# Egyptians' dependency on Medication Pamphlets as a Source of Health Information and its Impact on their Health awareness and Behavior: A Field Study

**Dr. Adel Refaat A. Mustafa***

**Abstract:**
Medication Pamphlets "MPs" serve as crucial communication tools that provide essential information about drugs. This study aims to investigate the role of MPs as a health communication tool among Egyptians, utilizing the Health Belief Model (HBM) and the Theory of Planned Behavior (TPB). According to the survey method a random sample consisting of 657 individuals aged 18 years or older was examined.
The results indicate that most of the participants read, understand, trust and believe in importance of reading MPs at least "sometimes". Approximately half of the sample read it all the time, because it informs them about the contraindications or precautions for using medications. The study also observed that the same drawbacks were consistently identified in MPs across studies conducted worldwide, including the design's lack of readability, small font size, complex information, and lengthy content.

**Keywords:** Medication Pamphlets, Health Behavior, Media Dependency Theory, Health Belief Model, Planned Behavior Theory, Health Awareness, Health Communication

* Associate prof., Media Faculty, Menofia University, Egypt

# اعتماد المصريين على النشرات الدوائية كمصدر للمعلومات الصحية وعلاقته بوعيهم وسلوكهم الصحي: دراسة ميدانية

**ملخص الدراسة:**
تعمل النشرات الدوائية "MPs" كأدوات اتصال مهمة توفر معلومات أساسية حول الأدوية، لذا تستهدف هذه الدراسة بحث أدوار تلك النشرات كأداة للتواصل الصحي بين منتجي ومقدمي الخدمات الطبية من جهة والمواطنين من جهة أخرى، وذلك باستخدام نظرية الاعتماد على وسائل الإعلام ونموذج المعتقدات الصحية (HBM) ونظرية السلوك المخطط (TPB). ووفقاً لطريقة المسح، تم فحص عينة عشوائية مكونة من 657 فرداً بعمر 18 سنة فأكثر.
وتشير النتائج إلى أن معظم المشاركين يعتمدون بدرجات متفاوتة على النشرات الدوائية كمصدر للمعلومات الصحية، كما أنهم يفهمون ويثقون ويؤمنون بأهمية قراءة تلك النشرات على الأقل "أحيانًا"، وأن ما يقرب من نصف العينة يقرأون تلك النشرات طوال الوقت، لأنها تعرفهم بموانع أو احتياطات استخدام الأدوية. ولاحظت الدراسة أيضًا أن النشرات الدوائية تعاني من ذات العيوب التي توصلت إليها الدراسات السابقة في دول أخرى حول العالم، وتتضمن افتقار تصميماتها إلى سهولة القراءة، وصغر حجم الخط، والمعلومات المعقدة، والمحتوى الطويل.

**الكلمات المفتاحية:** النشرات الدوائية، السلوك الصحي، الوعي الصحي، نظرية الاعتماد على وسائل الإعلام، نموذج المعتقدات الصحية، نظرية السلوك المخطط، الاتصال الصحي

## Introduction:

With the rise of the Industrial Revolution and the subsequent increase in the production and complexity of consumer goods, effective communication between producers and consumers has become essential. Consequently, the use of catalogs as alternative communication tools has emerged, serving an educational role in conveying information about product mechanisms and usage methods to customers. In the realm of health, medicines hold significant importance as they directly impact human well-being. However, improper usage of certain medications can have fatal consequences within minutes. To address this, medication pamphlets have emerged as a crucial communication medium, delivering essential information and instructions on proper usage, doses, and contraindications.

In Egyptian society, a concerning trend of self-treatment without consulting healthcare professionals has become widespread. This trend highlights the growing significance and potential dangers associated with medication pamphlets. Therefore, the present study aims to assess the extent to which Egyptians depend on these pamphlets as a source of health information and examine their relationship with their health behavior and attitudes.

Medication Pamphlets (MPs) or drug leaflets, are important documents that provide detailed information about a medication's use, dosage, side effects, and other important information (Khamas et al. 2019). Despite their importance, there is a leak of interest among researchers in communication field to find out how often the patients read or understand these MPs particularly in Egypt, where access to healthcare and medication may be limited and the health culture rate is relatively low (Amin et al. 2010).

Numerous studies suggest that patients often misunderstand prescription drug labels and MPs, which can lead to medication errors and low adherence rates. Difficulties in comprehending and interpreting these labels and instructions could be a contributing factor to these issues. (Al-aqeel 2012)

In Egypt, access to healthcare and medication in rural areas can be limited, which poses challenges for patients in obtaining the necessary information to make informed decisions about their health (Galal and

Al-Gamal 2014; Abdel-Rahman et al. 2021). Of particular concern is that some patients rely heavily on MPs for information. This is due in part to the prevalence of self-medication in developing countries, as well as the common practice of purchasing prescription-only medications without a prescription from community pharmacies. Consequently, patients are primarily responsible for ensuring the safety of their medications, including over-the-counter (OTC) medications, antibiotics, nonsteroidal anti-inflammatories, and oral contraceptives (Al-aqeel 2012). So, it is important that patients and healthcare providers have access to accurate and up-to-date information about the medications they are taking.

In the United States, labelling for the healthcare practitioner is called "Prescribing Information" (PI), and labelling for patients and/or caregivers includes "Medication Guides", "Patient Medication Pamphlets", and "Instructions for Use" (Nathan and Vider 2015). In Europe, the technical document is called the "summary of product characteristics" (SmPC), and the document for end-users is called the "patient information leaflet" (PIL) or "package leaflet" (European Medicines Agency, n.d.) This study interested in the PMPs or PIL, because it seeks to investigate how much end-users in Egypt use this inserts and its correlation to their health behavior and the author will use the shortcut (MPs).

The aim of this study is to investigate the use of MPs among Egyptian people, and to understand the factors that influence whether or not they are read.

This study seeks to provide important insights into the use of MPs among Egyptian people, and to identify the factors that influence whether or not these documents are read. This information can be used to improve the communication of medication information in Egypt and to ensure that patients and healthcare providers have the information they need to make informed decisions about their health. Additionally, this study will provide a valuable contribution to the field of communication studies by applying HBM and TPB to the study of MPs.

## Literature Review:

### The MPs

The MPs is a written document that accompanies both over-the-counter and prescribed medications and its purpose is to provide patients or their caregivers with all the necessary information about the drug (Sawalha et al. 2008; Ramdas et al. 2013). MPs is widely recognized as one of the most valuable resources for conveying essential and scientifically accurate information to healthcare professionals provided by the medicine's manufacturer based on regulatory guidelines (Al-aqeel 2012; Joseph et al. 2017; Jain et al. 2018).

It is an important source of medication information to both healthcare providers and patients especially in developing countries where access to contemporary medical information is limited (Qatmosh et al. 2017; Gavgani et al. 2018).

In Saudi Arabia, all medications must be supplied with their original package and leaflet (Al-aqeel, 2012), while in Europe, every medication must be provided with understandable and readable MPs written according to European Union law (Dickinson et al. 2001). Australia and the USA also use computer-generated leaflets that must be accurate, understandable, and well-designed (Koo et al. 2003).

Despite efforts made by regulatory authorities and manufacturers to improve the readability and comprehensibility of MPs, they continue to receive criticism due to the extensive volume of incomprehensible text and small font size (Miquel et al. 2000). An analysis of 68 German MPs showed that important information such as interactions and daily maximum dose was missing, and 22% of the inserts contained more than 2000 words, which is equivalent to 3-4 DIN-A4 pages with a minimum font size of 8 pt as required by the Readability-Guideline of 1998 (Fuchs et al. 2006).

Patients find them difficult to read and understand, and concerns have been raised about missing important information such as interactions and daily maximum dose. Scholars suggest many factors affect patients and care providers to read MPs the first one of them is the format and design of the document. A survey of 1004 Italian patients found that half of the participants reported difficulty finding information or complained about incomprehensible MPs (Bernardini et al. 2000).

