

# Patients' intention to consume prescribed and non-prescribed medicines: A study based on the theory of planned behaviour in selected European countries

A. Kamekis MA, PhD(c)<sup>1</sup> | A. Bertias PhD(c)<sup>1</sup> | J. Moschandreas MSc, MSc, PhD<sup>2</sup> |  
E. Petelos MPH, PhD(c)<sup>1</sup> | M. Papadakaki MPH, PhD<sup>1</sup> | V. Tsiantou MSc, PhD<sup>1,3</sup> |  
A. Saridaki MSc<sup>1</sup> | E. K. Symvoulakis MD, PhD<sup>4</sup> | K. Souliotis PhD<sup>3,5,6</sup> |  
N. Papadakis MA, MA, PhD<sup>6</sup> | T. Faresjö PhD<sup>7</sup> | A. Faresjö PhD<sup>7</sup> | L. Martinez MD<sup>8</sup> |  
D. Agius MD, MSc (FM), MMCDF<sup>9</sup> | Y. Uncu PhD<sup>10</sup> | T. Sengezer MD<sup>11</sup> |  
G. Samoutis MD, PhD<sup>12</sup> | J. Vlcek PhD<sup>13</sup> | A. Abasaeed PhD<sup>13</sup> | B. Merkouris MD<sup>14</sup> |  
C. Lionis MD PhD FRCGP (Hon)<sup>4</sup>

<sup>1</sup>Clinic of Social and Family Medicine, Faculty of Medicine, University of Crete, Heraklion, Greece

<sup>2</sup>Department of Social Medicine, Faculty of Medicine, University of Crete, Heraklion, Greece

<sup>3</sup>Department of Health Economics, National School of Public Health, Athens, Greece

<sup>4</sup>Clinic of Social and Family Medicine, Faculty of Medicine, University of Crete, Crete, Greece

<sup>5</sup>Faculty of Social Sciences, University of Peloponnese, Corinth, Greece

<sup>6</sup>Department of Political Science, Faculty of Social Science, University of Crete, Crete, Greece

<sup>7</sup>Division of Community Medicine, Primary Care, Department of Medical and Health Sciences, Linköping University, Linköping, Sweden

<sup>8</sup>Societe Francaise de Medecine Generale, Faculte de Medecine, Pierre et Marie Curie Universite, Paris, France

<sup>9</sup>Mediterranean Institute of Primary Care, Attard, Malta

<sup>10</sup>Department of Family Medicine, School of Medicine, University of Uludag, Bursa, Turkey

<sup>11</sup>Ankara Numune Research and Training Hospital, Turkey

<sup>12</sup>Community and Population Health, General Practice, St George's University of London Medical School, University of Nicosia, Nicosia, Cyprus

<sup>13</sup>Faculty of Pharmacy in Hradec Kralove, Charles University in Prague, Prague, Czech Republic

<sup>14</sup>Greek Association of General Practitioners, Thessaloniki, Greece

## Correspondence

A. Kamekis, Clinic of Social and Family Medicine, Faculty of Medicine, University of Crete Voutes, Heraklion, Crete, Greece.  
Email: kamekis@yahoo.gr

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## Summary

**What is known and objective:** Polypharmacy has a significant impact on patients' health with overall expenditure on over-the-counter (OTC) medicines representing a substantial burden in terms of cost of treatment. The aim of this study, which was conducted within the framework of a European Project funded by the European Union under the Seventh Framework Programme and was entitled OTC-SOCIOMED, was to report on possible determinants of patient behaviour regarding the consumption of medicines, and particularly OTCs, in the context of primary care.

**Methods:** A multicentre, cross-sectional study was designed and implemented in well-defined primary healthcare settings in Cyprus, the Czech Republic, France, Greece, Malta and Turkey. Patients completed a questionnaire constructed on the basis of the theory of planned behaviour (TPB), which was administered via face-to-face interviews.



**Results and discussion:** The percentage of patients who had consumed prescribed medicines over a 6-month period was consistently high, ranging from 79% in the Czech Republic and 82% in Turkey to 97% in Malta and 100% in Cyprus. Reported non-prescribed medicine consumption ranged from 33% in Turkey to 92% in the Czech Republic and 97% in Cyprus. TPB behavioural antecedents explained 43% of the variability of patients' intention to consume medicines in Malta and 24% in Greece, but only 3% in Turkey. Subjective norm was a significant predictor of the intention to consume medicines in all three countries (Greece, Malta and Turkey), whereas attitude towards consumption was a significant predictor of the expectation to consume medicines, if needed.

