Objective: The aim of the present study was to investigate the effect of online medication information on adherence and beliefs with chronic illness.

Methods: The study was carried out at a tertiary-care teaching hospital. A questionnaire was used to assess beliefs on the online information, stopped the medication without consultation, missed dose based on information on online, trust on information provided by the health care provider, type and frequency of the online search information on medications and finally, adhere to the medication regimen.

Results: A total of 95 participants were interviewed and 60 participants were showed interest to participate in the study. Chronic illness conditions among them were mostly hypertension, diabetes mellitus followed by asthma and COPD, renal failure, inflammation and convulsions. Seeking online health information 30% daily, 33% weekly, monthly 10%, rarely 16% never 10%. The information mostly searched around 40% of treatment options, 35% of medication information and flowed by disease symptoms, dietary advises and physical exercises. Belief on online information was 66.7% positively and 33.3 negatively. Trust on healthcare provider about medication information the complete trust 60%, somewhat trust 38.30%, not trust was 1.6%. Only 15% subjects felt difficulty to adhere to medication regimen.

Conclusion: Despite of participants searching for online health information, still they have strong belief on prescription and medication adherence.

Keywords: Online medication information, Prescription adherence, Chronic disease conditions

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INTRODUCTION

Noncompliance (NC) towards prescribed medicine leads to worsening of symptoms disease progression, that often ends with, increase in mortality [1]. NC is a major issue in the management or treatment of participants with non-communicable diseases. Compliance with therapy is a primary determinant of treatment success [2]. NC is a serious problem that not only affects the participants' but also the healthcare system [3]. Medication NC results in approximately 125,000 deaths a year globally that are preventable [1].

The major possible factors for NC are fear, cost, misunderstanding, polypharmacy, lack of symptoms, mistrust, worry, and depression [4]. Earlier study conducted in Ghana found that participant with these perceptions rejected the medications and turned to herbal medicines and spiritual healing as therapeutic alternatives because of their easy accessibility, perceived efficacy, and affordability [5].

In addition to above said factors, use of the internet for information seeking became a new dimension that can influence compliance [6]. Internet has become an inevitable thing in this modern era for searching any type of information. Information regarding online health is, however, often inaccurate, inappropriate, or not updated. The use of such information may lead to change in the compliance of the participant [7]. The potential negative effect of using (inaccurate) online health information on public health-related behaviours has drawn research attention. The interplay between participants' online information-seeking behaviour throughout treatment, beliefs about medication, and medication adherence, therefore, warrants more research attention [8, 9].

A poor communication between participants and health care providers lead to increased rates of hospitalization, morbidity and mortality rates too [9]. There is evidence suggesting that improved knowledge of the disease condition also improves participant

adherence to lifestyle changes and medication [4]. However, most studies on participant's knowledge about prescribed medications are from western developed countries, while there is a relative lack of research from India and other developing countries [8, 10].

Most of the researches were based on medical professionals' views, and concurrently, participant factors in NC were not captured. It is important to carry out this study to determine the participant factors that affect medication NC in the local setting. Knowledge gaps need to be addressed to facilitate better participant compliance and not only to prevent morbidity and mortality but also economic burden to participant [1, 4]. Thus, this study was aimed to explore factors affecting medication NC in hospitalised participants who were under the medication.

MATERIALS AND METHODS

This study is a descriptive observational sectional study. The study period is approximately 4months (May 2023 to August 2023) in tertiary care general hospital, Andhra Pradesh, India. Study participants are those who are admitting as inpatients with same diagnosis earlier and are under the medication. After obtaining IEC clearance [IEC/IRB Ref No: 1084 - EC/1084 - 10/23], and consent from the study participants, participants will be recruited based on the inclusion and exclusion criteria the study. Participants who are between 18 to 60 y of age and treatment of cardiovascular disorders, diabetes mellitus, renal failure, infections, asthma, convulsions, cancer and chronic inflammatory diseases were included in this study. Participants who are with psychologically ill and comorbidities were excluded. The questionnaire prepared and standardized by sharing to our colleague's the medication adherence quality will be assessed by using the questionnaire about Medication Adherence, Online information-seeking behaviour, Beliefs about Medicine Questionnaire [11-13]. It takes 15 to 20 min to complete query for each participant and if not interested himself can be withdrawn. The previous medication is also assessed (Rationality to

particular diseases and its duration) and been documented. Data were analysed by using SPSS software version 20.0 and MS Excel-2007.