Another important factor is the level of education and literacy of the patient. Studies have shown that patients with lower levels of education and literacy are less likely to read and understand MPs. Iranian researchers have found that Eighty-four percent of patients read the MPs. The level of education was the only significant factor related to reading the PI (P = 0.02). Reading the side effects was the main reason for reading the PI (64%). MPs were considered useful by 83% while 25% kept MPs as a source of drug information. Experience of fear to take the medication after reading the PI was reported by 47% (Ahmadi et al. 2018).

In Egypt, medicinal products can only be sold to the public through pharmacies, where a pharmacist dispenses the medicine in its original pack with a manufacturer-generated PI wrapped around the blister pack. Although Egyptian law requires that MPs should not mislead the public, there is considerable variation in how information is displayed. Most MPs provide information on the composition of the formula, mode of action, pharmacokinetics, adult and pediatric doses for various diseases that the drug can treat, side effects, drug interactions, precautions, contraindications, a description of the original package, and optimal storage conditions (Amin et al. 2010).

However, little attention has been given to how patients use the PI to supplement information from healthcare providers and what information they seek. This is particularly relevant in Egypt, where literacy levels may be lower than in other countries.

While there have been many studies conducted on MPs from the perspective of pharmaceutical perception, there have been relatively few studies conducted on this topic from the perspective of the communication field. To add the scope of media and communication this article studies HMB and TPB.

**Theoretical Framework:**

To study if Egyptian people read the Medication Pamphlets (MPs) and why they do or do not, as well as the characteristics of readers, and how it affects their health attitudes and behavior, the author has depended on Media Dependency Theory, the Health Belief Model (HBM) and the Theory of Planned Behavior (TPB) as a theoretical framework related to health communication.

## Media Dependency Theory

Since media its initial proposal in 1976 by Sandra Ball-Rokeach and Melvin DeFleur, the Media Dependency Theory posits that there exist reciprocal relationships between media, political systems, and social systems. It suggests that individuals' dependence on media as an information source has cognitive, affective, and behavioral effects (Liu, 2021).

Scholars define media dependency as the connection between individuals' goals and the extent to which these goals rely on the resources of the media system, which possess the capacity to create, gather, process, and disseminate information (Wilfred, Akpor, & Chukwu, 2021).When individuals are unable to rely solely on interpersonal sources for obtaining essential information and mass media becomes available as a source, they become dependent on mass media as an essential source (Ball-Rokeach, 1985).

This theory has found numerous applications in media and communication research. It has expanded beyond its original focus on television, as explained by Ball-Rokeach and DeFleur, to include studies on social media (Davis, 2021; Liu, 2021; Habes et al., 2023), newspapers (Ahmed, 2022), and extends beyond political communication (e.g (Mehlman-Brightwell, 2021) to areas such as environmental communication (Hassanein, 2015) and health communication (Abdel Hafez, 2016).

This study applies the principles of media dependency theory on medical pamphlets as an official source of information regarding the use of medicines as products. These pamphlets are intended to provide users with accurate, approved, and officially documented information. Therefore, it is expected that relying on them will yield positive results in terms of citizens' health awareness. Consequently, this study aims to assess the extent to which Egyptian citizens depend on these pamphlets as an information source and examine their impact on Egyptian attitudes and behaviors concerning health.

## The Health Belief Model (HBM)

The Health Belief Model (HBM) was first formulated in the 1950s by social psychologists working for the US Public Health Service, with the aim of explaining why individuals did not engage in primary prevention or early detection activities, such as medical screening (Swenson 2007). The Health Belief Model (HBM) is a model for health behavior change that is used to predict how individuals will respond and change their behavior to prevent diseases. (Chin and Mansori 2019).

There are four fundamental components related to HBM: 1) perceived susceptibility, 2) perceived benefits, 3) self-efficacy and the author added 4) Trust in Health care provider (Chin and Mansori 2019).

Perceived susceptibility refers to individuals' perceptions of the possibility of acquiring a disease or condition (Ateş et al. 2021: 575; Champion and Skinner 2008: 47) Perceived benefits refer to the potential advantages of engaging in a health behavior, including the behavior's perceived effectiveness in preventing the undesired outcome (Gerend and Shepherd 2012: 172; Champion and Skinner 2008: 47).

The concept of self-efficacy, which is derived from social cognitive theory, was later incorporated into the Health Belief Model. Self-efficacy in the context of HBM, reflects an individual's confidence in their ability to engage in a health behavior (Weinstein 1993).

The latest studies suggest that our health behavior is affected by our trust in healthcare system and providers. (Meyer et al. 2012) concluded that physicians need to be aware that patients trust affects their health decisions, and lack of trust by the patient in the physicians or the healthcare system has been associated with poorer health outcomes (Graham et al. 2015).

In the context of package insert reading, the author used this model to examine how individuals' perceptions of the relevance and usefulness of the information in the package insert, as well as their perceived ability to understand and use the information, influence their likelihood of reading the package insert. Additionally, this model could help in examining the role of factors such as health literacy, trust in healthcare providers, and cultural beliefs in determining package insert reading behaviors.

## Theory of Planned Behavior (TPB)

The Theory of Planned Behavior (TPB) is an expansion of the widely applied Theory of Reasoned Action (Fishbein and Ajzen 2010). The TPB proposes that behavior is determined by a combination of an individual's intentions to engage in that behavior and their sense of control over the behavior. Behavioral intention is determined by attitudes, subjective norms, and perceived behavioral control (Lihua 2021). Behavior is a complex process driven by factors such as economic, psychological, and other decision-making processes. Behavioral intention refers to the likelihood of the individual performing a specific behavior.

Attitude reflects the individual's expectations and evaluations of the consequences of the behavior. Subjective norms refer to the expectations and attitudes of significant others or groups towards the individual. (Swenson 2007).

Perceived behavioral control refers to the individual's sense of control and the difficulty of performing the behavior. The basic framework of the Theory of Planned Behavior is primarily used to study the impact of attitude, subjective norms, and perceived behavioral control on behavioral intention, based on the assumption that the individual makes conscious decisions and plans (Lee 2013).

In the context of package insert reading, this theory is used to examine how individuals' attitudes towards package insert reading, the perceived social norms around package insert reading, and their perceived ability to read and understand the package insert, influence their likelihood of reading the package insert.

## Methodology:

### The survey:

Survey is useful method in collecting data from a large number of participants in a relatively short period of time. In this study, a survey is used to collect data on participants' reading MPs behaviors, their perceptions of its usefulness, their perceptions of the ability to understand and use the information it contains, and their attitudes and beliefs towards package insert reading. In the main time the survey is used to gather information about the participants' demographic

characteristics, such as age, education level, and income, to identify factors that may influence package insert reading behaviors.

**Sampling:**

A random sample was drawn from the Egyptian population, consisting of 657 individuals aged 18 years or older. The sample included 45.2% male and 54.8% female participants, with the majority (63.2%) falling within the 18-24 age range, followed by 24.2% aged 25-35, and 12.6% over the age of 35. All participants had received some level of education, with 10.2% holding a high school certificate, 13.2% holding a post-graduate certificate, and 76.6% holding a BA certificate. In terms of monthly income, the majority of participants (52.4%) fell into class B, while 17.8% belonged to class C, 22.7% belonged to class A, and 7.2% did not disclose their monthly income.

***Variables:***

- Rate of dependency on MPs as a source for health information.
- Perceived susceptibility to negative health outcomes from not using MPs.
- Perceived benefits of depending on MPs as a source for health information.
- Self-efficacy for reading and understanding MPs.
- Trust in healthcare providers.
- Attitudes towards MPs.
- Perceived behavioral control from reading MPs.

Demographic variables:

- Age
- Gender
- Education level
- Income level

***Research Questions:***

1. What is the rate of dependency on MPs among Egyptians as a source for health information?
2. What factors influence the dependency on MPs among Egyptians as a source for health information?
3. To what extent do Egyptians understand the information provided in MPs?
4. To what extent do Egyptians trust the information provided in MPs?
5. How does MPs affect the Egyptians health behavior?

