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Factors influencing *E*-pharmacy adoption in India: A study of user experiences through interpretative phenomenological analysis

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A R T I C L E   I N F O

A B S T R A C T

The rapid growth of e-commerce has led to the emergence of e-pharmacies, which enable consumers to purchase prescription medications online. This study aims to explore the factors influencing the adoption of e-pharmacies in India through an interpretative phenomenological analysis (IPA) approach. Twelve in-depth interviews were conducted with individuals who had experience ordering prescription medicines through e-pharmacies. The findings revealed that constructs from the UTAUT2 model, including performance expectancy, effort expectancy, social influence, facilitating conditions, price value, and habit, played a significant role in the adoption of e-pharmacies. Construct hedonic motivation, from UTAUT2, was found to be weakly significant in explaining the adoption of e-pharmacy. Additionally, health literacy was identified as a key factor, with e-pharmacy users demonstrating higher levels of health literacy. However, perceived risks, such as performance, financial, privacy, and psychological risks, were found to negatively influence the adoption of e-pharmacies. The study proposes, based on findings, a research model to understand consumer behavior in the adoption of e-pharmacies. The findings suggest that the presence of favorable conditions, such as convenience, accessibility, user-friendly interfaces, social influence, internet accessibility, integrated healthcare services, diverse payment methods, and price advantages, have contributed to the widespread acceptance and adoption of e-pharmacy services in India. The study highlights the need for future research to employ quantitative or mixed methods approaches to address the limitations of the current exploratory study and to investigate the multifaceted determinants of e-pharmacy adoption in different geographical contexts.

1. Introduction

The Internet has emerged as one of the most widely utilized technologies and digital phenomena, garnering significant attention across the world. Unequivocally, the utilization of the internet plays a pivotal role in various aspects of contemporary life. Within the Asia Pacific region, India boasts the largest number of internet users and is ranked as the third largest internet user globally.[1] The internet has evolved into one of the most significant and prevalent platforms, presenting substantial opportunities for businesses, generally referred as e-commerce businesses, to market their goods and services on a global scale. *E*-pharmacy constitutes a form of e-commerce wherein vendors sell medicines, healthcare products, and related items through an online platform such as a mobile application or a web portal.[2] *E*-pharmacy, also referred to as internet pharmacy, mail order pharmacy, online pharmacies or cyber pharmacies[3,4] is an emerging concept in India.

E-pharmacy offers numerous benefits to consumers, including cost savings, time efficiency, convenience, increased availability of medicines, authenticity of medicines, ease of access to medications, refund policies, facilitated comparison of medicines in terms of cost and side effects, enhanced customer information and information exchange, customer privacy, home delivery, expedited distribution, and convenience for certain patients and elderly individuals who are unable to leave their residences ([5]; e-pharmacy in India: last mile access to medicines, 2019). In light of these advantages, it has been observed that medicine orders through e-pharmacy platforms have experienced a significant surge in orders for prescription medicines in recent past. Certain external factors such as lockdown associated with the COVID-19 pandemic where adherence to social distancing norms is mandated by government guidelines also accelerated the adoption of the e-pharmacies (Orders at e-pharmacies see bumper surge, 2020) in India.

In a developing nation like India where affordability and accessibility of healthcare is prime concern, e-pharmacy is one technology advancements that can bridge this gap and its worth for researchers to

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explore the factors affecting the adoption of e-pharmacies. However, in the past decade majority of research on e-pharmacies, especially in India, is conducted from deductive quantitative research lenses wherein established technology adoption models and theories like Technology acceptance model (TAM), Theory of planned behavior, Unified theory of acceptance and use of technology (UTAUT), UTAUT2 etc. had been used to explain the factors contributing to adoption of the e-pharmacies.[6,7,8,9,10] While Quantitative research yields factual, dependable outcome data that are typically generalizable to broader groups, qualitative research offers rich, nuanced, and credible process data derived from participants' viewpoints rather than that of the investigator.[11] Qualitative research effectively investigates and elucidates intricate human behaviors and experiences that may be challenging to quantify. This research takes qualitative research approach to understand and explore factors affecting adoption of e-pharmacy in India.

1.1. Purpose of the study

This study seeks to understand the adoption of e-pharmacies for ordering prescription medicines online from users' perspectives. The primary objective is to identify dimensions related to the cognitive process of ordering prescription medicines online and perceived risk associated with the use of e-pharmacy. The research will offer new insights to e-pharmacy stakeholders about customers' motivations for adopting e-pharmacies, thus making a dual contribution: (1) providing insights into factors influencing e-pharmacy adoption in India through interpretative phenomenological analysis, and (2) perceived risks associated with the use of e-pharmacy.

The main goal of the research is to establish dimensions of Social media activities and to identify the prominent Social media platforms in Indian Beauty and Wellness industry. The research will provide novel insights to Social media marketers and business owners regarding effective utilization of this low-cost marketing tool. In this way, the research will make dual contribution: (i) gain insights about social media usage in the promotion of beauty and wellness industry by investigating the dimensions which were not considered in prior research works and (ii) identify social media platforms used in the industry.

1.2. Research question

RQ1. What are the main dimensions of Social media activities for promotion of businessies?

RQ2. What are the perceived risk associated while ordering prescription medicines through e-pharmacies.

2. Review of literature

2.1. Understanding social media usagee in India

Electronic commerce (e-commerce) encompasses the buying and selling of products and services via the internet. India ranks second as the largest online market behind China, with 580 million users.[12] E-Pharmacies, a form of e-commerce, are online platforms that enable consumers to procure medications without visiting physical pharmacy establishments. These e-pharmacies serving as a comprehensive online portal where individuals can obtain medical consultation, order prescription medications upon submission of a valid prescription, access over-the-counter (OTC) health products, and in some instances, arrange for relevant health examinations, with all services delivered to their residence.[13]

In India, e-pharmacy operations are divided into three models: 1. Organized e-pharmacy, 2. Non-organized e-pharmacy, and 3. Illegal International Trade. The organized e-pharmacy sector connects users to

medications via two channels: a. technology-based and b. inventory-based. The technology-based method uses a digital platform, such as a website or mobile app, to link local pharmacies with consumers. The non-organized sector directly connects to end-users through online services. The key difference is that the former creates a many-to-many marketplace using technology, while the latter establishes a one-to-many relationship. The non-organized model often lacks proper prescription validation or record-keeping. The third model, illegal international trade, involves the cross-border trading of inexpensive, unlicensed drugs for profit.

2.1.1. E-pharmacy regulations in India

Pharmaceutical and cosmetic manufacturing, sale, and distribution in India are regulated by the Drug and Cosmetics Act, 1940, the Drugs and Cosmetics Rules, 1945, and the Pharmacy Act, 1948. The current legal framework lacks provisions for online drug sales. The Indian government proposed the Drugs and Cosmetics (Amendment) Rules, 2018 (Draft E-pharmacy Rules), which are not yet enacted. These rules require entities intending to sell, stock, or display medicines online to obtain a registration certificate valid for three years from the licensing authority. Additionally, in December 2015, the Drugs Controller General's office directed State and Union Territory Drug Controllers that the D&C Rules apply to online drug sales, emphasizing adherence to these rules in both online and offline contexts. This directive enabled the issuance of licenses to e-pharmacies. In the absence of clear e-pharmacy legislation, consumer vigilance becomes crucial. Despite e-pharmacy benefits, consumers must guard against fraud, verify service provider and product authenticity, and avoid websites dispensing medications without valid prescriptions ([14]; Draft Drugs and Cosmetics (Amendment) Rules, 2018[15];).