**What is new and conclusion:** This study shows that parameters such as patients' beliefs and influence from family and friends could be determining factors in explaining the high rates of medicine consumption. Factors that affect patients' behavioural intention towards medicine consumption may assist in the formulation of evidence-based policy proposals and inform initiatives and interventions aimed at increasing the appropriate use of medicines.

#### KEYWORDS

over-the-counter medicines, patients, prescribing, primary health care, theory of planned behaviour

## 1 | WHAT IS KNOWN AND OBJECTIVE

Treatment with medicines is one of the most cost-effective medical interventions, but a substantial proportion of medicines are used irrationally worldwide.<sup>1</sup> The irrational use of medicines, which involves use of medicines that is inappropriate for the medical needs of the patient, can result in actual harms instead of benefits.<sup>2-5</sup> Such inappropriate use increases the level of polypharmacy, that is concurrent use of multiple medicines for a single patient for one or multiple conditions, often leading to prescribing cascades. This trend represents a widespread urgent global issue affecting Europe, and especially some Mediterranean countries,<sup>6</sup> necessitating immediate action.

Achieving rational prescribing and appropriate use of OTC medicines is important for any country, but is of particular importance for countries affected by austerity, representing additional challenges in the absence of a well-organized primary care system (eg Greece and Cyprus).<sup>7,8</sup> In order to achieve cost containment in countries affected by austerity, copayment has been increased. It turns out that the combination of high levels of medicine consumption with the increase of copayments has reduced that access to patients, especially those with low income.<sup>9-11</sup> However, the availability of OTC medicines is still extended in some countries and led GPs and other health professionals to express concerns. For them the high levels of OTC medicines, availability could lead to misuse, abuse of such medicinal products. Additional risks include patient safety issues, potential misdiagnosis of disease and drug-drug interactions.<sup>12-14</sup>

Several factors can influence the consumption of medicines, such as self-motivation, beliefs and attitudes.<sup>15</sup> Self-management especially

self-medication with OTC medicines has received attention worldwide, whereas trends in recent decades are changing the status of medication from prescription-only medicines to OTC medicines.<sup>16-18</sup>

Studies have indicated that the rate of self-medication is high in Eastern and Southern Europe and relatively low in Northern and Western Europe<sup>14-19</sup> and it can be explained by certain contextual terms related to primary care services provision and cost containment regulations to control budget allocated to health especially during the austerity period. Since 2000s, self-medication has gradually become a widespread phenomenon. One crucial reason among others such as deregulation, mail order and online pharmacies<sup>20,21</sup> for this was the extensive access to information resources<sup>22</sup> through which patients could form a personal opinion about "appropriate" medicines without referring to a GP for a consultation or for further information.<sup>23,24</sup>

Behavioural patterns and subsequent norms could identify patients' attitudes towards the consumption of medicines. In that context, sociopsychological theories have been utilized in understanding such behaviours.<sup>25,26</sup> Such theories include the theory of planned behaviour (TPB), which is a frequently tested sociopsychological model.<sup>25</sup> The TPB assumes that behaviour is predicted by the strength of a person's intention to behave in that particular way. Behavioural intention is to be predicted by three variables: attitude towards the behaviour (Att), subjective norm (SN) and perceived behavioural control (PBC).<sup>25</sup>

This study reports findings from OTC-SOCIOMED, a European project funded by the European Commission through the Seventh Framework Programme (FP7), and focusing on "Assessing The Over-The-Counter Medications In Primary Care And Translating The Theory Of Planned Behaviour Into Interventions (OTC-SOCIOMED)" (EU FP7

n°223654-06/05/08).<sup>9</sup> The primary objective of OTC-SOCIOMED was to assess the extent of irrational prescribing and inappropriate consumption of OTC medicines in selected European countries, and to identify factors that influence the intention of GPs, pharmacists and patients in primary care settings towards the consumption/dispensing of OTC medicines. Previously reported results from this project indicate that patients who approve of prescribing can affect a GP's attitude towards prescribing<sup>27</sup> and that irrational prescribing exists in all countries to a differing extent.<sup>14</sup> The present study reports on the primary care patients' behaviour towards consumption of prescribed and non-prescribed medicines. The principal aim of this study was to report on possible determinants of patient behaviour regarding the consumption of medicines and particularly OTCs in the context of primary care in selected European settings.