Therefore, it is thought that the current study will make important contributions to the literature since there are a limited number of studies and the research aimed to study with individuals who have different cultural and educational levels (demographics). Based on the arguments, then we propose following hypotheses:

***Hypotheses:***

H1: There are significant differences between participants groups according to sex (males and females) in their interests to MPs as a source for health information.

H2: There are significant differences between participants groups according to age (early youth/ late youth/ elder people) in their interests to MPs as a source for health information.

H3: There are significant differences between participants groups according to education level in their interests to MPs as a source for health information.

H4: There are significant differences between participants groups according to monthly income level in their interests to MPs as a source for health information.

H5: There is a significant correlation between the level of trust in healthcare providers and dependency on MPs as a source for health information.

H6: There is a significant correlation between the rate of dependency on Medication Pamphlets and: (Medicine use without prescription, Understanding the Information of MPs, the believe in the importance of reading MPs, Discussing the MPs with the physician, Perceived benefits of depending on MPs as a source for health information, using medication correctly, buying medication decision, and having medication decision)

***Data collecting:***

The data collection process involved administering a questionnaire to the participants, which included a series of questions related to the aforementioned variables. The questionnaire was designed to be easy to understand and complete, and was administered in a manner that respected the participants' privacy and confidentiality. By using a random sample and a well-designed questionnaire, the researchers were able to collect reliable and valid data that can be used to inform future

research and practice in the area of medication package insert reading. Cronbach's Alpha is used to explore the reliability of the data. The result was .812, and this indicates a relatively high level of internal consistency or reliability of the data. Generally, a Cronbach's Alpha value above 0.7 is considered acceptable, while a value above 0.8 is considered good and above 0.9 is considered excellent. Therefore, a Cronbach's Alpha value of .812 suggests that the items in the questionnaire used in the study are reliable and consistent in measuring the construct of interest. This result provides confidence in the quality of the data and indicates that the items are measuring the same construct consistently.

***Data analysis:***

Statistical package for social sciences (Spss v26) is used to make all the analysis procedures for this study.

**Results:**

Table 1: How often do participants read, understand, trust and believe in the importance of the MPs?

| | reading the MPs | | The believe in importance of reading the MPs | | Self-efficacy for understanding MPs | | trust the information provided in the MPs | |
|---|---|---|---|---|---|---|---|---|
| | K | % | K | % | K | % | K | % |
| Never | 12 | 1.83 | 17 | 2.6 | 10 | 1.6 | 11 | 1.7 |
| Rarely | 65 | 9.89 | 62 | 9.6 | 42 | 6.5 | 8 | 1.2 |
| Sometimes | 203 | 30.9 | 136 | 21 | 269 | 42 | 71 | 11 |
| Often | 204 | 31.1 | 283 | 44 | 239 | 37 | 261 | 40 |
| Always | 173 | 26.3 | 147 | 23 | 85 | 13 | 294 | 46 |
| Total | 657 | 100 | 645 | 100 | 645 | 100 | 645 | 100 |

Table 1 presents data on four variables related to the usage of MPs, as follows:

***How often do Egyptians depend on MPs as a source for health information?***

According to the table, the frequency of Egyptians depending on MPs as a source for health information varied among the participants. The results indicate that a minority of individuals reported never (1.8%) read MPs or reading them rarely (9.89%). However, a considerable proportion of participants stated that they sometimes (30.9%) read MPs. Interestingly, the majority of respondents, comprising 31.1%, reported often reading MPs, while a similar percentage of 26.3% claimed to always read them.

So, while a small percentage of the participants never or rarely read MPs, the majority of participants demonstrated a tendency to read them and consider that it's a valuable source for health information to some extent with a significant portion of participants reporting that they often or always read them.

***How often do Egyptians believe in importance of reading the MPs?***

The results indicate that a significant number of Egyptians acknowledge the importance of reading MPs, with the majority recognizing their significance at least to some extent.

For the analysis, the author excluded participants who never read MPs, resulting in a revised total sample size of 645 (previously 657). Among the participants, a small percentage (2.6%) reported never believing in the importance of reading MPs, while 9.6% stated that they rarely believed in their significance. A considerable proportion of participants (21%) reported sometimes believing in the importance of MPs. The majority of respondents (44%) expressed that they often believe in the importance of reading MPs, whereas a smaller group (23%) consistently believed in their importance. Thus, the results suggest a certain level of awareness and recognition regarding the importance of package insert reading among the participants.

***Self-efficacy for reading and understanding MPs:***

These results suggest that the majority of participants possess a certain level of self-efficacy in understanding MPs. Based on the provided table, the findings indicate that only a small percentage (1.6%) of participants reported never feeling capable of understanding MPs, and 6.5% stated that they rarely felt capable of understanding. A majority of the participants (42%) reported feeling capable of understanding MPs sometimes. A significant proportion (37%) expressed that they often felt capable, while a smaller group (13%) reported feeling capable always.

***How often do Egyptians trust the information provided in the MPs?***

The results, as depicted in the table, indicate that the majority of participants demonstrate trust in the information contained within MPs, with a significant proportion reporting that they often or always trust it. A small percentage (1.7%) of participants expressed never trusting the information, while an even smaller percentage (1.2%) reported rarely

trusting it. The majority of participants indicated trust in the information provided in MPs at least sometimes (11%) , while a substantial portion (40%) reported often trusting it. Furthermore, a larger number of participants (46%) consistently expressed trust in the information provided in MPs.

These findings highlight the overall confidence placed in the reliability and accuracy of package insert information among the Egyptians.

Table 2: When do participants read MPs?

| | K | % |
|---|---|---|
| All the time | 312 | 48.4 |
| When the medication is for a serious issue | 200 | 31 |
| When the medication is for children | 41 | 6.36 |
| When the medication is for an old person | 54 | 8.37 |
| Other | 38 | 5.89 |
| Total | 645 | 100 |

The results indicate that a significant proportion of participants actively engage in reading MPs for a variety of reasons, with the highest percentage reporting consistent reading habits.

Approximately (48.4%) of the participants stated that they read MPs every time they take medication. The second reason was when the medication was for a serious issue, with (31%) of participants indicating that they read MPs in such cases. A smaller percentage of participants reported reading MPs specifically when the medication was intended for children (6.36%) or for an elderly person (8.37%). A minority of participants (5.89%) reported other instances in which they read MPs. These instances included situations where they had spare time to read, instances where they lacked complete trust in the pharmacist or the physician, and cases of self-medication.

Table 3: Why do participants read MPs?

| | K | % |
|---|---|---|
| Because it informs me about the contraindications or precautions for using medications. | 289 | 44.8 |
| Because it explains the safe method of use. | 217 | 33.6 |
| Because it contains important medical information about the active substance. | 88 | 13.6 |
| Curiosity. | 51 | 8 |
| Total | 645 | 100 |

The table 3 shows the reasons why participants in the study read MPs. Based on the table the most common reason is "Because it informs me about the contraindications or precautions for using medications", with (44.8%) reporting this as their reason for reading MPs. The second most common reason was "Because it explains the safe method of use", with (33.6%) reporting this as their reason. A smaller number of participants reported reading MPs because it contains important medical information about the active substance (13.6%) or out of curiosity (8%).

Table 4: The participants' actions in case of a conflict between the doctor's prescription and the Medication Pamphlets instructions

| | K | % |
|---|---|---|
| I consult the doctor | 379 | 58.76 |
| I consult the pharmacist | 131 | 20.31 |
| I adhere to the doctor's recommendation without referring back to him/her | 104 | 16.12 |
| I adhere to the instructions listed in the medication package insert | 26 | 4.031 |
| Other | 5 | 0.775 |
| Total | 645 | 100 |

This table 4 presents the responses of participants regarding their actions in case of a conflict between the doctor's prescription and the Medication Pamphlets instructions. The table shows that the most common response was "I consult the doctor", with (58.7%) reporting that they consult their doctor in case of a conflict between the doctor's prescription and the Medication Pamphlets instructions. The second most common response was "I consult the pharmacist", with (20.3%) reporting that they consult their pharmacist in case of a conflict. A smaller number of participants (16.1%) reported that they adhere to the doctor's recommendation without referring back to him/her, while only 4% of participants reported that they adhere to the instructions listed in the medication package insert. A very small number of participants (0.8%) reported "Other" actions in case of a conflict like change the medication or ask another doctor.