2.1.2. E-pharmacy market in India

Ken Market Research (2016) reported a global increase in e-pharmacy usage from 0.5 % in 2000 to 39 % in 2016. By 2018, the global e-pharmacy market was valued at approximately $42.32 billion, with projections to reach $107.53 billion by 2025, growing at a CAGR of 14.26 % between 2019 and 2025.[5] In India, while e-pharmacy is still emerging, it shows significant growth potential (Importance of E-Pharmacies for a Digital India: [13]). Currently, e-pharmacy sales constitute 1.5 % to 3 % of total retail pharma sales but could grow to 15–20 % soon ([16,17]; e-pharmacy in India: last mile access to medicines, 2019;). Frost and Sullivan estimate India's e-pharmacy market was valued at $512 million in 2018, with a projected growth at a CAGR of 63 % to reach $3657 million by 2022. Major e-pharmacy players in India include Medlife, Netmeds, 1MG, Pharmeasy, Myra, CareOnGo, and Apollo 24 × 7.[18] Social media is a media that uses internet to communicate globally, often using social networks. Recently, it has dipped its toes into marketing because nowadays almost every person has an account or more on social media platforms, and brands cannot miss this opportunity to advertise their products and services through it. Marketers have started using social media platforms after recognising its ability to reach specific and large audience. It is an inexpensive tool which has proven to be extremely useful for both small-scale and large-scale business. However, its usage varies in terms of the type, age, scale and nature of the business ([19]; [20]). It plays a major role in promotion and management of these businesses ([21]) and many studies revealed that there is a positive behavioral intention to use social media for business promotion ([22]; [23]). But some companies are using social media just to show their presence without understanding its true essence ([24]).

2.2. Trends in buying medicines through e-pharmacies

Health Information Systems (HIS) have become essential in healthcare, aiding professionals in scheduling and managing daily operations.[25] This advancement has reshaped perceptions of online healthcare delivery and increased adoption across diverse consumer demographics,

including gender, age, education, and location.[26] In response, more healthcare providers are adopting online sales models to leverage this market.[27] *E*-pharmacies incentivize individuals with health conditions to manage medications with minimal effort. The Internet has notably bridged the gap between rural populations and top medical facilities, ensuring timely medication delivery.[28] However, e-pharmacies have limited reach in remote areas of India.[29]

Research in India reveals that most respondents, particularly younger individuals, are knowledgeable about e-pharmacies and prefer them for medication purchases due to lower costs, higher discounts, home delivery convenience, availability of rare drugs, and privacy.[30,2,31,12] These results are consistent with global studies, as shown in a thorough literature review by Limbu & Huhmann,[32] which identified twelve factors influencing e-pharmacy purchasing behaviors: demographics, convenience, availability, price, purchase environment evaluations, information sources, internet usage, prior experience, perceived risk, health insurance, privacy, and product. Additionally, the frequency of e-pharmacy purchases has risen during and after the COVID pandemic.[33,34,35,5]

Studies indicate that non-prescription medicines are viewed differently from prescription ones, with most non-prescription drugs bought online through e-pharmacies. Non-users of e-pharmacies primarily cited safety concerns for avoiding online purchases, and education was identified as a crucial factor in promoting the safe use of e-pharmacies for buying medicines.[36,37]

2.3. Information system research inadoption of ies

IS research has extensively examined the factors influencing individual adoption of new information technologies.[38] Empirical studies in IS have identified two categories of antecedents affecting e-commerce adoption: technological attributes and trust.[7] Researchers have used various models and theories, extending them with novel constructs, to study consumers' intentions to adopt new technologies. Notable models include the technology acceptance model (TAM) ([39]), theory of planned behavior (TPB) (Ajzen, 1991), innovation diffusion theory (IDT) ([40]), TAM 2 ([41]), Unified theory of acceptance and use of technology (UTAUT) ([42]), TAM 3 ([43]), and extended Unified theory of acceptance and use of technology (UTAUT2) ([44]). Previous research indicates that TAM and UTAUT are widely recognized frameworks for analyzing IS adoption behavior.[45,46]

Davis developed the Technology Acceptance Model (TAM) in 1989, positing that users' perceptions of a technology's ease of use and usefulness influence their attitudes and intentions to use it.[47] TAM, based on the theory of reasoned action (TRA), includes two primary predictors—perceived ease of use and perceived usefulness—and the dependent variable, behavioral intention. Its simplicity and understandability make it popular in IS research ([48]). TAM evolved into TAM2, proposed by Venkatesh and Davis in 2000, to account for additional factors influencing technology acceptance beyond perceived usefulness and ease of use, incorporating social and cognitive processes.[49] TAM has been applied in research on e-pharmacy adoption[50,51,7,52] and combined with theories like innovation diffusion theory (IDT), the comprehensive model of information seeking (CMIS), and the model of external consumer information search to study antecedents of adopting healthcare technology and online non-prescription drug information seeking ([53,54];).

[42] introduced the Unified Theory of Acceptance and Use of Technology (UTAUT), integrating eight models and theories: the personal computer usage model, innovation diffusion theory, technology acceptance model, theory of reasoned action, combined TAM-PBT, theory of planned behavior (PBT), social cognitive theory, and motivational model, to explain individual adoption of information technology and systems.[55] UTAUT includes four key factors: performance expectancy, social influence, effort expectancy, and facilitating conditions, along with four moderating variables: gender, age, experience, and

voluntariness of use, which affect the relationships between the primary factors and behavioral intention and use behavior (Venkatesh et al., 2003). Researchers have used UTAUT to study e-commerce adoption[56,57,58,59] and e-learning[60,61,62,63] among different user groups. In e-pharmacy research, UTAUT has been used to identify determinants of e-pharmacy adoption.[6,8,10]

UTAUT2, developed by Venkatesh et al. (2012), extends the original UTAUT model by incorporating consumer market factors such as price value, hedonic motivation, and habit. UTAUT2's predictive capability significantly exceeds UTAUT, explaining about 74 % of the variance in consumers' behavioral intention and 52 % in technology usage ([64]; Venkatesh et al., 2016). Numerous studies have utilized UTAUT2 to elucidate the adoption of various health information technologies across different user groups.[65,66,67,68,69,70] Recently, UTAUT2 has also been employed to examine factors influencing e-pharmacy adoption.[71,72,9]

Apart from TAM and UTAUT models, IS research in context of e-pharmacy also utilized theory of habitual purchase behavior,[73] push–pull–mooring theory,[74,75] theory of planned behavior[76,77] and regulatory focus theory[78] to understand the consumer's behavior intentions towards e-pharmacy adoption.

2.4. Interpretative phenomenological analysis in IS research

Interpretative phenomenological analysis (IPA) aims to understand individuals' (ideography) subjective experiences (phenomenology) and the meanings they assign to these experiences (hermeneutics).[79,80] Its strength lies in elucidating developmental processes (e.g., transitioning from non-adopter to adopter of technology) and understanding engagement with information systems.[81,82] Initially a psychological research method, IPA has become widely used across disciplines. It has been applied in studies examining technology adoption in various industries.[83,84,85,86] In healthcare research, IPA has been employed to understand diverse situations and contexts.[87,88,89,90] Additionally, IPA has been utilized in research on health information technology and systems to explore consumer behavior.[91,92,93,94,95]

Review of the existing research suggests that IPA is a highly effective method for investigating complex topics, particularly those related to health issues. However, this approach has not been widely employed in the context of e-pharmacy studies, despite its potential applicability to this field.