## 2 | METHODS

### 2.1 | Type of study

This was a multicentre, cross-sectional, observational study across multiple settings in seven European countries.

### 2.2 | Participants and setting

Study fieldwork was conducted between March and April 2011 in well-defined primary healthcare (PHC) settings across seven European countries. The setting included Cyprus (Nicosia and Larnaca), the Czech Republic (Hradec Kralove), France (Indre-et-Loire from region Centre and Alpes-Maritimes from Provence-Alpes-Côte d'Azur [PACA]), Greece (the island of Crete), Malta (Southern and Northern Harbour, South Eastern and Western Districts), Turkey (Ankara-Kecioren, Aydin-Centrum and Bursa-Nilufer) and Sweden (Östergötland). Each country was asked to identify one or two well-defined PHC areas representing a mix of urban, semi-urban and rural areas. Geographically defined PHC areas were chosen mostly from districts neighbouring the participating academic institutions. These aspects were extensively discussed, clarified and agreed upon in dedicated sessions of the kick-off meeting of the OTC-SOCIOMED executive board, in order to avoid variation of definitions in terms of these particular characteristics across countries. Eligible participants were adults, attending the selected PHC centres (PHCCs) irrespective of the reason of visit.

### 2.3 | Study instrument

The questionnaire was developed based on TPB theory according to the relevant guidelines.<sup>28</sup> The TPB questionnaire consisted of the items already mentioned measuring Att, SN and PBC of patients regarding consumption of medicines. A focus group discussion was conducted in Greece and 10 patients participated in a pilot study. These 10 patients were randomly selected from 350 patient records (five were female and five were male and the mean age was 63 years). The transcribed focus group session was content analysed and coded

according to TPB,<sup>28</sup> providing valuable information for the development of questions regarding recent behaviour (Table A1 in Appendix), as well as the indirect measurement of TPB antecedents (data are not analysed in this study).

The questionnaire was initially developed in the Greek language and translated into English using forward and backward translation to ensure accuracy. Following this process, it was distributed to the coordinating centres in each participating country. The questionnaire was subsequently translated into each national language (Czech, French, Swedish and Turkish). Centres in Malta used versions of the questionnaire in both English and Maltese. A pilot test was performed utilizing the method of cognitive debriefing in five patients participating in each country. Pilot testing led to reformulation or rephrasing of certain questions, as well as to minor changes throughout the questionnaire to ensure maximum relevance given in particular settings.

All TPB analyses were performed separately for each country. Two separate generalized intention (GI) (behavioural intention with regard to consumption of medicines) models were performed to measure possible relationships between antecedents, GI and other TPB measures.

### 2.4 | Statistical analysis

Participant characteristics were summarized per country using descriptive statistics. Characteristics were compared between countries using Pearson's chi-square test of independence and the nonparametric Kruskal-Wallis hypothesis test. Cronbach's alpha was calculated to assess the internal consistency of the three multi-item constructs (Att, SN and PBC). Items were removed in order to achieve adequate internal consistency.<sup>28</sup> A value of  $\alpha > .5$  was considered acceptable.<sup>29</sup> The items contributing to each construct per country, along with their range and median values, are presented in Tables A2 and A3 in Appendix. Possible relationships between the antecedents of intention to consume medicine and GI (ie between Att, SN and PBC, "Generalized Intention in Medicine Consumption") were assessed using correlation techniques and multiple linear regression models separately for each country. The coefficient of determination (adjusted  $R^2$ ) was used in order to assess the proportion of variability explained by the models. Model checking was performed using the residual plots for each model. Complete case analysis was used throughout. The level of significance was set to 5%, and the statistical software used was IBM SPSS version 21.

## 3 | RESULTS AND DISCUSSION

### 3.1 | Participant profile

The response rate that represents the number of patients who finally accepted our invitation, the number of the participants who completed the questionnaires and various characteristics of respondents are summarized in Table A4 in Appendix. From the 1040 interviews conducted, 909 (87%) resulted in complete questionnaires. Highest rates of questionnaires with complete data were observed in Malta



(100%) and the Czech Republic (99%) and the lowest completion rates were observed in France (74%) and Cyprus (61%),  $P$ -value  $<.0001$ . Female participants were more predominant in all participating countries ( $P$ -value=.435). Mean age was found to differ significantly across countries, with Turkey having the youngest participants (mean age 36 years, SD 14.3) and older ones in Malta (mean age 50 years, SD 14.4) and France (mean age 49 years, SD 19.3),  $P$ -value  $<.0001$ . Higher levels of education were reported in participants in Turkey, Cyprus and France (post-secondary or higher in 64%, 51% and 46%, respectively;  $P$ -value  $<.0001$ ) than in participants in the Czech Republic, Greece and Malta. In most countries, the survey was more commonly undertaken in urban practices rather than rural or semi-urban ones; urban practices represented 77%, 75%, 61%, 50% and 50% of the total number of practices in Turkey, Cyprus, Malta, France and the Czech Republic, respectively, whereas in Greece urban practices corresponded to 32% of the total number of practices.