So, most of the sample seek guidance from their doctor or pharmacist when there is a conflict between the doctor's prescription and the Medication Pamphlets instructions. While a small number of participants trust the MPs more than the doctor. This underscores the

importance of healthcare providers in guiding patients towards the appropriate use of medications.

Table 5: Participants' perception of the most important drawbacks of Medication Pamphlets

| | K | % |
|---|---|---|
| The design of Medication Pamphlets doesn't facilitate ease of reading." | 294 | 45.6 |
| It takes a long time to read. | 158 | 24.5 |
| I don't understand the terms used in them. | 133 | 20.6 |
| Other | 60 | 9.3 |
| Total | 645 | 100 |

The table 5 presents participants' perceptions regarding the most significant drawbacks of MPs. The predominant response, noted by (45.6%) of participants, was that the design of these inserts does not facilitate easy reading. This may be attributed to factors such as dense content with small font sizes, which collectively make the inserts challenging to read and comprehend.

The second most common response, indicated by (24.5%) of participants, was that reading MPs consumes a considerable amount of time. This can be linked to the extensive nature of the information provided. A smaller percentage of participants (20.6%) expressed difficulty in understanding the terminology used in MPs. This highlights the necessity for these resources to be composed in plain language and presented in a clear and user-friendly format. lastly, a small percentage of participants (9.3%) mentioned other drawbacks included concerns about outdated or overwhelming information contained in MPs. Participants expressed also that some information could be threatening to patients, as the abundance of warnings and extensive reading requirements might discourage them from taking the medication altogether.

Table 6: Participants' attitudes towards Medication Pamphlets as a source for health information

| | Never | | Rarely | | Sometimes | | Often | | Always | |
|---|---|---|---|---|---|---|---|---|---|---|
| | K | % | K | % | K | % | K | % | K | % |
| Helps to avoid harm or side effects of the medication | 15 | 2.33 | 39 | 6.05 | 174 | 26.98 | 259 | 40.2 | 158 | 24.5 |
| Prevents negative health outcomes | 23 | 3.57 | 86 | 13.3 | 239 | 37.05 | 193 | 29.9 | 104 | 16.12 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Helps to use the medication correctly | 17 | 2.64 | 30 | 4.65 | 156 | 24.19 | 298 | 46.2 | 144 | 22.33 |
| Not reading Medication Pamphlets causes negative health outcomes | 47 | 7.29 | 181 | 28.1 | 235 | 36.43 | 100 | 15.5 | 82 | 12.71 |

The table shows the attitudes of participants towards reading Medication Pamphlets. When asked them if it helps to avoid harm or side effects of the medication, the majority of participants (40.2%) responded with Often, followed by (26.9%) who chose "sometimes" and (24.5%) who selected always. These results indicates positive attitudes towards MPs with a significant proportion of participants recognizing the importance of reading them to avoid potential harm or side effects.

Regarding the statement "Prevents negative health outcomes", the most common response was "Sometimes" with (37%) followed by (29.9%) selecting often and (16.12%) choosing always. These findings further support a positive attitude towards reading MPs, as participants acknowledged their role in preventing negative health outcomes.

When considering its help to use the medication correctly, the most common response was "Often" with (46.2%) while (24.19%) selected sometimes and (22.3%) chose always. These results suggest that participants believed reading Medication Pamphlets can help them use medications correctly.

For the statement "Not reading Medication Pamphlets causes negative health outcomes", the most common response was "Sometimes" with (36.4%) followed by (28.1%) selecting "Rarely". Responses for often were (15.5%) and always (12.7%). So, the majority of participants have positive attitudes and most of them recognized the potential negative consequences of not reading Medication Pamphlets.

Results indicate that participants generally recognize the importance of reading Medication Pamphlets and believe that doing so can help them avoid harm or side effects of the medication, prevent negative health outcomes, and use medications correctly. However, a significant number of participants reported that they rarely or never read

Medication Pamphlets, highlighting the need for healthcare providers to emphasize the importance of reading these resources to their patients.

Table 7: Participants' Health behaviors related to reading Medication Pamphlets.

| | Never | | Rarely | | Sometimes | | Often | | Always | |
|---|---|---|---|---|---|---|---|---|---|---|
| | K | % | K | % | K | % | K | % | K | % |
| I use medications without a doctor's prescription. | 77 | 11.9 | 192 | 29.8 | 260 | 40.31 | 75 | 11.6 | 41 | 6.36 |
| I discuss the information contained in Medication Pamphlets with my doctor. | 101 | 15.7 | 204 | 31.6 | 223 | 34.57 | 91 | 14.1 | 26 | 4.03 |
| I follow the instructions provided in Medication Pamphlets. | 1 | 0.16 | 41 | 6.36 | 161 | 24.96 | 275 | 42.6 | 167 | 25.89 |
| Medication Pamphlets play a role in deciding to refrain from or purchase a medication. | 53 | 8.22 | 143 | 22.2 | 269 | 41.71 | 123 | 19.1 | 57 | 8.84 |
| Medication Pamphlets play a role in deciding to refrain from or take a medication. | 39 | 6.05 | 118 | 18.3 | 255 | 39.53 | 141 | 21.9 | 92 | 14.26 |

The table 7 reveals that a significant portion of participants in the study use medications without a doctor's prescription. The majority of participants reported engaging in this behavior sometimes (40.31%), while a smaller percentage stated they do it often (11.6%). Participants who reported always using medications without a doctor's prescription constituted a smaller proportion (6.36%). These findings highlight the importance of accessible and comprehensible MPs to support individuals who may resort to self-administration of medications. Clear and understandable information can help promote responsible

medication use and mitigate potential risks associated with self-medication without proper medical guidance.

(29.8%) of participants stated that they rarely use medications without a doctor's prescription, indicating a more cautious approach towards self-medication. Additionally, (11.9%) of participants reported never engaging in this practice, suggesting a greater adherence to seeking professional medical advice before using medications.

When asked about discussing the information in MPs with participants doctors, they provided varying responses. The most prevalent response was "Sometimes," chosen by (34.5%) of participants. The second most common response was "Rarely," selected by (31.6%) of participants. A notable percentage (15.7%) reported never discussing the information in MPs with their doctors. On the other hand, (14.1%) of participants stated that they often engage in such discussions, while a smaller proportion (4%) reported always discussing package insert information with their doctors. Thus, almost half of the participants never or rarely discuss what they read in the MPs with their doctors.

When they asked about following the instructions provided in MPs, participants provided varying responses. The most prevalent response was "Often," chosen by (42.6%) of participants. The second most common response was "Always," selected by (25.89%) of participants. These findings indicate that a majority of participants consistently adhere to the instructions outlined in MPs.

A notable percentage (24.96%) reported following the instructions sometimes, indicating occasional compliance. A smaller proportion (6.3%) stated that they rarely follow the instructions, suggesting infrequent adherence. It is worth noting that only one participant reported never following the instructions provided in MPs.

These findings highlight the overall positive trend of participants following the instructions in MPs, with a significant majority demonstrating regular or consistent compliance. Also, it highlights the importance of the language, design, information quality in the MPs.

The data from the table indicates that a significant proportion of participants in the study base their decision to either abstain from or purchase a medication on its MPs. The majority of participants (41.7%) reported engaging in this behavior sometimes, while a smaller

percentage (22.2%) stated that they rarely do so. Participants who reported often relying on MPs constituted a smaller proportion (19.1%). Likewise, there were similar percentages for participants who never (8.22%) or always (8.8%) considered MPs. These findings state that more than half of the participants depend on MPs when making decisions about abstaining from or purchasing a medication at least sometimes.

When asked about the role of MPs in their decision-making process to take the medication or not, 39.5% of participants stated that MPs sometimes play this role, while 21.9% reported that they often do. Additionally, 18.3% mentioned that they rarely make a decision depending on it, 14.2% claimed they always do, and 6% stated that they never consider MPs in this context.