3. Research methodology

3.1. Research approach

The research paradigm establishes the foundation for any investigation and is crucial for producing rigorous research.[96] A research paradigm is a frame of reference, guided by a belief system or worldview, that influences how we perceive and interpret the world and information ([97,98,99];), which constitutes a set of assumptions and beliefs about knowledge development.[100] Ontology, Epistemology and Axiology, related philosophical concept yet have distinct focus, address these assumptions using two extremes: Objectivism and Subjectivism.[100] Moreover, the context and type of investigation determine the most appropriate research methodology.[101] Qualitative research methods are considered most suitable for obtaining precise and in-depth knowledge about a field or a small group of individuals and address questions of how and why[102,103] as they provide a deeper understanding rather than a broader one, particularly when the nature of study is exploratory.[104] Research output falls into two broad categories: theory construction (i. e., concrete understanding) and theory testing (i.e., generalization). This study employed an inductive approach to theory construction based on an interpretative phenomenological analysis.[105] It adheres to an interpretivism approach subscribed to relativism ontology and subjectivism epistemology for knowledge discovery.[106,102,107,108] Results from knowledge-building and theory-generating qualitative studies possess

the potential to inform policy formation and practice across various disciplines[109] hence this exploratory study was conducted to provide new insights to e-pharmacy stakeholders i.e. Government, marketers, consumer and business owners.

3.2. Sample size and technique

The smallest acceptable sample for in-depth qualitative interview is 1 and it can be highly beneficial for enhancing one's knowledge.[110,111]The purpose of sampling in qualitative research is concerned with richness of information i.e. explore the range of opinions and different representation of an issue, not to count the number of opinions.[112]; Hennink & Kaiser,[113] in a detailed systemic review of qualitative studies, found that saturation reaches in 9–17 interviews. For studies employing interpretative phenomenological analysis (IPA), a thorough examination of phenomena can be effectively conducted with a very limited number of participants. As such, researchers recommend using a sample size of 6 for these types of investigations[105] In this research, a total of seven twelvein-depth interviews were carried out with people involved in Social Media activities of their business. In making a justification for an adopted sample size, qualitative researchers should refer to data saturation and homogeneity of the population.[110,114] Data Saturation could be known after 6 in-depth interviews ([115]) and for homogeneous group, small sample size is enough ([116]). The study employed convenience sampling[117] to choose participants, primarily based on their ease of access and readiness to take part in the research. This study utilizes in-depth interviews, a qualitative research approach,[117,118] to examine the elements affecting e-pharmacy adoption. Researchers conducted these interviews either face-to-face or via phone, depending on what was most convenient for the participants. The study sample comprised 8 males and 4 females, ranging from 25 to 62 years old. With the interviewees' permission, all conversations were recorded and transcribed. Information is collected around the primary research objective about the factors influencing the adoption of e-pharmacy and perceived risk associated with its use.

Subsequent questions were based on the flow of discussion and researchers' inquisitiveness. The researchers maintained the flexibility to modify or rephrase questions as needed. All participants agreed to have their information disclosed for the study; their details are presented in a table below:

The collected data is examined using Interpretative Phenomenological Analysis (IPA). This approach is particularly suitable for this study due to its phenomenological nature, which allows for a flexible exploration and description of the phenomenon.[111] The primary objective of employing IPA is to gain insight into the participant's viewpoint, which aligns well with investigating the adoption of e-pharmacy, a form of e-commerce.[119,120] In this study, all recorded interviews were transcribed, with each transcript analyzed independently, thereby upholding IPA's idiographic commitment ([121]). Subsequently, the transcripts were examined in parallel to identify nomothetic themes. Ultimately, the factors influencing e-pharmacy adoption were determined. Throughout the research process, the researcher maintained a reflexive attitude,[122] and notes were taken on the participants' nonverbal and vocal communications.

4. Findings

Recently, online prescription medication purchases have surged. E-pharmacies provide benefits such as competitive pricing, convenience, product availability, easy access, enhanced customer information, and improved communication. However, like any new technology, e-pharmacy adoption is influenced by various factors. Researchers have explored consumers' intent to adopt e-pharmacies using frameworks like the Theory of Reasoned Action (TRA), Technology Acceptance Model (TAM), Unified Theory of Acceptance and Use of Technology (UTAUT), and UTAUT2.[10] (refer to Fig. 1)addition, health literacy was founded Study also found that respondents see some risk associated with use of the e-pharmacy that may impact its adoption in general. From business perspective, Social media is used as a marketing device for creating brand awareness, engaging customers, maintaining
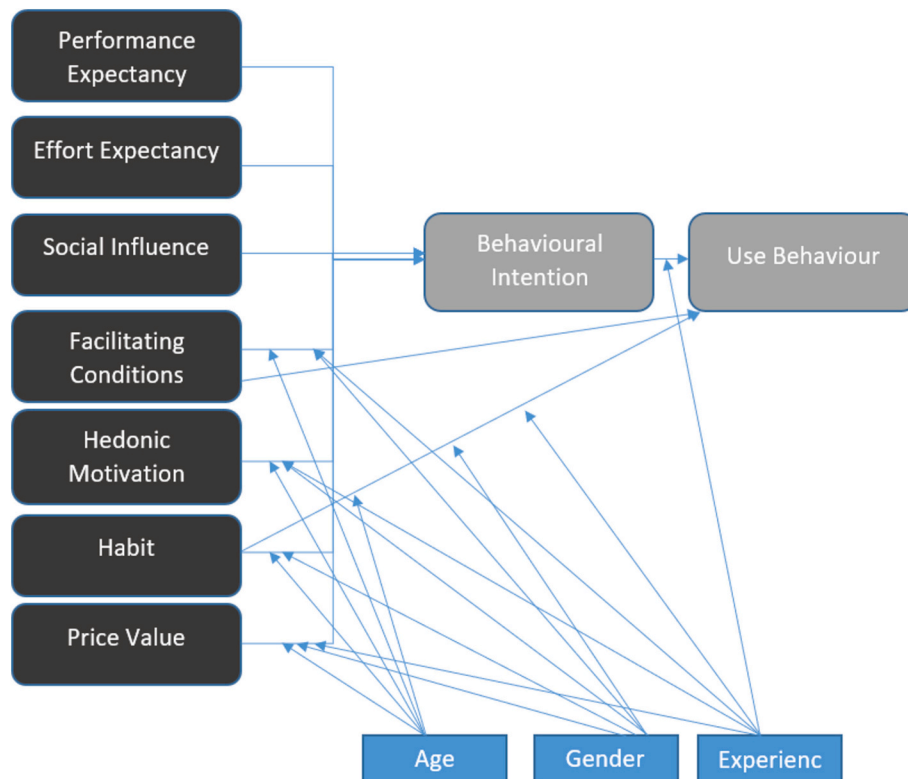

Fig. 1. UTAUT2 Model.

relationships, customer support and lure traffic to their stores. Businesses can save enough using free or low-cost social media sites as compared to expensive traditional media. Every day, many business owners take advantage of this inexpensive tool for their business promotion, but one cannot use all the social media platforms effectively, thus, need to choose the right platform and right content. This study established 5 M's (Motives, Media, Management, Merits and Metrics) which describe the dimensions of performing Social Media activities. The following are explained as follows: (See Fig. 2. Table 1.)

