

# Adherence of Drug Advertisements to the International Marketing Codes

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## *Introduction*

Misleading information about drugs may lead to inappropriate drug use which can damage patients' health and cause an increase in medical costs<sup>1-3</sup>. On the other hand, some of the promotional activities implemented by pharmaceutical companies provide useful information about drugs.

In this context, the World Health Organization (WHO) has defined the promotional activities as follows: "*Promotion refers to all informational and persuasive activities by manufacturers and distributors, the effect of which is to induce the prescription, supply, purchase and/or use of medicinal drugs*"<sup>4</sup>.

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“Personal selling, Advertising, Public Relations and Sales Promotion” are the four major promotion activities<sup>5</sup>. Among them advertising is one of the most used promotional methods for drugs. A drug advertisement often placed in objectively and verifiable medical journals is the easiest available drug promotion method to healthcare professionals<sup>6,7</sup>. Besides drug advertisements are one of the most detailed information sources for updating physicians’ drug knowledge<sup>8</sup>. Moreover it is indicated that the main reason for placing drug advertisements in medical journals is to finance them<sup>9</sup>.

All types of information activities; drug recommendation to patients, some stages of selling and supplying efforts can be included in pharmaceutical advertising<sup>10</sup>. Announcing a new product, creating a product or rising brand awareness, providing information about the brand, its benefits and superior features and increasing sales are the main aims of drug advertisements<sup>11</sup>. In many countries, drug advertising is allowed only to the healthcare providers (i.e. physician, pharmacist, nurse, dentist, etc) who are the decision makers on the pharmaceutical product as a prescription writer<sup>12</sup>. In most of the countries physicians are the only qualified professionals who have the authority to prescribe. However, drug advertisements can affect physicians’ prescribing habits and diagnosis<sup>13,14</sup>. Thus advertisements aim to give information to the physicians about evidence-based practices and to follow these practices<sup>15</sup>.

In Turkey, pharmacists also have an important role on the healthcare system. Community pharmacies are the first port for the people to counsel on various health issues. Ailments in minor diseases are one of the most frequently counseled issues<sup>16</sup>.

In a Finland based study Närhi found that physicians and pharmacists are the most common information sources for medicine users<sup>17</sup>. Therefore, drug advertisements are significant both for the physicians and for the pharmacists.

Considering all these, it is important to be attentive while preparing and publishing drug advertisements. Some international organizations’ codes such as WHO’s “Criteria for Medicinal Drug Promotion”<sup>4</sup> and International Federation of Pharmaceutical Manufacturer’s Association (IFPMA)’s “IFPMA Code of Pharmaceutical Marketing Practices”<sup>18</sup> have some criteria for drug advertisements.

WHO's "Criteria for Medicinal Drug Promotion" which was accepted in 1988 is one of the first documents related to drug advertisements. These criteria are the basis of later regulations. On the other hand IFPMA updated the "IFPMA Code of Pharmaceutical Marketing Practices" which regulates drug promotion on an international scale in 2006<sup>4,7</sup>.

The purpose of this study is to assess the characteristics and adherence of drug advertisements published in medical journals taking into consideration WHO's and IFPMA's criteria. Also we aimed to see whether any differences exist among the analyzed publications in terms of drug advertisements.

### *Materials and Methods*

The drug advertisements published in "Journal of American Medical Association (JAMA)", "JAMA Türkiye" and "Eczacı (Pharmacist)" were evaluated in this study. The rationale for choosing these journals is that all of the reviewed journals are related to healthcare and they are both for physicians and pharmacists. "JAMA" is a scientific general medicine journal which reaches to a large number of healthcare professionals in the world<sup>19</sup>. At the beginning of the study, to compare with "JAMA", a SCI (Science Citation Index) journal in Turkey was tried to be selected. But none of these SCI general medicine journals contained drug advertisements. As a result, "JAMA Türkiye" is selected to make a comparison with "JAMA". "JAMA Türkiye" contains translated articles published in JAMA. But the drug advertisements printed in "JAMA Türkiye" is totally different from the original "JAMA". The journal "Eczacı" which is a professional journal reaches to a large number of pharmacists in Turkey too.