***Hypotheses tests:***

*H1: There are significant differences between participants groups according to sex (males and females) in their interests to Medication Pamphlets.*

Table 8: Differences between males and females in their interests to Medication Pamphlets

| Variables | Chi Square/ F | P-value | Contingency Coefficient |
|---|---|---|---|
| How often do participants read MPs? | .003 | .958 | - |
| How often do participants understand the MPs? | .189 | .664 | - |
| How often do participants believe in the importance of the MPs? | 10.612 | .001 | - |
| How often do participants trust the MPs? | 3.200 | .074 | - |
| When do participants read MPs? | 14.304 | .006 | 0.147 |
| MPs helps to avoid harm or side effects of the medication | .233 | .629 | - |
| MPs prevents negative health outcomes | .565 | .452 | - |
| MPs helps to use the medication correctly | .045 | .832 | - |
| Not reading Medication Pamphlets causes negative health outcomes | .458 | .499 | - |
| I use medications without a doctor's prescription. | 25.680 | .000 | - |
| I discuss the information contained in Medication Pamphlets with my doctor | .103 | .749 | - |
| I follow the instructions provided in Medication Pamphlets | 6.860 | .009 | - |
| MPs play a role in deciding to purchase a medication | .050 | .823 | - |
| MPs play a role in deciding to take a medication | 1.554 | .213 | - |

This table examines the significant differences between males and females regarding their interests in MPs. The results demonstrate notable differences between males and females in their interests in MPs across four variables.

Firstly, in terms of participants' belief in the importance of MPs, a significant difference was found ($F = 10.612$, $p = .001$). This indicates that females were more likely to recognize the significance of MPs compared to males. Several factors may contribute to this difference, including variances in health-seeking behaviors and cultural attitudes towards medication use. Females may exhibit proactive healthcare seeking behaviors and possess cultural attitudes that emphasize the importance of MPs for medication safety and effectiveness.

Secondly, regarding the time when participants read MPs, a significant difference was observed ($\chi^2 = 14.304$, $p = .006$), suggesting that females were more likely to read MPs at specific times. The weak relationship indicated by the contingency coefficient (0.147) implies that this difference is not strongly influenced by gender.

Thirdly, concerning using medications without a doctor's prescription, a significant difference was found ($F = 25.680$, $p = .000$), indicating that males were more likely to use medications without a doctor's prescription. This inclination towards self-medication may stem from various factors, such as the perception that seeking medical help is a sign of weakness or a desire to avoid the time and expense associated with doctor visits. Additionally, males may have a higher threshold for seeking medical attention, leading them to self-treat their symptoms using over-the-counter medications.

Lastly, regarding following the instructions provided in MPs, a significant difference was observed ($F = 6.860$, $p = .009$), suggesting that females were more likely to adhere to the instructions provided in MPs.

In contrast, no significant differences were found between males and females in various other variables. These variables include reading, understanding, and trust in MPs, as well as participants' attitudes towards MPs' ability to avoid harm or side effects, prevent negative health outcomes, use medications correctly, and influence decisions to take or purchase medication. The non-significant p-values indicate that there were no significant gender-based differences in these aspects.

*H2: There are significant differences between participants groups according to age (early youth/ late youth/ elder people) in their interests to Medication Pamphlets.*

Table 9: Differences between participants groups according to age in their interests to Medication Pamphlets

| Variables | Chi Square/ F | P-value | Contingency Coefficient |
|---|---|---|---|
| How often do participants read MPs? | 9.231 | .000 | - |
| How often do participants understand the MPs? | 1.441 | .237 | - |
| How often do participants believe in the importance of the MPs? | 2.215 | .110 | - |
| How often do participants trust the MPs? | 1.862 | .156 | - |
| When do participants read MPs? | 62.345 | .000 | .297 |
| MPs helps to avoid harm or side effects of the medication | 12.605 | .000 | - |
| MPs prevents negative health outcomes | 9.887 | .000 | - |
| MPs helps to use the medication correctly | 8.107 | .000 | - |
| Not reading Medication Pamphlets causes negative health outcomes | 1.813 | .164 | - |
| I use medications without a doctor's prescription. | 6.358 | .002 | - |
| I discuss the information contained in Medication Pamphlets with my doctor | 7.840 | .000 | - |
| I follow the instructions provided in Medication Pamphlets | 3.178 | .042 | - |
| MPs play a role in deciding to purchase a medication | .146 | .864 | - |
| MPs play a role in deciding to take a medication | 9.133 | .000 | - |

This table investigates the significant differences between participants across different age groups regarding their interests in MPs. The results reveal notable differences between participants groups in their interests in MPs across 9 variables. A significant difference was found in participants' reading of MPs ($F = 9.231$, $p = .000$), indicating significant differences between age groups in their interest in reading MPs.

Regarding the timing of when participants read MPs, a significant difference was observed ($\chi^2 = 62.345$, $p = .000$), indicating significant differences between age groups. The contingency coefficient was .297, indicating a weak relationship. This implies that older age groups were more likely to read MPs at a specific time.

For the variables "the role of MPs in avoiding harm or side effects", "MPs prevent negative health outcomes", "MPs help to use the

medication correctly", "I use medications without a doctor's prescription.", "I discuss the information contained in Medication Pamphlets with my doctor", and "I follow the instructions provided in Medication Pamphlets", the F test resulted in significant differences between participant age groups, with p-values of .000, .000, .000, .002, .000, and .042, respectively. The interpretation is that there were significant differences between age groups in these variables.

Concerning the role MPs play in deciding to take a medication, the F test yielded a significant result with a p-value of .000, indicating significant differences between age groups in the role MPs play in this decision-making process.

In contrast, no significant differences were found between age groups in various other variables. These variables include understanding MPs, belief in the importance of MPs, trust in MPs, the importance of reading Medication Pamphlets to prevent negative health outcomes, and the role MPs play in deciding to purchase/take a medication. The non-significant p-values indicate that there were no significant age-based differences in these aspects.

*H3: There are significant differences between participants groups according to education level in their interests to Medication Pamphlets.*

Table 10: Differences between participants groups according to education level in their interests to Medication Pamphlets

| Variables | Chi Square / F | P-value | Contingency Coefficient |
|---|---|---|---|
| How often do participants read MPs? | 9.980 | .000 | - |
| How often do participants understand the MPs? | 1.404 | .246 | - |
| How often do participants believe in the importance of the MPs? | 6.587 | .001 | - |
| How often do participants trust the MPs? | .154 | .857 | - |
| When do participants read MPs? | 46.883 | .000 | .260 |
| MPs helps to avoid harm or side effects of the medication | 13.114 | .000 | - |
| MPs prevents negative health outcomes | 4.277 | .014 | - |
| MPs helps to use the medication correctly | 12.440 | .000 | - |
| Not reading Medication Pamphlets causes negative health outcomes | .132 | .877 | - |
| I use medications without a doctor's prescription. | 13.988 | .000 | - |
| I discuss the information contained in Medication Pamphlets with my doctor | 22.564 | .000 | - |
| I follow the instructions provided in Medication Pamphlets | .805 | .447 | - |
| MPs play a role in deciding to purchase a medication | 6.849 | .001 | - |
| MPs play a role in deciding to take a medication | 7.109 | .001 | - |

Table 10 shows the significance of differences between participant groups according to education level in their interests in Medication

Pamphlets. The results reveal notable differences between participants groups in their interests in MPs across 10 variables. A significant difference was found in participants' reading of MPs ($F = 9.98$, $p = .000$) indicating significant differences between participants according to their education level in their interest in reading MPs.

For the variable "How often do participants believe in the importance of the MPs?", the result was significant, with a p-value of .001, indicating significant differences between participants groups in their belief in the importance of MPs.

Regarding the timing of when participants read MPs, a significant difference was observed ($\chi^2 = 46.88$, $p = .000$), indicating significant differences between participants groups. The contingency coefficient was .260, indicating a weak relationship. This means that participants with higher education levels were more likely to read MPs at a specific time.