4.1. Motives

Performance expectancy is defined as the degree to which an individual believes that using the system will help him or her to attain gains in job performance (Venkatesh et al., 2003). Performance expectancy, in the context of e-pharmacy can be inferred as the user's perception of how beneficial and effective the e-pharmacy services are in improving various aspects of healthcare delivery, as highlighted by few respondents of our study below.

Ms. Neha Singh, highlighted:

"During COVID e-pharmacy was very helpful. My mom is a chronic diabetes patient and need medicines every day...I came across e-pharmacies and started using it to order my mother's prescription medicines. Convenience of getting the medicines at the door on-time

and their professional COVID behaviour like sanitizing the parcel, maintaining the distance while delivering etc. impressed me and helped my mother to take her essential medicines on time..."

Dr. Bijendra Gupta, articulated: "...I trust the drugs (getting from e-pharmacies) are authentic and beneficial to my health."

Our study revealed that users have high expectations when it comes to the performance of e-pharmacy systems. They believe that these platforms have significantly enhanced efficiency, convenience, and accessibility in accessing medicines and healthcare products. *E*-pharmacy services are perceived as a means to overcome the limitations of traditional pharmacies, such as long waiting times, limited stock availability, and geographical constraints.

Mr. Sanjay Singh, mentioned: "E-pharmacies has made my life easy. I get medicines at my door step, mostly on time, at my convenience without going to pharmacy shop and waiting there..."

Mr. Imran, mentioned: "I'm a working professional... getting something at home, on schedule especially something as essential as medicines without disturbing my routine is really helpful. Also, I can order from anywhere like my home, office or in office cab.."

Mr. Sourav Mukhopadhyay, said: "Convenience is the major factor I order from e-pharmacies... it saves time to physically visit and wait."

Dr. Priya, highlighted: "... medicines are usually delivered next day, if its available else it may take 1-2 day to deliver."
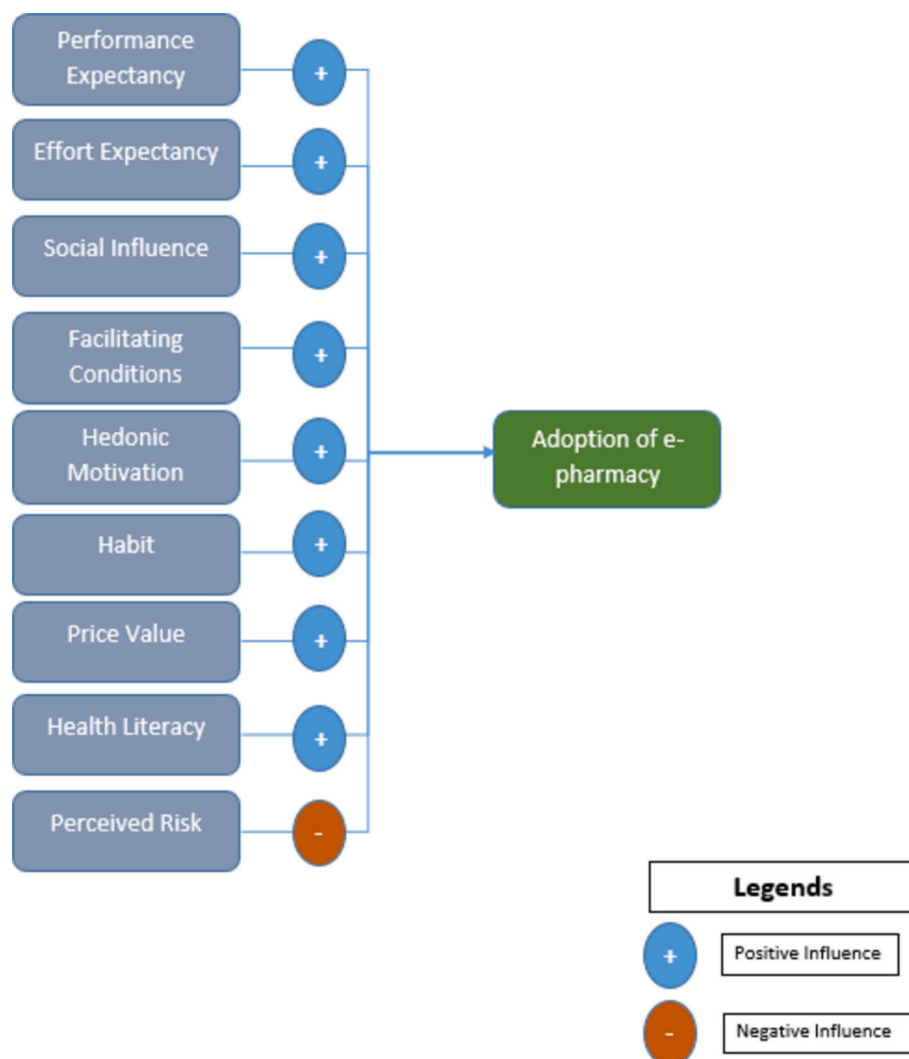
Mrs. Uma Pandey, explained:

Fig. 2. Proposed adoption model for e-pharmacy.

Table 1
Information about participants.

	Name	Age	Residence	Profession	Frequency of order	Platform used	e-pharmacy used	Usually Buys for	Monthly expenditure on medicines
R12	Mrs. Uma Pandey	61 Y	Delhi	Retired teacher	Once in a month	Web Portal	Pharmeasy	Self	Up to 5000
R11	Ms. Monica Pal	29 Y	NOIDA	Govt. teacher	Need basis	Mobile application	Tata 1 mg	Self as well as dependent	less than 1000
R10	Mr. Satish Chand Sachdev	68Y	Delhi	Retired	Twice in a month	Web Portal	Pharmeasy	Self	Up to 5000
R9	Ms. Neha Singh	26 Y	Gurgaon	Supply Chain Analyst	Once in a month	Mobile application	Tata 1 mg	Dependent	less than 1000
R8	Mr. D Talukdar	41 Y	Indirapuram	Healthcare Data Analyst	Once in a month	Mobile application	Tata 1 mg	Self as well as dependent	Up to 5000
R7	Dr. Suresh	42 Y	Dwarka Delhi	Physiotherapist - Govt services	Need basis	Web Portal	Tata 1 mg, Apollo 24X7	Self as well as dependent	Up to 2000
R6	Mr. Imran Khan	38 Y	Delhi	Lead medical coder- US healthcare	Need basis	Web Portal	Pharmeasy, Medlife	Self as well as dependent	Up to 2000
R5	Mr. Sourav Mukhopadhyay	35 Y	Dwarka -Delhi	Professional in a MNC	Twice in a month	Mobile application	Pharmeasy, Tata 1 mg	Dependent	Up to 2000
R4	Mr. Ankit	40 Y	Delhi	Company executive	Once in a month	Mobile application	Apollo 24X7	Dependent	less than 1000
R3	Dr. Bijendra Gupta	44 Y	New Delhi	Assitant Professor	Once in a month	Web Portal	Tata 1 mg	Self	Up to 2000
R2	Dr. Priya	30 Y	Delhi	Physiotherapist	Need basis	Web Portal	Apollo 24X7	Dependent	less than 1000
R1	Sanjay Singh	48 Y	Delhi	Pathology Lab Technician	once in a month	Mobile application	Tata 1 mg	Self as well as dependent	Up to 2000

"…I have personally observed that doctors generally prescribe brands that are available in pharmacies near to their clinics. I have faced situations where I had to travel far, to specific pharmacy to get the medicines because these medicines are generally available there only. E-pharmacies certainly helped me and now I can order any medicine from home and can get it at my home".