#### Data collection

All drug advertisements published in 2006 and 2007 issues of the journals "JAMA", "JAMA Türkiye" and "Eczacı" were retrospectively examined. As the publication of "JAMA Türkiye" ended in the beginning of 2008 like "JAMA Français"<sup>20, 21</sup> the selected journals examination period was limited to only two years (2006-2007). All these journals were reached by the first author of this manuscript visiting the Libraries of Hacettepe, Ankara and Gazi University Faculties of Medicine and the

Library of Hacettepe University Faculty of Pharmacy. And then each issue of these journals was reviewed one by one. The missing issues of “JAMA Türkiye” and “Eczacı” were obtained through contact with the publishers by e-mail. Some journal issues had their own advertisement indices, missing indices were created by the first author. Photocopies of these drug advertisements were taken in the light of these indices. Journal collection process started in October 2008. Completing the missing issues with drug advertisements’ photocopies was finished in April 2009.

The number of allocated pages for all advertisements, the number of all advertisements and both the number of allocated pages for drug advertisements and the number of drug advertisements were determined to understand the distribution of advertisements in journals. Then, the ATC (Anatomical Therapeutic Chemical Classification) system was used to classify the drugs in advertisements into therapeutic categories by taking into account Vademecum<sup>22</sup>.

WHO’s “Criteria for Medicinal Drug Promotion” and IFPMA’s “Code of Pharmaceutical Marketing Practices” were transformed to checklists and these were used to evaluate the drug advertisements’ adherence to the international codes. WHO’s codes are more comprehensive but IFPMA’s codes include two more criteria other than the WHO’s, that is why we combined the two international codes.

### Statistical analysis

Data analysis was performed by using SPSS version 15.0 (SPSS, Inc., Chicago IL). When chi-square tests were done, the codes of the two organizations (WHO and IFPMA) were combined. Tables were established by considering these two codes.

## *Results*

The distribution of the advertisements:

The number of published issues for “JAMA”, “JAMA Türkiye” and “Eczacı” are as follows respectively 94; 23; 24 during 2006 and 2007. Table I shows the number of total pages in each Journal, number of all

TABLE I  
Quantitative characteristics of journal advertisements by years

Journal name	Publishing year	Number of Total Pages $N_1$	Number of Advertisements $N_2$	Number of Drug Advertisements $N_3$ ( $N_3/N_2$ )	Allocated Total Pages for Drug Advertisements $N_4$ ( $N_4/N_1$ )
<b>ECZACI</b>	2006	948	329	59	56
	2007	828	286	45	42
<b>Total</b>		<b>1776</b>	<b>615</b>	<b>104</b>	<b>98</b>
<b>JAMA TÜRKİYE</b>	2006	583	117	105	109
	2007	626	90	79	73
<b>Total</b>		<b>1209</b>	<b>207</b>	<b>184</b>	<b>182</b>
<b>JAMA</b>	2006	5606	1033	768	1172
	2007	5639	923	606	922
<b>Total</b>		<b>11245</b>	<b>1956</b>	<b>1374</b>	<b>2094</b>
				<b>70.24</b>	<b>8.62</b>

the advertisements, number of drug advertisements and allocated total pages for drug advertisements.

The percentage of the drug advertisements printed in “Eczacı”, “JAMA” and “JAMA Türkiye” are respectively %16.91, %70.24 and %88.88 among all advertisements.

According to the results of the chi-square tests for the distribution of drug advertisements in “Eczacı” and “JAMA Türkiye”, the two journals are statistically different in terms of the number of drug advertisements and the allocated number of pages for drug advertisements. (The number of drug advertisements - Likelihood Ratio=0,  $p < 0.05$ ; the allocated page number for drug advertisements - Likelihood Ratio=0,  $p < 0.05$ ).

The results of chi-square tests for the distribution of drug advertisements in “JAMA” and “JAMA Türkiye” shows that these two journals are statistically different in terms of the number of drug advertisements and the allocated number of pages for drug advertisements (The number of drug advertisements - Likelihood Ratio=0,  $p < 0.05$ ; the allocated page number for drug advertisements - Likelihood Ratio=0.002  $p < 0.05$ ).

#### Drug advertisements' categories:

In the Figure 1, the percentage of drug advertisements category in the reviewed journals are shown. 25% of drug advertisements in “Eczacı Journal” belonged to the “Genito urinary system and sex hormones”, 23.91% of drug advertisements in “JAMA Türkiye” belonged to the “Alimentary tract and metabolism” and 30.35% of drug advertisements in “JAMA” belonged to “Nervous system”.