RESULTS

During the study period, a total of 95 were approached to recruit in the study based on inclusion criteria only 60 participants agreed to participate in the study. The participants' details, such as demographic profile, educational qualification, and medical history, were shown in table 1 and fig. 1 and 2. Among them, male were 51.60% and female were 48.30%. Participant's age was in a range from 21-60 y age and the majority were 51-60 y and least were between 21-30 y age group. Most of the participants were suffering from chronic illness, such as 30% with hypertension. 26.6% with diabetes mellitus, 21.60% with infections and followed by other illnesses like asthma and COPD, renal failure, inflammation and convulsions that are shown in fig. 1. Educational qualification of the study participants were less than 10th class are only 2% and remaining all are above 10th class that includes 40% postgraduation, 43% graduation, and 15% intermediate, shown in the fig. 2.

Our aim was to identify whether internet is influencing medication adherence. To achieve this, a validated questionnaire based on

adherence was given to participant. Questionnaire includes questions on how often used internet for medication information and what type of information. The participants were seeking internet for online health information 33%, 30%, 16% and 10% weekly, daily, rarely, and monthly, respectively. 10% of the participants have never used internet for seeking online health information. Around 40% of the participants was searching mostly information related to treatment options and 35% on medication information and, including symptoms of illness, dietary advice and physical exercise. In this study, 67% participants have positive belief on online formation out of which only very less 5% of participants were stopped taking medication without consulting doctor and around 33% have a negative opinion on the information regarding health provided in online table 2.

In this study, 60% study participates have complete trust, approximately 38% have somewhat trust and 2% not having trust on advice given by health care providers. Also 87% of the participants never missed dose and 13% of participants missed medication based on the online health information. Approximately 15% of participants have felt difficulty to adhere the prescription medication and 85% were adhered to the prescribed medication, were shown in table 2.

DISEASES CONDITON

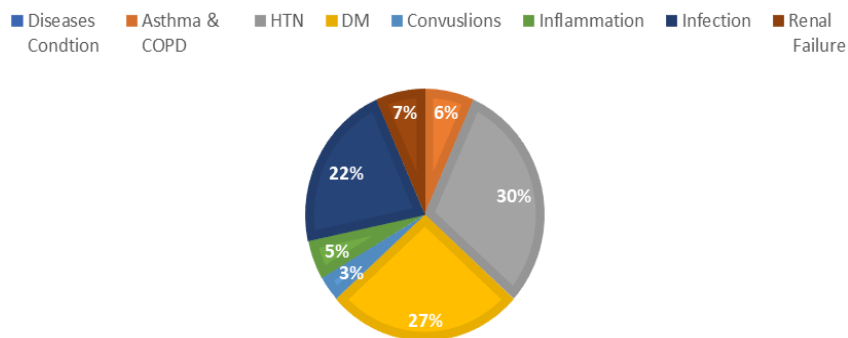


Fig. 1: Percentage of diseased conditions

Educational Qualification

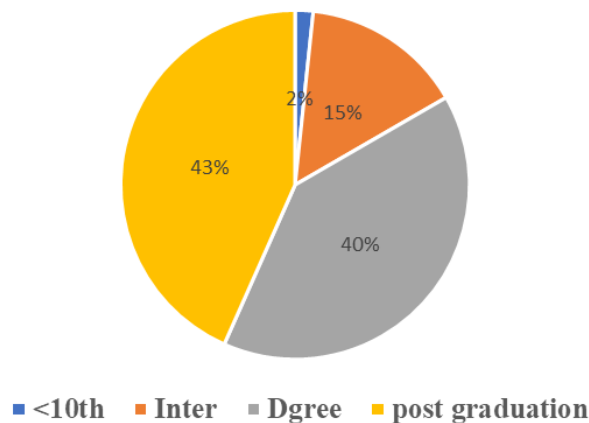


Fig. 2: Educational qualification of the subjects

Table 1: Demographic details

Age	21-30 y	31-40 y	41-50 y	51-60 y
	7	13	16	24
	11.60%	21.60%	26.60%	40%
Gender	Male		Female	
	31		29	
	51.60%		48.30%	