### 3.2 | Previous consumption behaviour (prescribed and non-prescribed medicines)

The distribution of the number of prescribed medicines that patients reported having consumed in the last 6 months prior to taking part in the survey is summarized in Figure A1 in Appendix. In Cyprus, the Czech Republic and Greece, the median number was two (different) medicines consumed, whereas in France, Malta and Turkey the median number was three (different) medicines (Kruskal-Wallis chi-square 44.137 on 6 df,  $P$ -value  $<.0001$ ).

The median number of different non-prescribed medicines consumed in the previous 6 months is reported in Figure A2 in Appendix. In the Czech Republic and in Malta, the median number was two (different) non-prescribed medicines; in Cyprus, Greece and France, the median number was one, whereas in Turkey that number was zero (Kruskal-Wallis chi-square 176.660 on 6 df,  $P$ -value  $<.0001$ ).

The percentage of patients (those who consumed at least one medicine) was found to differ significantly between participating countries ranging from 79% in the Czech Republic and 82% in Turkey to 97% in Malta and 100% in Cyprus ( $P$ -value  $<.0001$ ). The percentage of non-prescribed medicines consumers was also found to differ between participating countries ranging from 33% in Turkey to 92% in the Czech Republic and 97% in Cyprus ( $P$ -value  $<.0001$ ). The above results are presented in Table A5 in Appendix.

### 3.3 | Correlations between TPB variables and multiple linear regression models

Correlations between individual TPB explanatory measures and the intention to consume medicines in the near future and the expectation to consume medicines if needed are presented in Tables A6 and A7 in Appendix, respectively. In all cases, the correlations were weak (ie  $\rho <.400$ ).

Based on the multiple TPB regression analyses, the TPB behavioural antecedents on intention to consume medicines in the near future (Q2, 9) (attitude, age, SN and PBC) explained 24% of the

variability of the intention to consume medicines in the near future which was found to be in Greece, 43% in Malta and 3% in Turkey (Table A6 in Appendix). Subjective norm was the only statistical significant TPB predictor of the intention to consume medicines in the near future common in all three countries ( $P$ -value=.038 in Greece,  $<.0001$  in Malta and .042 in Turkey; Table A6 in Appendix).

When considering expectation to consume medicines as the response variable, TPB behavioural antecedents explained approximately the 22% of the variability in Greece, 30% in Malta, 7% in Turkey and 2% in France (Table A7 in Appendix). None of the TPB behavioural antecedents was statistically significant regarding the expectation to consume medicines, if needed, in France. On the other hand, attitude was a significant predictor in Greece, Malta and Turkey ( $P$ -value .003,  $<.0001$  and .035, respectively). Subjective norms and PBC were statistically significant predictors in Malta and Turkey ( $P$ -value=.049 and .07 for SN and  $P$ -value=.049 and .003 for PBC), but not in Greece (Table A7 in Appendix).

### 3.4 | Main findings

In this observational study, patients in Cyprus, the Czech Republic, Malta and Greece reported higher rates of consumption of non-prescribed medicines than patients in France and Turkey (Table A5 in Appendix). A well-developed OTC market and a national informative campaign for unnecessary use of medicines could be considered to be the most explanatory factor for findings in France<sup>30,31</sup> In Turkey, the current regulatory framework of OTCs' promotion may be the principal explanatory factor.<sup>32,33</sup> Past behaviour of prescribed medicines revealed that Cyprus, Malta and Greece (Table A5 in Appendix) presented the highest rates of consumption, a finding that confirms the already reported trends.<sup>27,34-36</sup>

Based on TPB regression models, the study revealed that SN (ie the influence of the family and friends towards medicine consumption) was a significant determinant of the intention to consume medicines in the near future in three of the participating countries (Greece, Malta and Turkey). An increased exchange of medicines both within family and outside of it, involving neighbours, relatives or friends, has also been previously reported.<sup>8,27</sup> These findings confirm that in the abovementioned countries, family and friends have an influential role in determining medicine consumption.