Our study also found that e-pharmacy users place great emphasis on the role of e-pharmacy services in reducing medication non-adherence.

Mr. Sanjay Singh, mentioned: "Every detail is in records of e-pharmacies, and they use to remind me before time that my medicines are getting over and need to refill…".

Ms. Monica Pal, said: "..good thing is they notify you to buy again if its long term medicine. It saves a lot of headaches."

Based on the arguments provided, the evidence indicates that, overall, performance expectancy has a positive influence on adoption of e-pharmacies.

4.2. Effort expectancy

Effort Expectancy, a notion originating from the Technology Acceptance Model (TAM) and additionally employed by UTAUT, evaluates the degree of simplicity or complexity that users attribute to a technology in relation to accomplishing their objectives or finishing particular assignments. Regarding the adoption of e-pharmacy, effort expectancy featured as a crucial factor in our study and we found that it can be deconstructed into the following components:

I. **Friendliness to users of the platform:** Responses from this study suggests customers are more inclined to utilize e-pharmacy services when presented with an intuitive and user-friendly platform. Users are inclined to adopt a website or application that offers a streamlined and uncomplicated ordering process and is straightforward to navigate.

Mr. Ankit, explained that: "I use Apollo 24X7 to order medicines and there are so many other platforms available like medlife, pharmeasy etc. but I feel easy & comfortable with Apollo 27X7's user friendly interface and my experience with Apollo 24X7 is good so far."

Dr. Bijendra Gupta, express that:

"..Initially I felt it was difficult (to order medicines from e-pharmacies) but gradually I become very comfortable. I think they have very streamlined and standard process. I'm very used to it now and it seems very easy to me."

II. **Accessibility and Convenience**: The level of effort required to access e-pharmacy services was evaluated by customers. Customers are more inclined to utilize the service if they can effortlessly navigate to the platform on their devices, locate the necessary medications, and proceed with placing orders. The presence of accessibility and expediency results in decreased exertion. As,

Dr. Priya said:

"Online buying saves time and we become dependent on it. I use other online platforms like Amazon, flipkart to order grocery, clothes etc. I find it (..to order medicines from e-pharmacies) as easy and convenient as ordering other stuff from online market place".

Mr. Imran, highlighted that:

"It was very easy for me (..to use e-pharmacies) as I'm aware about the technology platforms. Minimal effort is required, to place the order. I need to register and create my account first. Its very simple post that.. I can search my medicines and see if cheaper substitute or generic is available, select the medicine, upload my prescription, if required, and order.. Nowadays everyone has mobile and uses apps.. e-commerce businesses have made platforms very simple to use."

Dr. Suresh said:

"… I find two major advantage of using e-pharmacies. one, I can evaluate different brands of drugs and do a price comparison…"

III. **Procedure for Uploading Prescriptions and Ordering:** Respondents of the study suggests the ordering procedure for prescription medications ought to be uncomplicated. Perceived effort is diminished when users are able to effortlessly submit

their prescription, comprehend dosage instructions, and finalize the order without encountering any complications. As,

Mr. Satish Chand Sachdev, mentioned that:

".. one major challenge I face while ordering medicines is sometime their server hangs while uploading the prescription specially the image of a hand written prescription.. and sometime they are not able to validate the drug name I'm ordering, from hand written prescription mainly due to doctor's hand writing…."

Mr. D. Talukdar, explained that:

"My rating on effort and experience is great because I'm doing it from quite sometime.. user interface is very friendly and I don't need not to jump from one webpage to other… that's a reason I prefer doing it online than physical store unless it's an emergency".

Effort Expectancy can be substantially influenced by the level of responsive customer support and assistance that is provided. Users may have inquiries or need assistance, and the ease with which they can obtain support diminishes the perceived effort associated with utilizing the e-pharmacy service.[123]

Mr. Satish Chand Sachdev mentioned that: "… I get immediate call if they want to verify drug name or illness…".

Dr. Bijendra Gupta said: "..Their call center is very responsive for any query.."

Mr. Ankit said: "… I can Whatsapp Apollo 24X7 for any clarification…"

Mr. Sanjay Singh, mentioned: "if medicine is not available they notify me once it become available."

The incorporation of insurance and diverse payment systems into the integration process can streamline the financial dimensions associated with the acquisition of prescription medications. The ability for users to utilize their conduct transactions without difficulty reduces the perceived financial effort.

As, Mr. Sourav Mukhopadhyay said:

"..they accept credit card payments also therefore its easy to pay.."

Ms. Neha Singh mentioned:

"I can choose various payment methods like UPI, credit or debit card or cash on delivery is a bonus."

Effort Expectancy may also be influenced by the effectiveness and dependability of the delivery and fulfilment procedure. The likelihood of customers adopting e-pharmacy services may be positively influenced by the prompt and complication-free delivery of their medications.

Mrs. Uma Pandey highlighted:

"..I haven't got any delay in delivery so far.."

Dr. Suresh mentioned:

"drugs (ordered from e-pharmacy) are within their expiry date."

Analysis of the above arguments indicates that effort expectancy has a positive impact on adoption of e-pharmacies.

4.3. Social influence

UTAUT2 model defines the social influence as the "degree to which an individual perceives that important others believe he or she should use the new system" (Venkatesh et al., 2003). However, the views held by significant others are important to individual in specific environment and based on their concrete recommendation and behavioral action.[124] These significant or important others may be friends, family, relatives, employer, professional caregivers, employers, extension agents or other role models who can influence the adoption of new technology at various stages ([124,125,10]).

As Mr. Satish Chand Sachdev, mentioned (Smiling):

"My son, who lives abroad, suggested to order medicines from e-pharmacies like I order other stuff from e-commerce portals…."

Mr. D. Talukdar, said:

"I was aware about the e-pharmacies but not using them. My colleague mentioned to me, while talking in office cafeteria, how he is using e-pharmacies to gets good discounts on medicines and availability of medicines…and I thought of giving it a try…"

Mr. Ankit, expressed".

"My pharmacist advised to order online when they don't have the medicines available in their store…".

Ms. Monica Pal, explained:

"I have observed, all my friends & colleagues are using online shopping apps to order various things, right from grocery to clothes to medicines to lab test etc.. I feel if I go to a retail pharmacy to buy medicines my colleagues may assume that I'm not advance…"

Dr. Suresh, said:

"I was insisted by a friend based on his good experience…"

Social influence is a complex, multifaceted dimension and various social factors influence the consumer behavior while making a buying decision. Ahmed et al.[50] explored the impact of celebrity endorsement in social media advertisement on young consumers buying decisions.

As, Mr. Sourav Mukhopadhyay, highlighted:

"My first encounter, when I thought of trying the e-pharmacies is through the Pharmeasy TV commercial featuring Aamir Khan (Indian film star) …"

Positive user experiences shared on social media platforms like Facebook, Twitter, and Instagram serve as endorsements, building trust among potential customers.

As Ms. Neha Singh mentioned:

"When I started using e-pharmacies (to order prescription medicines), I looked at the reviews before selecting the e-pharmacy but I have built trust over time and use Tata 1MG only now".