Table 2: Type online information seeking, prescription adherence, and belief

How often use the internet for medication information	Daily	Monthly	Never	Rarely	Weekly
What types of health information most commonly search	18 30%	6 10%	6 10%	10 16.00%	20 33.30%
Believe that online medication information has influenced your medication beliefs (n=60)	Dietary advice 5 8.30%	Fitness and exercise 1 1.60%	Medication information 21 35%	Symptoms of illnesses 9 15%	Treatment options 24 40%
Stopped taking your medication without consulting (n=40)		Negatively 20 33.30%		Positively 40 66.70%	
Trust advice given by your health care provide (n=60)	Complete trust 36 60%	No 38 95%	Somewhat trust 23 38.30%	Yes 02 5%	Not trust 1 1.66%
Missed a dose of your medication because of concerns or information found online (n=40)		No 35 87.5%		Yes 05 12.5%	
Difficult to adhere to your medication regimen (n=60)		No 51 85%		Yes 09 15%	
Medication taken only when I am sick (n=60)		No 38 63.3		Yes 22 36.6	

DISCUSSION

The internet has become a vital source of health information, with individuals frequently seeking treatment information, medication beliefs, dietary advice, fitness and exercise guidance, and symptom explanations online [4, 14]. Earlier study 72% of internet users searched for health information online, with 50% seeking treatment information and 43% seeking medication information similarly this study results are line with studies conducted by Fox *et al.*, 2013; Winker *et al.*, 2000; Kontos *et al.*, 2010 (table 2) [6-8].

Those who are seeking online information does not diminish their strong belief in communication, medication, and prescriptions from doctors. In fact, online information often reinforces the importance of doctor-participant communication [8, 9]. In the present study results shown strong belief on healthcare providers and positive opinion on online information which is reflecting the adherence results also (table 2). In pervious study found that participants who trusted their healthcare providers were more likely to adhere to their medication regimens [9]. A study found that participants who had positive opinions on online health information were more likely to adhere to their medication regimens [4, 8]. However, stopping medication without consulting a healthcare provider or missing doses can have negative consequences. Missing doses without consulting a doctor, based on online information, can be detrimental to health outcomes. In the present study, 12.5% of the participants missed the dose due on online information without consulting the health care providers. In earlier study found that 30% of participants reported missing doses due to online information [8].

Difficulty in adhering to medication regimens can also lead to poor health outcomes.

The present study only 15% of the participants felt the difficulty to medication adherence. In previous study up to 30% of prescriptions are never filled, and approximately 50% of medications for chronic disease are not taken as prescribed. A study done by Fischer *et al.*, identified various factors that contribute to medication non-adherence, including cognitive impairment, depression, and lack of social support [15]. In this study around 36.6% of participants have taken medication when they were in sick condition [16]. The fact that participants take medication only when sick may indicate a lack of understanding about the importance of ongoing medication use in managing chronic conditions [17]. May be other factors such as complex dosing schedules, side effects, and lack of trust in healthcare providers can contribute to non-adherence [9]. There

may be underline factors for non-compliance that needed to be addressed, such as economic status, medication accessibility, comorbidities, and pharmacogenetic variations [18].

LIMITATION

Though educational status found to be a confounder for searching online information, this study not analysed the influence of educational status on online searching medication information because only 2% of the study participants having less than 10th class education. Having only 2% less than 10th class education is also the strength of the study.

CONCLUSION

Frequency of hospitalization may not be solely attributed to beliefs in their doctors, online searching of medication information, and communication factors. The increasing trend of the using online health information is due to the increase in awareness and ease accessibility of mobile and not due to decrease in belief on physicians. Rather, other factors such as pharmacogenetic variations, economic conditions, and comorbidities may play a significant role in leading to hospitalization. Comorbidities can also increase the complexity of treatment, leading to hospitalization. Further research in large number of participants is warranted to elucidate the non-compliance.

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ABBREVIATIONS

NC (non-compliance), DM (Diabetes Miletus), HTN (Hypertension)

AUTHORS CONTRIBUTIONS

B V S Chandrasekhar and Sandeep designed the work. Girish contributed for the analysis and data. Data collection done by Sandeep. Girish P, B V S Chandrasekhar and C Sunil Chowdary contributed to the interpretation of the results and preparation of manuscript.

CONFLICT OF INTERESTS

Declared none

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