#### The adherence of drug advertisements to the international codes:

Five of the published advertisements in “Eczacı” and only one of the published advertisement “JAMA Türkiye” met all criteria (Table II). These two journals are not statistically different from each other in terms of the adherence to the criteria (Fisher's Exact Test=0.411,  $p > 0.05$ ). None of the drug advertisements in “JAMA” met all the criteria.

Only “The date of production of the advertisement” and “The approved therapeutic uses” criteria are statistically different between “JAMA Türkiye” and “Eczacı” (The date of production of the advertisement - Likelihood Ratio=0.032,  $p < 0.05$ ; the date of production of the advertisement

FIGURE 1

The Histogram of the ATC classified drug advertisements in journals

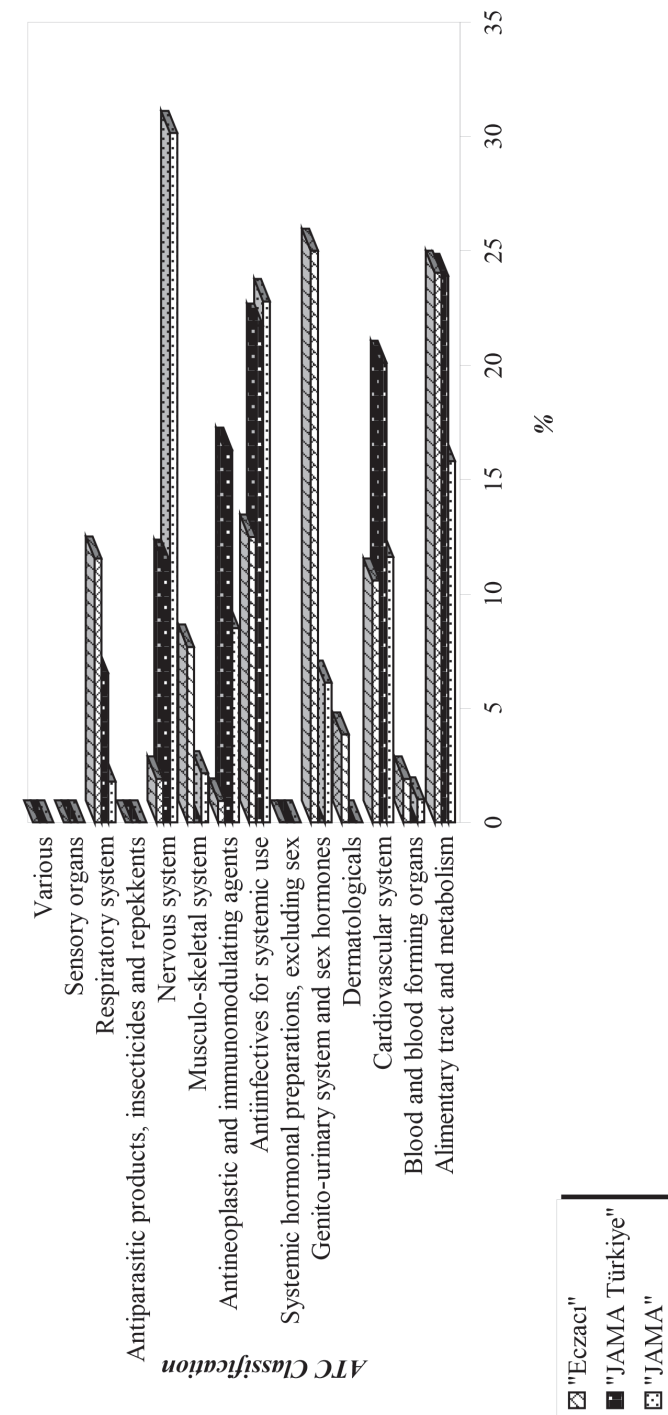


TABLE II  
Comparison between JAMA Türkiye – Eczacı and JAMA – JAMA Türkiye in terms of adherence to the codes