Furthermore, in Greece, Malta and Turkey, attitude seems to predict the expectation to consume. In Malta and Turkey, SN and PBC seem to be statistically significant predictors. Patients' beliefs about positive consequences of the consumption of medicines merit additional attention when examining polypharmacy and irrational prescribing patterns and used in designing interventions to be implemented in Southern European settings. In France, these factors are not correlated with patients' behaviour, probably due to specific reforms in their pharmaceutical markets, resulting in reductions in total medicine consumption.<sup>30</sup>

The results of this study show that parameters such as patients' beliefs and influence from family and friends may represent determining factors in explaining high rates of medicine consumption and may

lead to the use of non-prescribed medicines. As it is widely accepted, inappropriate consumption may have also a negative impact on both patients' health and healthcare expenditure (public and private).<sup>37,38</sup> Considering that since the beginning of the financial crisis, extensive cuts have been imposed in several European countries including Greece and Cyprus on public healthcare expenditure and the increased difficulties in accessing healthcare services,<sup>39</sup> a shift towards a higher degree of rationality in medicine consumption could benefit both patients and healthcare systems.

### 3.5 | Limitations

We are not certain to what extent the observed differences between the participating countries can be attributed to the differences in sample properties, as the participating regions within each country were not selected using a probability-based method and the impact of national public healthcare system structures is not known to us. Moreover, the response rates varied greatly between countries. Specifically, the response rate greatly varied among the participating sites from 25% in the Czech Republic to 100% in Turkey. For the reasons stated above, and also because of the small sample sizes in certain countries (such as Cyprus and in Greece), the study results should be interpreted with caution. Additionally, the response rate of France is not available. Due to the variability in the response rates and sampling in each participating country, certain demographic differences like the level of education have arisen. We are uncertain on the extent to which these identified differences impacted the patients' intention to consume medicines.

Due to restrictions from the respective National Ethics Committees (NECs), certain questions were excluded from the questionnaires in the Czech Republic, France and Sweden. More specifically, the question regarding intention to consume medicines in the near future (ie Q.2.9) was omitted in the French version of the questionnaire and was only partially completed in the Czech Republic; it was therefore omitted from the country-specific analysis and regression models. Questions regarding attitude (Q2.37A-D) were omitted from the Swedish version of questioner, which are not reported here. Furthermore, Cronbach analysis results indicated that different questions comprise the relevant TPB factors in each country, and thus, no between-country comparisons could be made. Furthermore, there is a lack of background information in relation to the chronic conditions of patients, so we do not know to what extent results could be influenced by this factor.

### 3.6 | Impact of our study

This was the first effort to use the TPB to investigate patients' intention to consume prescribed and non-prescribed medicines in European countries. The results of the current study, along with previously published findings from the OTC-SOCIOMED project,<sup>40</sup> provide a snapshot of medicine consumption in these countries and serve as a crucial basis for shaping effective policies towards a more appropriate use of medicines and pharmaceutical expenditure containment.

This study adds some information to the key question examined in this European collaborative project and partly discussed in previously published papers from this project.<sup>41</sup> Health policymakers could highlight the negative effects of inappropriate use of medicines using mass and social media, distribution of printed materials and through training courses in PHCs for local societies. Such interventions will lead to the increased safety, cost-effectiveness and clinical efficacy of medicines. The information provided from this study could be utilized by policymakers and relevant stakeholders in order to frame future interventions that will improve medicine consumption in a period where efforts to a more rational reform are attempted in certain countries in Southern Europe including Greece. Such an evidence-based policy would have two goals: to inform and educate patients to use medicines properly and to guide policy makers and stakeholders through reimbursement, coverage, access to medicines during earlier lifecycle stages, drugs becoming OTCs, overall access to medicines including OTCs, controlling and direct-to-consumer advertising.

## 4 | WHAT IS NEW AND CONCLUSION

The outcomes of this observational study revealed existing patients' beliefs and intentions towards medicine consumption in settings from selected European countries; the TPB did not explain in a high proportion the patient variability of the expectation to consume medicines, and as well as the intention to consume in the near future it needed. However, factors based on the TPB that affect patients' behavioural intention towards medicine consumption have been discerned and this knowledge could become a primary ground for the formulation of evidence-based policy proposals towards the increase of proper medicine usage especially in a period where austerity affects the cost and the quality of healthcare services.

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### CONFLICT OF INTEREST

None declared.