Our study also found that the majority of the participants were willing to recommend the e-pharmacies to their close network for its various advantages.

Hence based on the above arguments it can be reasoned that social influence has a positive influence on adoption of e-pharmacies.

4.4. Hedonic motivation

Hedonic motivation is primarily influenced by the pursuit of pleasure, the experience of delight, and the attainment of emotional gratification. People are more likely to adopt innovative technology if its use is associated with pleasure, fun, entertainment, comfort, and enjoyment.[126]

As Ms. Neha Singh mentioned:

"…and Its fun using it for its simplicity and guidance is available wherever required but more than fun its satisfying…".

E-commerce systems in the pharmaceutical industry that provide visually appealing and user-friendly interfaces, incorporating interactive functionalities like personalized medication suggestions and virtual consultations with healthcare experts, cater to consumers' hedonistic inclinations by offering a pleasurable and immersive buying experience. These features contribute to the augmentation of the emotional appeal associated with the use of the service, hence increasing the likelihood of clients embracing and adopting e-pharmacy as their preferred approach for procuring prescription medications.[9,127] Our study also identified instances where respondents reported an immersive purchasing

experience from e-pharmacies.

As Dr. Bijendra Gupta explained:

"I remember once I ordered medicines online and I didn't have prescription handy with me.. so these e-pharmacies assisted me with a call with doctor to get the prescription, after verifying the reasons, and delivered the medicines".

Mr. Imran mentioned: "e-pharmacy contains all related information like book a doctors' appointment, lab tests, order nutritional products etc…"

Mr. Ankit said: "Apart from ordering medicines, I use my e-pharmacy app as source of information to know more about medicines, but that's it.."

However, a significant number of our respondents mentioned that they use e-pharmacies for the usefulness, convenience and to save time and don't derive any direct fun or pleasure from ordering medicines from e-pharmacies.

Mr. Sanjay Singh expressed:

"… I order medicines as I need it and its convenient for me to use e-pharmacies… If doctor stops the medicines. I'll also stop ordering the medicine. They can't push schemes to me if don't need medicines".

Dr. Priya said: "Process is simple but there is nothing funny or pleasurable about it.."

Mr. D. Talukdar mentioned: "Ordering anything as essential as medicine is not pleasurable activity unlike ordering something that you like such as shoes, camera etc.."

Mrs. Uma Pandey said: "My use (of e-pharmacies) is based on the fact that it saves me time and deliver at home. not based on fun or anything similar".

According to these arguments, the evidence indicates that hedonic motivation seems to have a weak impact on adoption of e-pharmacies.

4.5. Facilitating condition

Facilitating Conditions refers to the resources and support available to use a new system. Venkatesh et al., 2003 defined Facilitating Conditions as "the degree to which an individual believes that an organizational and technical infrastructure exists to support use of the system". Facilitating Conditions is considered as one of the environmental factors that affect users' perception of how easy or difficult it is to perform a task.[128]

A crucial determinant, of facilitating conditions, lies in the extensive accessibility of high-speed internet and the rise of smartphones and other devices. As respondents highlighted below:

Mr. Sanjay Singh said: "All I need is a prescription; if ordering prescription medicine else this is also not required for OTC drugs, internet, e-pharmacy app or web portal to order…I think everybody has access to these…"

Dr. Priya mentioned: "If you have an android operating phone; which everybody has now a day's, connected to internet and a doctor's prescription than its very easy to order. when I started, I had all resources available to me and I think other's will have it too..these are very basic today".

Mr. D. Talukdar expressed: "We need a smart phone and good internet connection and bit of confidence of ordering online…"

Mr. Imran said: "I order on mobile and connected to internet…Prescription is required for prescription medicines only… Now a day everybody use smartphone and online all day long for one or the other reason".

Now a day's numerous electronic pharmacy platforms provide the convenience of integrated telehealth services, enabling individuals to remotely consult healthcare specialists, take lab tests, obtain prescriptions, and quickly fulfill them through online means. The incorporation of this system has not only resulted in enhanced accessibility to medical advice and medical results but has also optimized the prescription procedure. Our study found that this integration of services is augmenting customer's adoption of e-pharmacies.

As Mr. Imran said: "I sometime don't visit the doctor for general ailments… I books an appointment through e-pharmacies gets virtual consultation and order medicines from there itself."

Dr. Bijendra Gupta highlighted: ". they have integrated the whole healthcare ecosystem at one place. consult the doctor, order lab test and get the medicines".

The adoption of e-pharmacy has been facilitated by the inclusion of payment choices and digital wallets as well.

As Mr. Sourav Mukhopadhyay mentioned: "It's an easy process. only internet availability should be there and online transactions facility should be available with the person. They offer many options like, UPI, cash on delivery etc. They accept credit card payments also therefore it's easy to pay."

Mr. Sanjay said: "I was surprised to see cash on delivery option for medicines…"

Facilitating conditions is a multifaceted determinant and shown to be impactful in adoption of a technology in UTAUT2 model. Based on the above arguments, it indicates that facilitating conditions has a positive influence on adoption of e-pharmacies as well.

4.6. Price value

Venkatesh et al. (2012) defined price value as "cognitive tradeoff between the perceived benefits of the applications and the monetary cost for using them". Out study found that respondents see price value advantage of using e-pharmacies to order prescription medicines online.

As Dr. Suresh highlighted: "…retail pharmacies provide maximum discount of 10% on MRP whereas when I order online I can look for unit package and see expiry of the medicines, available discounts and other drugs with similar salt as well as generic medicine…"

Mr. Sanjay mentioned: "Ordering from e-pharmacies is free of cost and medicines were cheaper through e-pharmacy…"

Within the framework of UTAUT2, the term "price value" pertains to the perceived value or advantage that users attribute to the expense of utilizing e-pharmacy services for the online purchase of prescription drugs, as respondents articulated:

Dr. Priya expressed: "…Its free of cost (ordering medicines from e-pharmacy) and discounts are also available and a big problem with change money (with retail buying) that also saves money.."

Mr. Imran said: "..I think they should charge some one-time registration fees (laughing) for benefits they offer like cheap medicines, options and free door to door delivery within defined area".

Mr. Sourav Mukhopadhyay highlighted: "No, no fees associated for ordering medicines but charge delivery fee for order less than certain amount. Drugs are usually cheaper. ..E-pharmacy model also improves the sustainability of natural resources indirectly….. also it paperless like bills are digital.."

Mr. Satish Chand Sachdev stated: "(Smiling)No money is charged to me atleast (for ordering from e-pharmacies)… but you have to pay delivery charge if order size is below certain amount.. which is ok and usual practice…"

Dr. Bijendra articulated: "..they don't charge anything except the price of the drug also if you have taken any additional service like doctor's virtual consultation they will charge for that as well.."

Ms. Neha highlighted: "..unlike retail pharmacy, I can cancel my order anytime and get refund."

Mrs. Uma Pandey said: "… good discount and offers are available and they run loyalty program also…"

The analysis of above arguments indicates that price value has a positive influence on adoption of e-pharmacies.

4.7. Habit

Venkatesh et al. (2012), in UTAUT2 model, operationalized habit in

two related yet distinct ways: first, habit is perceived as prior behavior; and second, habit is measured as the extent to which an individual believes the behavior to be automatic. Its evidence in this study as well, as highlighted by.