For the variables "MPs helps to avoid harm or side effects of the medication", "MPs prevents negative health outcomes", "MPs helps to use the medication correctly", "I use medications without a doctor's prescription.", "I discuss the information contained in Medication Pamphlets with my doctor", "MPs play a role in deciding to purchase a medication", and "MPs play a role in deciding to take a medication", the F test resulted in significant differences between participants groups according to education level, with p-values of .000, .014, .000, .000, .000, .001, and .001, respectively. The interpretation is that there were significant differences between groups in these variables.

In contrast, no significant differences were found between different education levels groups in various other variables including: following the instructions provided in Medication Pamphlets", understanding the MPs, trust in the MPs, Not reading Medication Pamphlets causes negative health outcomes. The non-significant p-values indicate that there were no significant education-based differences in these aspects.

*H4: There are significant differences between participants groups according to monthly income level in their interests to Medication Pamphlets.*

Table 11: Differences between participants groups according to monthly income level in their interests to Medication Pamphlets

| Variables | Chi Square/ F | P-value | Contingency Coefficient |
|---|---|---|---|
| How often do participants read MPs? | 1.667 | .173 | - |
| How often do participants understand the MPs? | .109 | .955 | - |
| How often do participants believe in the importance of the MPs? | 3.754 | .011 | - |
| How often do participants trust the MPs? | 3.883 | .009 | - |
| When do participants read MPs? | 41.379 | .000 | .246 |
| MPs helps to avoid harm or side effects of the medication | 3.324 | .019 | - |
| MPs prevents negative health outcomes | 1.055 | .367 | - |
| MPs helps to use the medication correctly | 2.259 | .080 | - |
| Not reading Medication Pamphlets causes negative health outcomes | 1.146 | .330 | - |
| I use medications without a doctor's prescription. | 9.673 | .000 | - |
| I discuss the information contained in Medication Pamphlets with my doctor | 5.452 | .001 | - |
| I follow the instructions provided in Medication Pamphlets | 7.012 | .000 | - |
| MPs play a role in deciding to purchase a medication | 4.631 | .003 | - |
| MPs play a role in deciding to take a medication | 6.083 | .000 | - |

Table 11 shows the significance of differences between participants groups according to monthly income level in their interests in Medication Pamphlets.

Regarding participants frequently read MPs and understand it, the result was not significant with a p-value of .173, indicating no significant differences between participants groups according to monthly income level in their interest in reading MPs.

A significant difference was found in participants' believes in the importance of the MPs (f=3.7, p= 0.011), indicating significant differences between participants groups according to their income level. A significant difference was found in participants' trust in the MPs (f=3.88, p= 0.009), indicating significant differences between participants groups according to their income level.

Regarding the timing of when participants read MPs, a significant difference was observed ($\chi^2 = 41.37$, $p = .000$), indicating a significant difference between participants groups. The contingency coefficient was .246, indicating a weak relationship. This means that participants with higher income levels were more likely to read MPs at a specific time.

For the variables "MPs helps to avoid harm or side effects of the medication", "I use medications without a doctor's prescription.", "I discuss the information contained in Medication Pamphlets with my doctor", " role of MPs in deciding to purchase a medication", " role of MPs in deciding to take a medication", and "following the instructions provided in Medication Pamphlets" the F test resulted in significant differences between participants groups, with p-values of .019, .000, .001, .003, .000, and .000 respectively. This means that there were significant differences between income groups in these variables.

For the variables "MPs prevents negative health outcomes", "MPs helps to use the medication correctly", "Not reading Medication Pamphlets causes negative health outcomes", the F test result was not significant, with a p-value of .367, .080, and .330 respectively. This means that there were not significant differences between income groups in these variables.

*H5: There is a significant correlation between the level of trust in healthcare providers and reading Medication Pamphlets.*

Table 12: The correlations between reading Medication Pamphlets and the trust in healthcare providers

| Reading rate | Always read | | Often read | | Sometimes read | | Rarely read | | Never read | | Total | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Trust level | K | % | K | % | K | % | K | % | K | % | K | % |
| High trust | 12 | 1.8 | 29 | 4.4 | 52 | 8 | 4 | 0.6 | 7 | 1.1 | 104 | 16 |
| Medium trust | 98 | 15 | 140 | 21 | 104 | 16 | 44 | 6.7 | 5 | 0.8 | 391 | 60 |
| Low trust | 49 | 7.5 | 33 | 5.1 | 36 | 5.5 | 13 | 2 | 0 | 0 | 131 | 20 |
| No trust | 10 | 1.5 | 2 | 0.3 | 11 | 1.7 | 3 | 0.5 | 0 | 0 | 26 | 4 |
| Total | 169 | 26 | 204 | 31 | 203 | 31 | 64 | 9.8 | 12 | 1.8 | 652 | 100 |
| Chi-Square= 61.66, P value= .000, Contingency Coefficient= .315 | | | | | | | | | | | | |

The table 12 shows that there is a significant association between trust level in healthcare providers and reading rate of MPs. This means that participants' level of trust is correlated to how often they read them. The chi-square value was 61.66 with 12 degrees of freedom (p-value= .000).

The contingency coefficient of .315 indicates a moderate association between trust level and reading rate. This suggests that there is a meaningful relationship between the two variables, but it's not a perfect relationship.

Looking at the data in the table, we can see that participants with higher levels of trust in healthcare providers are more likely to read MPs more frequently. For example, 4.4% of participants with high trust reported often reading the MPs, compared to only 0.3% of participants with no trust. Similarly, 21% of participants with medium trust reported often reading the MPs, compared to only 5.1% of participants with low trust. These results suggest that trust in healthcare providers plays a significant role in how frequently people read Medication Pamphlets which means that the hypothesis is supported by the results.

*H6: There is a significant correlation between dependency on MPs as a source for health information and: (Medicine use without prescription, Understanding the Information of MPs, the believe in the importance of reading MPs, Discussing the MPs with the physician, Perceived benefits of depending on MPs as a source for health information, using medication correctly, buying medication decision, and having medication decision).*

Table 13: The correlations between depending on MPs as a source for health information and the trust in healthcare providers

| dependent variables Independent variable | | V2 | V3 | V4 | V5 | V6 | V7 | V8 | V9 | V10 | V11 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| depending on MPs as a source for information | Rho | .028 | .135** | .366** | .453** | .178** | .349** | .252** | .268** | .391** | .319** |
| | Sig. | .470 | .001 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |

V2 Medicine use without prescription
V3 Trust in MPs' information
V4 Understanding the Information of MPs
V5 The believe in the importance of reading MPs
V6 Discussing the MPs with the physician
V7 Perceived benefits of depending on MPs
V8 Reading MPs helps in using medication correctly
V9 Reading MPs helps in avoiding side effects
V10 Behavioral effects of reading MPs

V11 Reading MPs affects having medication decision

From the table 13 we can see that there is a positive correlation between (V1: MPs Reading) and all other variables except (V2: Medicine use without prescription) the correlation between them was 0.028, P value= 0.470.

This means that MPs reading does not affect the extent of using prescriptions without consulting a doctor, indicating that study participants read these MPs regardless of whether the prescriptions were referred to a medical professional or not.

While it appears from the table that there is a positive correlation between reading the MPs and all other variables which are:

- Trust in MPs' information (r= .135, P= .001).
- Understanding the Information of MPs (r= .366, P= .000).
- The believe in the importance of reading MPs (r= .453, P= .000).
- Discussing the MPs with the physician (r= .178, P= .000).
- Perceived benefits of depending on MPs as a source for health information (r= .349, P= .000).
- Reading MPs helps in using medication correctly (r= .252, P= .000).
- Reading MPs helps in avoiding side effects (r= .268, P= .000).
- Behavioral effects of reading MPs (r= .391, P= .000).
- Reading MPs affects having medication decision (r= .319, P= .000).

Thus, the results prove that the sixth hypothesis is supported, with the exception of the variable related to the use of medicines without prescription.