Required Characteristics in Drug Advertisements	ECZACI		JAMA TR		X <sup>2</sup>	P	JAMA		JAMA TR		X <sup>2</sup>	P
	A	NA	A	NA			A	NA	A	NA		
Indication of the name of the product	42	0	23	0	-	-	54	0	23	0	-	-
Indication of the active ingredients	40	2	23	0	-	0,536	51	3	23	0	-	0,550
Indication of the other ingredients	19	23	9	14	0,227	0,634	0	54	9	14	-	0
Indication of approved therapeutic uses	41	1	22	1	-	1,00	44	10	22	1	-	0,158
Dosage form indication	42	0	22	1	-	0,354	44	10	22	1	-	0,158
Side-effects indication	38	4	20	3	-	0,691	40	14	10	13	6,470	0,111
Contra-indications indication	38	4	22	1	-	0,648	40	14	22	1	-	0,031
Precautions indication	35	7	21	2	-	0,474	41	13	21	2	-	0,207
Major interactions indication	30	12	18	5	0,366	0,545	39	15	18	5	0,190	0,663
Providing the name of the pharmaceutical company	42	0	23	0	-	-	53	1	23	0	-	1,00
Providing the address of the manufacturer	38	4	22	1	-	0,648	35	19	22	1	-	0,04
Providing references	14	28	16	7	7,990	0,05	34	20	16	7	0,313	0,576
The date of production of the advertisement indication	14	28	14	9	4,603	0,032	31	23	14	9	0,080	0,777
The method of use indication	16	26	16	7	6,066	0,014	24	30	16	7	4,169	0,041

**JAMA TR:** JAMA Türkiye

**A:** Available

**NA:** Not Available



– Likelihood Ratio=0.014,  $p < 0.05$ ). All advertisements have “The name of the product” and “The name of the pharmaceutical company”. Therefore, chi-square tests were not applied for these criteria (Table II).

There are statistically significant differences between “JAMA” and “JAMA Türkiye” in terms of the “Name of other ingredients”, “Contra-indications”, “Address of manufacturer” and “Approved therapeutic uses”. (Name of other ingredients – Fisher’s Exact Test = 0,  $p < 0.05$ ; Contra-indications – Fisher’s Exact Test = 0.031,  $p < 0.05$ ; the address of manufacturer - Fisher’s Exact Test=0.04,  $p < 0.05$ ; Approved therapeutic uses – Likelihood Ratio=0.041,  $p < 0.05$ ). All advertisements have the “Name of the product”. Therefore, chi-square tests were not applied for these criteria (Table II).

### *Discussion*

Nowadays it is known that the increased use of medication continues<sup>23</sup>. This increase was detected in North America, which is the largest pharmaceutical market in the world at the same time<sup>24</sup>. Therefore it is not surprising to find out that “JAMA” has the highest drug advertisement ratio among other analyzed journals. Also Turkey is one of the largest pharmaceutical markets in Europe<sup>25</sup>. According to the Turkish Pharmacists’s Association in 2007 (TEB), 114.583 physicians are available in Turkey<sup>26</sup>. This high number of decision-makers on drugs makes Turkey an attractive market for pharmaceutical companies. This situation can be explained by the high drug advertisement ratio in medical journals printed in Turkey. But on the other hand the lowest drug advertisement ratio belongs to “Eczacı” when it is compared with “JAMA” and “JAMA Türkiye”.

This can be explained by Turkish legislation. According to this legislation, pharmacists are not allowed to prescribe. So pharmaceutical companies may choose to advertise in the journals like “JAMA” and “JAMA Türkiye” as their target groups are directly the physicians.

The most advertised and used drug category in Turkey is “Antiinfectives for systemic use”<sup>27</sup>. That indicates the connection between drug advertisements and drug use. In our study we also found that this drug

class is also have a high number of advertisements in local medical journals (“Eczacı” and “JAMA Türkiye”). It is interesting that the “Genito urinary system and sex hormones” are the most advertised drug categories in “Eczacı” although this category is not in the best-seller group. The reason for this can be the patient choice to take these drugs only in consultation with a pharmacist.

As a communication and information channel, medical journals and drug advertisements in them have a significant role. Drug advertisements in medical journals are one of the important components of drug marketing. Their target groups are journal readers, in other words healthcare professionals<sup>28</sup>.