### ETHICAL APPROVAL

Approval has been obtained from local authorities and National Bioethics Committees in the participating countries, within the Seventh Framework Programme of the OTC-SOCIOMED project. [Grant Agreement No: 223654]. (CY No: EEBK EP2010 01.16; CZ No: Matoulková 2010; FR No: EGY/ND5/AR105323; GR No: 4483/31-5-2010; MT No: HEC23/10-07.10.2010; and TR No: 2010-6/1).

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## APPENDIX

**TABLE A1** Items used in the assessment of attitude, subjective norms, perceived behavioural control and generalized intentions

Attitude towards medicines consumption
Q2.38A. I believe that taking medication is: Harmful,
Q2.38B. Pleasant,
Q2.38C. Good Practice,
Q2.38D. Worthless
Subjective Norm
Q.2.8. Most of my close relatives routinely consume medicines
Q.2.52. Most of my friends routinely consume medicines
Q.2.60. People who are important to me approve my behaviour on medication consumption
Perceived Behaviour Control
Q.2.49. I am confident that I can make rational use of medicines
Q.2.56. The decision to consume medicines is entirely up to me
Q.2.64. The decision to stop consuming a medicine is entirely up to me
Generalized Intention in Medicines Consumption
Q.2.9. In the near future I intend to consume medicines
Q.2.37. I expect to consume medicines if I need to

**TABLE A2** Items used to create the constructs Attitude, SN & PBC constructs in each country (Cronbach's alpha)

	Cyprus (n=61)	Czech Republic (n=197)	France (n=123)	Greece (n=88)	Malta (n=145)	Turkey (n=180)
<i>Attitude</i>	2.38A	2.38A	2.38A	2.38A	2.38A	2.38A
I believe that taking medication is:	2.38B <sup>a</sup>	2.38B <sup>a</sup>	2.38B <sup>a</sup>	2.38B <sup>a</sup>	2.38B <sup>a</sup>	2.38C <sup>a</sup>
2.38A: Harmful .... Beneficial	2.38C <sup>a</sup>	2.38C <sup>a</sup>	2.38C <sup>a</sup>	2.38C <sup>a</sup>	2.38C <sup>a</sup>	2.38D
2.38B: Pleasant.... unpleasant	(0.532)	2.38D	2.38D	2.38D	2.38D	(0.648)
2.38C: Good practice .... Bad practice		(0.790)	(0.652)	(0.614)	(0.585)	
2.38D: Worthless ..... useful						
<i>Subjective norm (SN)</i>	2.8	2.8	2.8	2.8	2.8	2.8
2.8: Most of my close relatives routinely consume medicines (strongly disagree... strongly agree)	2.52 (0.682)	2.52 2.60	2.52 (0.506)	2.52 (0.585)	2.52 2.60 (0.667)	
2.52: Most of my friends routinely consume medicines (strongly disagree... strongly agree)		(0.696)				
2.60: People who are important to me approve my behaviour on medication consumption (strongly disagree... strongly agree)						
<i>Perceived behavioural control (PBC)</i>	2.49	2.49	2.49	2.56	2.49	2.49
2.49: I am confident that I can make a rational use of medicines (strongly disagree... strongly agree)	2.56 (0.519)	2.64 (0.508)		2.64 (0.549)	2.56 2.64	2.56 2.64
2.56: The decision to consume a medicine is entirely up to me (strongly disagree... strongly agree)					(0.633)	(0.576)
2.64 The decision to stop consuming a medicine is entirely up to me (strongly disagree... strongly agree)						

<sup>a</sup>Items used after reversed scoring.