Mr. D. Talukdar: "E-pharmacy has become my first choice to order medicines unless it's an emergency or need it immediately…"

Mr. Satish Chand Sachdev: "I have become dependent on it for the convenience it provides…"

Therouanne et al., 2023, in their research, extended the definition of habit as prior use of similar technology for same purpose or use of similar technology for different purpose, also articulated in this study highlighted below".

Mrs. Uma Pandey said: "I have ordered ayurvedic and OTC medicines online in past.."

Mr. Sanjay Singh mentioned: "I also order other stuff like grocery etc. through online mode…"

Dr. Priya said: "Online buying saves time and we become dependent on it. I use other online platforms like Amazon, flipkart to order grocery, clothes etc…"

Mr. Imran said: "I buy, mostly all the things online unless its urgent… I use Amazon and flipkart to order electric items and RO as well. Grocery from grofers, big basket etc…"

Mr. Satish Chawla highlighted: "…Also, I book home appointment for lab tests online…"

Habit has been shown to influence the adoption of technology in UTAUT2 model and the examination of above arguments suggests user of e-pharmacies either using e-pharmacies extensively or accustomed to the other e-commerce platforms to buy stuff online. Hence, it can be reasoned that habit positively influence adoption of e-pharmacies.

4.8. Health literacy

The World Health Organization[129] defines health literacy as the personal knowledge and skills developed through daily activities, social interactions, and across generations. These competencies are influenced by organizational structures and available resources, allowing individuals to access, understand, evaluate, and use information and services to maintain and promote health and well-being for themselves and others.

Health literacy denotes the ability to understand and interpret health information in written, verbal, or digital forms and how this comprehension affects decisions regarding health behaviors. It includes reading and understanding numerical data, as well as the capability to grasp and utilize healthcare information in decision-making.[130,131] Its evidence in this study as well.

As Mr. Imran highlighted: "One should have idea about the medication they consume and salt it contains…"

Mr. Satish Chawla said: "If somebody knows and understand the difference in generics and branded drugs… they can substitute and utilize e-pharmacies to order cheap generic drugs".

Effective health literacy capabilities encompass the ability to collect, examine, and assess health-related information for its reliability and merit.[132] Respondents, e-pharmacy users, of this study also highlighted the same.

As Dr. Suresh mentioned: "…when I order online I can look for unit package and see expiry of the medicines…"

Mrs. Uma Pandey said: "…I check the manufacturing and expiry dates of the drugs after they are delivered…"

Mr. Sanjay highlighted: "…medicines were cheaper through e-pharmacy… to cross check, I went to the retail pharmacy as well with prescription and I was surprised to find the price difference."

Mr. Ankit articulated: "..I use my e-pharmacy app as source of information to know more about medicines.."

Ms. Monica Pal mentioned: "…I, typically, see reviews of e-pharmacies before choosing to use any one…"

Ms. Neha Singh highlighted: "…I looked at the reviews before

selecting the e-pharmacy…"

Though, it's worth highlighting that health literacy i.e. literacy applicable to everyday general life is a distinct concept from medical literacy i.e. literacy related to individuals as patients within health care settings.[133]

As Dr. Bijendra expressed: "…one should be aware about technological advancement happening around in healthcare to take advantage of it…"

It has been observed that health literate people are better poised to make health related decisions for themselves and their close ones. Analysis of arguments provided by respondents evidenced that people who are using e-pharmacies are health literate and health literacy positively influence the adoption of e-pharmacies.

4.9. Perceived risk

Perceived risk encompasses the combination of uncertainty and the gravity of potential outcomes, along with the anticipated losses linked to a purchase. This perception acts as a deterrent to purchasing behavior.[134] Featherman & Pavlou[134] explored various aspects of risks such as performance risk, financial risk, time risk, psychological risks, social risks, and privacy risks in their detailed research and their research has been foundation of many empirical research to study perceived risk in adoption of new technologies.[135]

Performance risk refers to the inability to achieve intended outcomes due to potential deviations from designed specifications. This risk encompasses the possibility that expected benefits may not be realized.[135,136] In this study, we found that respondents highlighted the performance risk associated with use of e-pharmacy as mentioned below:

Mr. D. Talukdar said: "…for medicines required immediately, I still need to visit physical store…"

Mrs. Uma Pandey mentioned: "…laws governing these pharmacies is still not very clear and not sure where to complain if something bad happens…"

Dr. Bijendra said: "… I don't know if prescription is validated by qualified pharmacist or not… or consultation provided by a MBBS doctor or Ayurvedic doctor (Indian traditional medical practitioner)."

The potential for monetary losses associated with purchasing and maintaining a product is known as financial risk. This encompasses both the initial investment required to acquire the item and any subsequent expenses related to its upkeep.[135,136] In this study user identified some financial risks associated with use of e-pharmacy as mentioned below:

Dr. Suresh expressed: "One disadvantage is; I have to purchase the complete package even if my requirement is five or six tablets…"

Ms. Neha Singh articulated: "if I cancel or return the order.. it takes some time to get the money back and I can't use the same money for other purpose."

Mr. Imran said: "Providing financial information on an online platform is always risky, but not very specific to e-pharmacy.."

The potential unauthorized disclosure of personal data without user awareness is referred to as privacy risk.[135,136] This research revealed that e-pharmacy customers considered the possible unauthorized release of their personal information as the primary concern most frequently cited.:

Dr. Suresh expressed: "Potential data breach may result in leaking of the patient's information."

Mr. Sourav Mukhopadhyay said: "…providing your card information could be risky."

Dr. Priya mentioned: "…I need to provide private information of my disease that I could hide if buying from retail pharmacy shop…"

Mr. Sanjay Singh said: "… they have all your personal details and disease history; and could use it for the marketing purpose…"

Psychological risk refers to the potential for a product's performance to adversely impact consumers' self-image and the possible decrease in self-esteem resulting from the disappointment of failing to meet

purchasing objectives.[135,136] Certain users of e-pharmacy in our study highlighted this risk, as below:

Mr. Satish Chand Sachdev expressed: "…we should be cautious, in order to get cheap medicines, we are not consuming fake medicines. Therefore, I always recommend to order from trusted brands of e-pharmacies…"

Mr. Ankit mentioned: "… it's all a black box in the back end. I don't know how they are buying, storing, handling and selling…"

In this study, we didn't find any evidence suggesting the impact of other two dimensions of perceived risk, as elaborated Featherman and Pavlou,[134] with the use of e-pharmacy i.e. time risk refers to the likelihood of wasting time due to product replacement or learning curve when a product fails to meet expectations and social risk refers to the potential loss of social standing within a group as a consequence of adopting a particular product or service.[135,136]

It's also worth noting that one respondent, in this study, didn't find any risk associated with the use of e-pharmacy.

Perceived risk is a multi-dimensional factor that affects the adoption of new technologies and evidence in this study suggests that it negatively influences the adoption of e-pharmacy.