Lua et al. found in their study that some questions from patients to the physicians are about drug use and effect<sup>29</sup>. However this information is missing on some advertisements in these three journals.

Drug advertisements may have bias, and there are doubts about the accuracy of the information provided in drug advertisements<sup>30, 31</sup>. To eliminate this suspicion, scientific references are given in drug advertisements. Providing references in drug advertisements is a marketing strategy<sup>32</sup>. WHO and IFPMA criteria have also emphasized the need for references in drug advertisements. There are many published studies about reference citing in advertisements<sup>11, 15, 33-35</sup>. According to a study by Cooper and Schringer, 126 of 438 advertisements in 10 American Journals have no references<sup>33</sup>. In a study conducted in 2010, of the 614 advertisements 52 had no references<sup>34</sup>. In our study, of 62.9% of advertisements in “JAMA”, 69.9% in “JAMA Türkiye” and 33.3% in “Eczacı” have references.

It is stated that the adherence of drug advertisements to the WHO criteria in less developed countries is low<sup>36</sup>. This situation is quite contrary to these findings. In this study, it was hypothesized that the advertisements especially in “JAMA” would adhere to the international bodies’ criteria more than the advertisements in other journals. However, the results show that the advertisements in local journals in Turkey adhere to all the criteria more than “JAMA”. Only 5 of the advertisements published in “Eczacı” and 1 in “JAMA Türkiye” met all the criteria of WHO and IFPMA. The lack of fulfilling all the criteria in advertisements published in “JAMA” is remarkable. It is thought that the strictness of the regulation on drug advertisements in Turkey can be effective for this result.

Unethical drug promotion, especially in less developed countries, increases the rate of irrational drug use<sup>37</sup>. The excessive number of drug advertisements in journals and their impartiality are a subject of discussion<sup>38</sup>. Moreover journal editors should abide by criteria and these criteria should be up to date<sup>39</sup>.

Drug advertisements are important sources for reliable drug information to healthcare professionals and they are expected to provide impartial, scientific and complete information for prescribers and other decision-makers. In this context it is significant to adhere to the international marketing codes of the well known organizations like WHO and IFPMA. It is required to be neutral in publishing drug advertisements for the protection of public health. The healthcare professionals should also pay attention while evaluating advertisements in the journals as sometimes adherence to the international codes can be ignored. This is important both when they provide any information about drugs to their patients and give an unbiased feedback to the editors of the journals.

### *Summary*

Drug advertisements provide information about drugs. The aim of this study is to explore the adherence of drug advertisements in medical journals to the international marketing codes. Drug advertisements printed in “Journal of American Medical Association (JAMA)”, “JAMA Türkiye” and “Eczacı (Pharmacist) Journal” were analyzed. Adherence of the analyzed advertisements to the international drug promotion codes was the main outcome measure. The lowest compliance ratio of drug advertisements belongs to the “JAMA” Journal. The rate of cited references in drug advertisements is very low and the majority of these advertisements do not adhere to the international codes. In order to avoid this situation, adherence of drug advertisements to the international codes is extremely significant.

*Keywords:* Advertisement, Medical journal, Codes, Adherence

## Özet

### **İlaç Reklamlarının Uluslararası Pazarlama Kurallarına Uygunluğu**

İlaç reklamları, ilaçlar hakkında bilgi sağlamaktadır. Bu çalışmanın amacı, medikal dergilerdeki ilaç reklamlarının uluslararası reklam kurallarına uygunluğunun ortaya konmasıdır. “Amerikan Tıp Birliği Dergisi (Journal of American Medical Association - JAMA)”, “JAMA Türkiye” ve “Eczacı” dergilerindeki ilaç reklamları incelenmiştir. İlaç reklamları için hazırlanan uluslararası kurallar belirlenmiş ve reklamların bu kurallara uygunluğu incelenmiştir. En düşük uygunluk oranının “JAMA” dergisine ait olduğu belirlenmiştir. İlaç reklamlarında referanslara yer verilme oranının çok düşük olduğu ve bu reklamların çoğunun uluslararası kurallara uymadığı tespit edilmiştir. Bu durumun önüne geçilmesi için, ilaç reklamlarının uluslararası kurallara uyması son derece önemlidir.

*Anahtar Kelimeler:* Reklam, Medikal dergi, Kurallar, Uygunluk

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