**TABLE A3** Median scores of recent TPB measures in each country

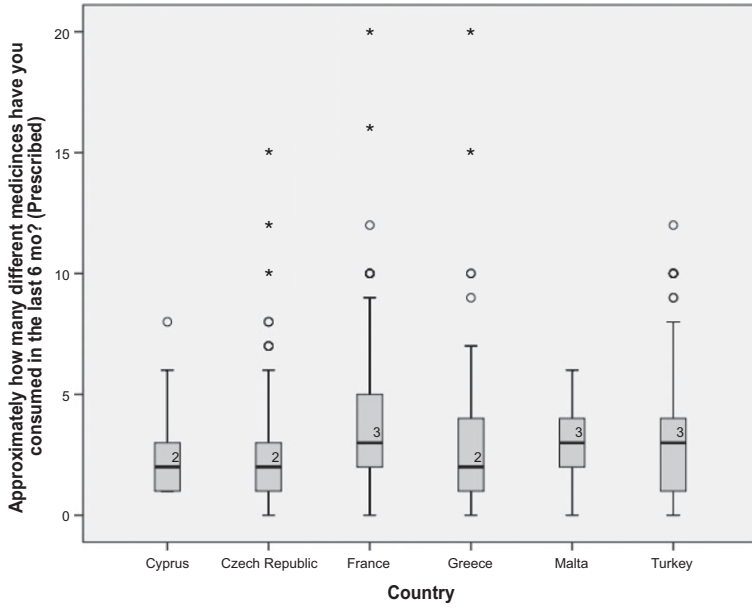
Country	N	Expectation to consume medicines if necessary Q2.9	Intention to consume medicines Q2.37	Attitude (1=strongly disagree, 7=strongly agree)	Subjective norm (SN) (1=strongly disagree, 7=strongly agree)	Perceived behaviour control (PBC) (1=strongly disagree, 7=strongly agree)
		Median (min, max) Range (1-7)	Median (min, max) Range (1-7)	Median (min, max) Range (1-7)	Median (min, max) Range (1-7)	Median (min, max) Range (1-7)
Cyprus	61	5.00 (2-75)	7.00 (4-7)	2.67 (1.33-5.67)	1.50 (1.00-5.50)	6.50 (3.50-7.00)
Czech Republic	197	-	-	4.75 (1.00-6.75)	4.00 (1.00-7.00)	5.00 (1.00-7.00)
France	123	-	5.00 (1-7)	3.75 (1.25-7.00)	4.00 (1.00-7.00)	6.00 (2.00-7.00)
Greece	88	5.00 (1-7)	7.00 (1-7)	4.88 (1.00-7.00)	4.25 (1.00-7.00)	4.00 (1.00-7.00)
Malta	145	3.00 (1-7)	5.00 (2-7)	4.25 (1.75-5.75)	4.00 (1.00-6.00)	3.33 (2.00-7.00)
Turkey	180	2.00 (1-7)	7.00 (1-7)	5.33 (1.00-7.00)	6.00 (1.00-7.00)	5.33 (1.00-7.00)

**TABLE A4** Socio-demographic characteristics of participating patients

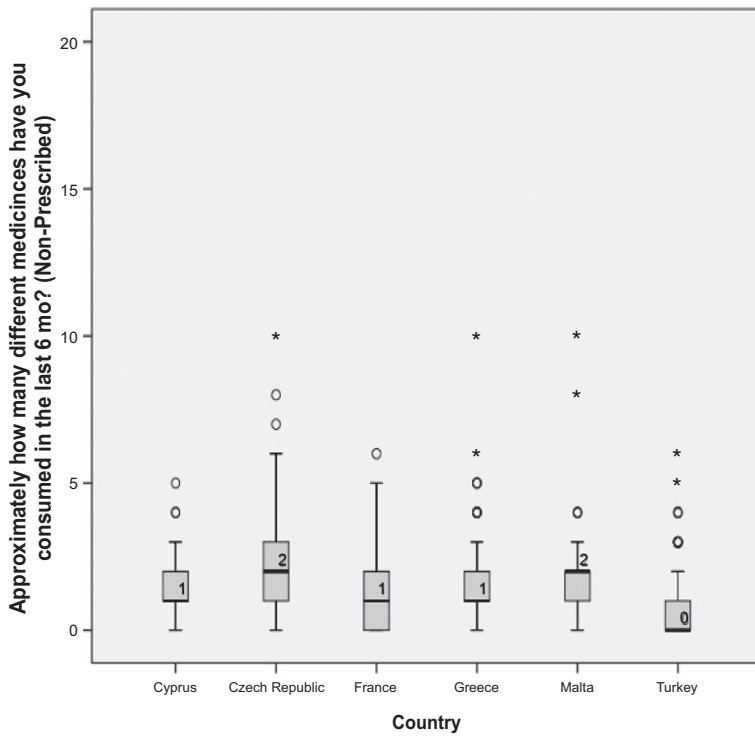
	Cyprus	Czech Republic	France	Greece	Malta	Turkey	P-Value
Invited Person	120	851		120	209	205	
Subjects accepted the invitation	100	199	166	94	145	205	
Response rates	80% (96/120)	25% (212/851)	- <sup>a</sup>	78% (94/120)	69% (146/209)	100% (205/205)	
Complete data	61 (61%)	197 (99%)	123 (74%)	88 (94%)	145 (100%)	180 (88%)	<.0001
Gender							0.435
Male n (%)	26 (42.6%)	93 (47.2%)	47 (38.2%)	32 (36.4%)	70 (48.3%)	76 (42.2%)	
Female n (%)	35 (57.4%)	104 (52.8%)	76 (61.8%)	56 (63.6%)	75 (51.7%)	104 (57.8%)	
Mean age (±SD)	42.7 (±18.0)	45.9 (±15.5)	48.6 (±19.3)	44.6 (±18.4)	49.5 (±14.4)	36.3 (±14.3)	<.0001
Level of education							<.0001
None-Primary	6 (9.8%)	12 (6.1%)	13 (10.6%)	27 (30.7%)	29 (20%)	13 (7.2%)	
Secondary-Vocational	24 (39.3%)	134 (68%)	54 (43.9%)	40 (45.5%)	85 (58.6%)	51 (28.3%)	
University-Technical-Postdoc-Other	31 (50.8%)	51 (25.9%)	56 (45.5%)	21 (23.9%)	31 (21.4%)	116 (64.4%)	
Type of service area							<.0001
Rural	1 (1.6%)	19 (9.6%)	40 (32.5%)	35 (39.8%)	3 (2.1%)	38 (21.1%)	
Semi-urban	14 (23%)	80 (40.6%)	21 (17.1%)	25 (25.4%)	54 (37.2%)	3 (1.7%)	
Urban	46 (75.4%)	98 (49.7%)	62 (50.4%)	28 (31.8%)	88 (60.7%)	139 (77.2%)	