5. Discussion

In recent years, there has been significant growth in the e-pharmacy sector, drawing considerable attention within the healthcare industry. The convenience offered by internet access has led to a surge in customers opting for online platforms when purchasing prescription medicines. This qualitative study aimed at gaining a deeper understanding of the factors that contribute to customer adoption of e-pharmacy to order prescription medicines. To accomplish this, we employed a qualitative research approach consisting of in-depth interviews with twelve customers who have utilized e-pharmacy services to order prescription medicines. Through these interviews, we uncovered insights into the decision-making process behind adopting an e-pharmacy for purchasing prescription medicines online. Constructs from UTAUT2 model, established by the researcher during thematic analysis based on IPA, were the key factor influencing this decision process and are explained briefly:

Performance expectancy: Study found performance expectancy to be a key factor influencing customer's decision to adopt e-pharmacy to order prescription medicines. Perceived convenience of getting the medicines at home, avoiding que and limiting geographical constraints were highlighted by the respondents. *E*-pharmacy user mentioned the improved accessibility and availability of the medicines, such as ordering at the convenience of home, office etc. and options to choose & buy. Additionally, users of e-pharmacy also identify the role of e-pharmacy in improving medication adherence.[137] These finding are in line with the literature where performance expectancy found to be a significant factor influencing adoption of the e-pharmacy.[6,50,71,75,8,9,10]

Effort expectancy: Study found that comprehension of consumer adoption of e-pharmacy services, which facilitate the online purchase of prescription medications, is significantly influenced by effort expectation. Respondents highlighted the factors like ease of ordering, customer support, and delivery, as well as ensuring that the e-pharmacy platform is accessible, convenient, and user-friendly. The degree to which customers adopt and embrace e-pharmacy services for the online purchase of prescription medications is heavily influenced by effort expectation. A favorable effort expectancy has the potential to enhance consumer confidence and acceptance of e-pharmacy services.[6,50,71,73,7,75,8,138]

Social influence: It has been unequivocally accepted that technology has power to shape the society but it is equally true that intricacies of social dynamics plays an important role in deciding the adoption trajectory of the technology.[139] Social influence is a multifaceted determinants and our study found that users of e-pharmacy has influence from friends, family, relatives, pharmacists, other role models or social media endorsements while deciding to adopt the e-pharmacies. These finding align with results of similar studies.[6,74,76,140,78,8]

Facilitating condition: Study found that the function of facilitating conditions has been crucial in promoting the development and adoption of e-pharmacy services for the online purchase of prescription drugs. Key factors, as articulated by the respondents of the study, were access to high-speed internet and the rise of smartphones and other devices, availability of integrated healthcare system on e-pharmacy, payment choices and digital wallets. Studies conducted by past researchers has established the role of facilitating conditions on the adoption of e-pharmacy.[6,71,72,53,8]

Hedonic motivation: The idea of hedonic motivation, which has strong foundations in the fields of psychology and consumer behavior, holds considerable influence over the extent to which customers accept and adopt e-pharmacy services for the online purchase of prescription drugs.[71,141,9] Our study found some mixed emotions, about hedonic motivation, from user of e-pharmacy as some respondents mentioned they don't find any direct fun or pleasure derived while adopting e-pharmacies. Respondents believes healthcare is essential need and no hedonic inclination is involved while using e-pharmacy to order prescription medicines. This finding is in line with literature.[142] However, some respondents mentioned about the e-pharmacy's immersive buying experience, visually appealing platform and as source of information. Literature also suggests the influence of hedonic motivation in healthcare information technology(HIT) ([95,143]).

Price value- The price value is a crucial issue that can greatly influence consumers' willingness to use e-pharmacy for buying prescription drugs on the internet. Respondents in our study highlighted the offers & discounts available on drugs while buying medicines on e-pharmacy leads to saving money. Current literature also suggest price value has significant influence on the adoption of e-pharmacies.[74,71,76,75]

Habit- Past studies have enumerated that habit is key component from UTAUT2 model affects the decision to adopt any technology,[144,105] however habit has been ignored in studies especially where new technology adoption has been discussed, due to lack of sufficient data points to study this construct.[145] Respondents in this study mentioned that either they are using e-pharmacy to order prescription medicines from quite some time or are used to other e-commerce or e-health platforms leading to easier adoption of e-pharmacy. In the past studies, in the context of the adoption of e-pharmacy and HIT, also Habit has been shown to influence the adoption of technology.[71,143,95]

E-pharmacy services present various risks, including substandard medication quality and incorrect drug delivery, which can negatively impact health. Consequently, a fundamental understanding of common health-related matters is crucial. This research identified health literacy as a key factor influencing e-pharmacy adoption and usage. Analysis of participant responses revealed that e-pharmacy users tend to be health literate. Research by Sabbir et al.[8] demonstrated that individuals with basic health literacy and drug awareness are more likely to adopt and use e-pharmacy services. Additionally, Rajamma & Pelton[78] found that the health value consumers perceive, drives their intention to purchase pharmaceutical products through online channels. In developing countries such as India, it is essential to prioritize health literacy as a primary area of research and intervention to enhance individual and population health.[146]

As the second objective of the study, this research tried find the perceived risks associated with the adoption of the e-pharmacy. Perceived risk or uncertainty impacts the buyer's confidence in their decision. Perceived risk, studied with other UTAUT constructs, has been found to be negatively influencing the adoption of technology.[147,148,149,150] The healthcare studies recognize that users' adoption decisions are influenced by their complex and varied perceptions of risk, highlighting the multidimensional nature of these factors in the medical field.[151] In the context of research on e-pharmacy, studies found that perceived risk negatively affects the adoption of e-pharmacy[7,52,10] and this is in line with the finding of this study where respondents highlighted the performance, financial, privacy and psychosocial risk associated with the use of e-pharmacy. This study

found that users desire a sense of privacy and security when purchasing prescription medications online.

Based on the above finding study propose a research model to understand the consumer behavior in adoption of e-pharmacy (Refer to Fig. 2).

6. Conclusion

In conclusion, the growth of e-pharmacy has been facilitated by regulatory changes and policy improvements, which have established a favorable climate for its expansion. Numerous nations' governments and healthcare authorities have implemented regulatory measures to facilitate the inclusion of online sales of prescription medications, thereby offering clients confidence in the legitimacy and security of such services. In summary, the presence of performance expectancy such as convenience of ordering medicines, accessibility and availability of drugs; effort expectance i.e. perceived ease of use in ordering prescription from e-pharmacy with user-friendly interfaces; social influence; facilitating conditions, including but not limited to internet accessibility, integration of healthcare services, availability of diverse payment methods; price value advantage with offers and discounts on buying medicines from e-pharmacy; and habit of using other e-commerce platforms to buy online has significantly contributed to the widespread acceptance and adoption of e-pharmacy services for the online purchase of prescription medications. The aforementioned conditions have not only facilitated the procedure, but have also fostered a sense of assurance among clients, so bolstering the sustained expansion of e-pharmacy as a feasible and expedient healthcare alternative.

7. Limitation and future research

Despite its numerous strengths, this study has several limitations that should be acknowledged. Firstly, the research is primarily exploratory in nature, examining the experiences of e-pharmacy users and their motivations for adopting this service. Consequently, the findings cannot be generalized to broader populations. To address this limitation, future studies should consider employing quantitative methods or a mixed-methods approach. Secondly, although interviews were conducted in Hindi or a combination of Hindi and English, and the researcher made efforts to verify transcripts with participants, there remains a possibility of slight misinterpretation or overinterpretation during the process. Thirdly, the study was limited to the National Capital Region of India due to convenience sampling. Future research could expand to other parts of India and globally. Additionally, subsequent studies could investigate multifaceted determinants such as social influence, hedonic motivation, and perceived risk to gain a more comprehensive understanding of these constructs and their detailed impact on e-pharmacy service adoption.

CRediT authorship contribution statement

Kushal Pal Singh: Writing – original draft. **Pawan Kumar:** Writing – original draft.

Declaration of competing interest

I have no Declaration of interest.

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