## Discussion

In this study, a questionnaire was administered to 657 Egyptian participants to investigate their behavior and attitudes towards MPs. Twelve participants reported that they never read MPs were excluded from the sample, resulting in a final sample size of 645 participants.

The main findings of this study indicate that most of the participants read, understand, trust and believe in importance of reading MPs at least "sometimes". Approximately half of the sample read it all the time Because it informs them about the contraindications or precautions for using medications. These findings align with previous studies like Amin, Chewning, & M.H.Wahdan, (2010) which highlighted that Egyptian participants focus on side effects, contraindications and drug interactions as well as the study by Segun & Victor (2021) in Nigeria, which emphasized the importance of MPs for dose-related information.

This study indicated that when there is a conflict between the doctor's prescription and the instructions provided in the MPs, the majority of participants prefer consult the doctor or the pharmacist. This result corresponds with Segun & Victor, (2021) findings that trust in health care providers is more than trust in MPs.

The study also observed that the same drawbacks were consistently identified in MPs across studies conducted worldwide, including the design's lack of readability, small font size, complex information, and lengthy content. Also, the terminology used in it needs experts. Gavgani, Mirzadeh-Qasabeh, Hanaee, & Hamishehkar, (2018) have Calculating reading ease score of patient MPs in Iran and concluded that due to the high cost of medications in Iran people usually use medicines arbitrarily without doctor prescription or rely on outdated ones, here the importance of MPs is very clear as a main source of information but unfortunately, MPs needs to improve its reading difficulties and design. Similar issues were identified from Ethiopia as Hailu, Gobezie, Tuem, Gebremichael, & Mohammed, (2022) who found that imported medicines have lack of translation to local language, and the local medications have information gaps. The same concerns from Iran as Eteraf-Oskouei, Abdollahpour, Najafi, & Gavgani, (2019) revealed the unclear nature of MPs for non-expert users and the inadequacy of information. Similarly, in India, S, Revankar, H, Manjunath, & Hegde, (2017) emphasized the need for improved package insert design, larger font sizes, and more comprehensive information. Fuchs & Hippius (2007) conducted a study in Europe and discovered that despite efforts by regulatory authorities and manufacturers to enhance readability and comprehensibility, MPs were still subject to criticism due to the extensive amount of difficult-to-understand text and the small font sizes, such as 8 pt, which participants found burdensome.

participants reported problems finding information or complained about incomprehensible MPs such as interactions and the daily maximum dose and a lot of MPs include more than 2000 words. Therefore, the results of this study are consistent with the results of other studies in Egypt and various parts of the world.

The first hypothesis of this study, which stated that there are significant differences in the interest in MPs between male and female participants, was partially supported. The findings indicated that females showed a higher recognition of the importance of MPs compared to males. Females were more likely to read MPs at specific times, while males were more inclined to use medications without a doctor's prescription and females were more likely to adhere to the instructions provided in MPs. This aligns with Amin, Chewning, & M.H.Wahdan, (2010) study which found that gender affects reading MPs as females are more likely to read more than men in Egypt. Same result were oserved from America, as S. Roy, Caillouette, Faden, & T. Roy, (2005) performed with 206 women of varying ages, ethnicity, and education and results show that 97% of the participants read and understand MPs.

The second hypothesis, which examines the differences between participants groups according to age (early youth/ late youth/ elder people) in their interests to Medication Pamphlets was also partially supported. Amin, Chewning, & M.H.Wahdan, (2010) indicated that Egyptian youth depend on internet as the first source to get information about medicines more than elder people so they don't depend on printed MPs a lot, in contrast to elder people.

The third hypothesis which investigated the differences between participants groups according to education level in their interests to Medication Pamphlets was partially supported. Al-aqeel, (2012) indicate that eucation level is an important factor affecting reading and understanding MPs in Saudi Arabia. Same result from Egypt ( Amin, Chewning, & M.H.Wahdan, 2010) and Nigeria (Segun & Victor, 2021) where individuals with higher education levels exhibited greater eagerness to read and understand MPs.

The fourth hypothesis which said There are significant differences between participants groups according to monthly income level in their interests to Medication Pamphlets was partially supported.

The results supported the fifth hypothesis which stated that there is a significant correlation between the level of trust in healthcare providers and reading Medication Pamphlets. It suggests that most of participants demonstrated a certain level of trust in the information provided in MPs. This trust was attributed to factors such as confidence in the regulatory

system, cultural acceptance of medicine and trust in scientific approaches, and positive experiences with medications prescribed based on package insert information. On the other hand, participants with low levels of trust or distrust in MPs cited reasons such as limited health literacy, cultural beliefs and values, distrust of the healthcare system, and conflicting information received from physicians about certain medications or treatments.

The sixth hypothesis is partially supported, with the exception of unsignificant correlation between MPs reading and the use of medicines without prescription, there is a positive correlation between reading the MPs and all other variables: Trust in MPs' information, Understanding the Information of MPs, The believe in the importance of reading MPs, Discussing the MPs with the physician, Perceived benefits of depending on MPs as a source for health information, Reading MPs helps in using medication correctly, Reading MPs helps in avoiding side effects, Behavioral effects of reading MPs and Reading MPs affects having medication decision.

## References

Abdel-Hafez, N.M (2016) New and traditional media dependency in spreading health information: A field study on a sample of Egyptians, *Egyptian Journal of Public Opinion Research*, 15 (2), 405-494, doi:10.21608/joa.2016.80870

Abdel-Rahman, S., Shoaeb, F., Fattah, M. N., & Abonazel, M. R. (2021). Predictors of catastrophic out-of-pocket health expenditure in rural Egypt: application of the heteroscedastic probit model. *Journal of The Egyptian Public Health Association, 96*(23). doi:10.1186/s42506-021-00086-x

Ahmadi, P., Badri, S. S., & Zargarzadeh, A. H. (2018). An investigation on patient attitudes toward package inserts and their accessibility in Iran. *J Res Med Sci., 23*, 67-18. doi:10.4103/jrms.JRMS

Ahmed, M.F. (2022) The public's dependence on the Egyptian newspapers as a source of information about the crisis of the Panamanian ship M Ever Geffen, *Egyptian Journal of Public Opinion Research*, 21(3), 351-389, doi:10.21608/JOA.2022.268766

Al-aqeel, S. A. (2012). Evaluation of medication package inserts in Saudi Arabia. *Drug, Healthcare and Patient Safety*, 33-38. doi:10.2147/DHPS.S29402

Amin, M. E., Chewning, B. A., & M.H.Wahdan, A. (2010). Sources of drug information for patients with chronic conditions in Alexandria, Egypt. *The International Journal of Pharmacy Practice, 19*, 13-20.

Ateş, H., Özdenk, G. D., & Çalışkan, C. (2021). Determinants of science teachers' healthy eating behaviors: combining health belief model and theory of planned behavior. *Journal of Baltic Science Education, 20*(4), 573-589. doi:https://doi.org/10.33225/jbse/21.20.573

Ball-Rokeach, S.J. (1985). The Origins of Individual Media-System Dependency: A Sociological Framework. *Communication Research*, 12(4), 485–510. https://doi.org/10.1177/009365085012004003

Bernardini, C., Ambrogi, V., Perioli, L. C., Tiralti, M. C., & Fardella, G. (2000). Comprehensibility of the package leaflets of all medicinal products for human use: a questionnaire survey about the use of symbols and pictograms. *Pharmacol Res, 41*(6), 679-88. doi:10.1006/phrs.1999.0639

Champion, V. L., & Skinner, C. S. (2008). The health belief model. Health behavior and health education. *Theory, Research, and Practice, 4*, 45-65.

Chin, J. H., & Mansori, S. (2019). Theory of Planned Behaviour and Health Belief Model: females' intention on breast cancer screening. *Cogent Psychology, 6(1)*. doi.org/10.1080/23311908.2019.1647927

Davis, C. (2021). *Covid-19 death news: A media dependency analysis.* Master of Science, Iowa state University. Retrieved from https://www.proquest.com/docview/2625618688/fulltextPDF/66F16BAB9A644ADCPQ/3?accountid=178282

Dickinson, D., Raynor, D., & Duman, M. (2001). Patient information leaflets for medicines: using consumer testing to determine the most effective design. *Patient Educ Couns, 43*(2), 147–59.