<sup>a</sup>The response rate of France is not available.





**FIGURE A1** Number of prescribed medicines consumed



**FIGURE A2** Number of non-prescribed medicines consumed

**TABLE A5** Percentage of patients consuming prescribed and non-prescribed medicines per participating country

	Cyprus	Czech Republic	France	Greece	Malta	Turkey	P-Value
Consumed Prescribed medicines the last 6 months							<.0001
Yes	61 (100%)	156 (79.2%)	103 (83.7%)	75 (85.2%)	140 (96.6%)	148 (82.2%)	
No	0 (0%)	41 (20.2%)	20 (16.3)	13 (14.8%)	5 (3.4%)	32 (17.8%)	
Consumed non-prescribed medicines the last 6 months							<.0001
Yes	59 (96.7%)	181 (91.9%)	77 (62.6%)	68 (77.3%)	130 (89.7%)	60 (33.3%)	
No	2 (3.3%)	16 (8.1%)	46 (37.4%)	20 (22.7%)	15 (10.3%)	120 (66.7%)	

**TABLE A6** Standardized regression coefficients for the regression of behavioural antecedents on intention to consume medicines in the near future (Q2.9) (*P*-value)

Variable/country	Greece (n=88)	Malta (n=145)	Turkey (n=180)
Age (y)	0.299 (0.006)	0.215 (0.006)	0.103 (0.177)
Gender	-0.093 (0.340)	0.039 (0.553)	-0.043 (0.565)
Attitude	0.187 (0.061)	0.007 (0.923)	-0.073 (0.326)
Subjective norm (SN)	0.223 (0.038)	0.524 (<0.0001)	0.160 (0.042)
Perceived behavioural control (PBC)	-0.047 (0.626)	0.072 (0.278)	0.057 (0.452)
Adjusted R <sup>2</sup>	0.240	0.426	0.027

**TABLE A7** Standardized regression coefficients for the regression of behavioural antecedents on expectation to consume medicines if needed (Q2.37) (*P*-value)

Variable/country <sup>a</sup>	France (n=123)	Greece (n=88)	Malta (n=145)	Turkey (n=180)
Age (y)	-0.067 (0.507)	0.205 (0.059)	0.150 (0.081)	-0.002 (0.974)
Gender	0.034 (0.724)	0.097 (0.329)	-0.060 (0.406)	0.137 (0.060)
Attitude	0.140 (0.148)	0.304 (0.003)	0.353 (<0.0001)	0.155 (0.035)
Subjective norm (SN)	-0.004 (0.964)	0.169 (0.119)	0.172 (0.049)	-0.139 (0.07)
Perceived behavioural control (PBC)	0.021 (0.823)	0.115 (0.236)	0.172 (0.049)	0.221 (0.003)
Adjusted R <sup>2</sup>	0.022	0.218	0.300	0.073

<sup>a</sup>In the Czech Republic, Q2.37 was not fully responded, and thus, it was omitted in the regression model.