Eteraf-Oskouei, T., Abdollahpour, S., Najafi, M., & Gavgani, V. Z. (2019). Do drug package inserts meet the rules and regulations of Iran's Food and Drug Administration in terms of informing patients? *Health Promotion Perspectives, 9*(3), 214- 222. doi:doi: 10.15171/hpp.2019.30

European Medicines Agency, s. (n.d.). *Product-information requirements*. Retrieved July 15, 2023, from https://www.ema.europa.eu/en/human-regulatory/marketing-authorisation/product-information-requirements

Fishbein, M., & Ajzen, I. (2010). *Predicting and Changing Behavior: The Reasoned Action Approach.* New York: Psychology Press.

Fuchs, J., & Hippius, M. (2007). Inappropriate dosage instructions in package inserts. *Patient Education and Counseling, 67*, 157-168.

Fuchs, J., Hippius, M., & Schaefer, M. (2006). Analysis of German package inserts. *Int J Clin Pharmacol Ther, 44*(1), 8-13. doi:10.5414/cpp44008

Galal, S. B., & Al-Gamal, N. (2014). Health problems and the health care provider choices: A comparative study of urban and rural households in Egypt. *Journal of Epidemiology and Global Health, 4*(2), 141-149. doi:https://doi.org/10.1016/j.jegh.2013.12.002

Gavgani, V. Z., Mirzadeh-Qasabeh, S., Hanaee, J., & Hamishehkar, H. (2018). Calculating reading ease score of patient package inserts in Iran . *Drug, Healthcare and Patient Safety, 10*, 9-19.

Gerend, M. A., & Shepherd, J. E. (2012). Predicting human papillomavirus vaccine uptake in young adult women:Comparing the health belief model and theory of planned behavior. *Annals of Behavioral Medicine, 44*(2), 171-180. doi:https://dx.doi.org/10.1007%2Fs12160-012-9366-5

Graham, J. L., Shahani, L., Grimes, R. M., & Giordano, T. P. (2015). The Influence of Trust in Physicians and Trust in the Healthcare System on Linkage, Retention, and Adherence to HIV Care. *AIDS patient care and STDs, 29*(12), 661-667.

Habes, M., Elareshi, M., Mansori, A., Pasha, S., Salloum, S. A., & Al-Rahmi, W. M. (2023). Factors Indicating Media Dependency and Online Misinformation Sharing in Jordan. *Sustainability, 15*(2), 14-74. doi:10.3390/su15021474

Hailu, H. G., Gobezie, M. Y., Tuem, K. B., Gebremichael, H. T., & Mohammed, S. A. (2022). Evaluation of Medication Package Inserts in Ethiopia. *Journal of Environmental and Public Health*. doi:https://doi.org/10.1155/2022/8299218.

Hassanin, H.M. (2015) The role of the media in developing environmental concern among the Egyptian public: a study within the framework of the theory of dependence on the media, *Egyptian Journal of Public Opinion Research,* 14(2), 413-516.

Jain, A., Jindal, A., Bansal, N., & Arora, H. (2018). Comparison of drug information in package inserts with standard medical textbook of pharmacology. *International Journal of Basic & Clinical Pharmacology, 7*(5).

Joseph, B. N., Asiegbu, U. O., Aya, B. M., Nyam, M. N., Umar, D. M., Jimam, N. S., & Dapar, M. L. (2017). Usability of Medicine Package Inserts for Chronic Diseases: A Survey of the Pharmaceutical Market in Jos, Nigeria. *Journal of Pharmaceutical Research International*, *7*(4), 1–10.

Khamas, S. S., Jafari, A., Yeganeh, M. Z., & Masoumi, H. T. (2019). Evaluation of medication package inserts in Iran. *Journal of research in pharmacy practice*, *8*(2), 45-51.

Koo, M. M., Krass, I., & Aslani, P. (2003). Factors influencing consumer use of written drug information. *Ann Pharmacother*, *37*(2), 259–67.

Lee, S. (. (2013). *Understanding Customers' Healthy Eating Behavior in Restaurants Using the Health Belief Model and Theory of Planned Behavior.* Doctor of Philosophy, the faculty of Virginia Tech, Hospitality and Tourism Management, Blacksburg, Virginia.

Lihua, D. (2021). An Extended Model of the Theory of Planned Behavior: An Empirical Study of Entrepreneurial Intention and Entrepreneurial Behavior in College Students. *Front. Psychol.*, *12*. doi:https://doi.org/10.3389/fpsyg.2021.627818

Liu, S. (2021). *How in-U.S. Chinese college students consume Covid-19 information on social media: Examining the relationship between media credibility and media dependency*. Master of Arts, Boston University. Retrieved 10 17, 2023, from https://www.proquest.com/docview/2533376038/fulltextPDF/66F16BAB9A644ADCPQ/2?accountid=178282

Mehlman-Brightwell, D. R. (2021). *Facebook users' social media dependency, news credibility, and concerns of foreign interference in the 2016 and 2020 U.S. Presidential elections.* Doctor of Philosophy, Indiana University of Pennsylvania, The School of Graduate Studies and Research. Retrieved from https://www.proquest.com/docview/2560855250/fulltextPDF/66F16BAB9A644ADCPQ/1?accountid=178282

Meyer, S. B., Ward, P. R., & Jiwa, M. (2012). Does prognosis and socioeconomic status impact on trust in physicians? Interviews with patients with coronary disease in South Australia. *BMJ Open*, *2*(5). doi:10.1136/bmjopen-2012-001389

Miquel, A. V., Font, F. O., Marrugat, J., & Pavesi, M. (2000). Assessment of the comprehension of new rephrasing drug package inserts. *Med Clin (Barc), 115*(11), 410-7.

Nathan, J. P., & Vider, E. (2015). The Package Insert. *US Pharm*, *40*(5), 8–10.

Qatmosh, S. A., Koni, A. A., Qeeno, B. G., Arandy, D. A., Abu-Hashia, M. W., Al-hroub, B. M., & Zyoud, S. H. (2017). Comparative analysis of package inserts of local and imported antihypertensive medications in Palestine. *BMC Public Health*, *17*(1), 741-750.

Ramdas, D., Chakraborty, A., Hs, S., Faizan, S., Kumar, V., & Bn, S. (2013). A study of package inserts in Southern India. *J Clin Diagn Res.*, *7*(11), 2475-7.

S, N. P., Revankar, S. P., H, V., Manjunath, H., & Hegde, S. (2017). Analysis of completeness of drug package inserts available in India. *National Journal of Physiology, Pharmacy and Pharmacology, 7*(11), 1139-1143.

S. Roy, M., Caillouette, J. C., Faden, J. S., & T. Roy, M. (2005). The role of an over-the-counter vaginal pH self-test device package insert: Can subjects learn what the device is for and how to use it? *American Journal of Obstetrics and Gynecology, 192*, 1963-1967.

Sawalha, A., Sweileh, W., Zyoud, S., & Jabi, S. (2008). Comparative analysis of patient package inserts of local and imported anti-infective agents in Palestine. *Lybian J Med, 3*(4), 181- 5.

Segun, S. J., & Victor, B. O. (2021). Utility of information in package inserts by pharmacists and pharmacy clients in a metropolitan city in Southwest Nigeria. *Journal of Pharmaceutical Health Services Research, 12*, 47–52.

Swenson, R. R. (2007). *An integrated theoretical model of condom use intentions among emerging adult female college students: The Health Belief Model and Theory of Planned Behavior*, Doctor of phylosophy, College o f Arts & Sciences, Department of Psychology. State University of New York.

WILFRED, O. O., AKPOR, E. D., & CHUKWU, O. J. (2021). Application of agenda setting. media dependency, and uses and gratifications theories in the management of disease outbreak in Nigeria. *Euromentor Journal, 12*(3), 102-118

Weinstein, N. D. (1993). Testing four competing theories of health-protective behavior. *Health Psychology, 12*(4), 324-333.