Effects of Demographic Characteristics and Consumer Behavior in the selection of Retail Pharmacies and Over-the-Counter Medicine

Original Paper

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Abstract **Aim:** The study aimed to provide new insights into consumer behaviour by identifying the key demographic factors that influence the choice of pharmacy and over-the-counter (OTC) medicine.

Materials and Methods: A cross-sectional study was conducted in an urban area (Thessaloniki, Greece), surveying a convenience sample of 314 consumers with a structured questionnaire. Data analysis was conducted using the chi-square test, one-way analyses of variance (ANOVAs) and Spearman's rho correlation coefficient.

Results: Respondents with a lower educational level and retired consumers tended to make their purchases in a single pharmacy ($p < 0.001$). Older participants were more likely to consider the pharmacy staff and additional services to be important factors ($p < 0.01$). Students were the only group to prefer a formal relationship with the pharmacy staff ($p < 0.001$). Participants with a lower educational level tended to know exactly what they would buy ($p < 0.05$), whereas women made more unscheduled purchases of OTCs ($p < 0.05$). Respondents with a higher income assigned more importance to the product's country of origin ($p < 0.05$) and manufacturing company ($p < 0.01$) and less importance to the pharmacist's opinion than those of a lower income ($p < 0.05$).

Conclusions: The educational level, occupation and age of consumers have a marked effect in their selection of pharmacy, and along with gender and personal income, in their choice of OTC medicine. Our findings yield implications for the management of community pharmacies.

Keywords Self-medication – OTC – community pharmacy – demographic factors – marketing strategy

INTRODUCTION

Community pharmacies are providers of emergency medication, expert advice and specialist healthcare services. Due to their vital contribution to the community, retail pharmacies have traditionally been protected with heavy regulation in many countries (Schmidt & Pioch, 2004). However, over the past few decades, liberalisation measures have been introduced in several EU member states, leading to a more competitive environment in the community pharmacy sector (Castaldo et al., 2016; Schmidt & Pioch, 2004). Such measures include the reclassification of prescription medications as over the counter (OTC; European Commission, 2014; Martins et al., 2002), the availability of OTC medicine outside of pharmacies and the deregulation of the ownership and establishment rules for community pharmacies (Vogler, 2014). This competitive market environment requires

pharmacies to adjust to the new circumstances, so as to maintain their patronage, attract new clients and develop customer loyalty.

Furthermore, with the pressure set on healthcare systems in the EU and elsewhere by limited resources and an aging population (European Commission, 2014; Krishnan & Schaefer, 2000) that necessitate a more efficient distribution of health resources (European Commission, 2014), the practice of self-care will continue to grow in importance (Krishnan & Schaefer, 2000). This inevitable demographic change will be influencing the need for pharmaceutical products and the landscape of their consumption (Ogura & Jakovljevic, 2014). Self-medication is a modern and increasingly important mode of self-care (Figueiras et al., 2000; Jakovljevic & Souliotis, 2016). It is used in order to relieve, ameliorate, cure or prevent

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the symptoms of various illnesses (Wertheimer & Serradell, 2008) and is conducted, for the most part, by the use of non-prescription or OTC medicine (Dean, 1986). The use of OTC medications is steadily rising (Lessenger & Feinberg, 2008), with half of all medicines sold in the EU having a non-prescription status (European Commission, 2014).

In order for self-care and self-medication to be successful, professional guidance and impartial advice are needed (Krishnan & Schaefer, 2000). The purchase of OTC medicines is consistently performed in community pharmacies (Haramiova et al., 2017). Although as an initial step, individuals will take actions based on their own knowledge and beliefs or seek advice and support from their family and friends, pharmacists still have significant opportunities to provide and support a vast array of health-related questions. That is based on the fact that pharmacists offer a great degree of accessibility to patients (Wertheimer & Serradell, 2008). Thanks to this, the wide distribution of pharmacies across Europe (European Commission, 2014) and the fact that no prior appointment is required (Wertheimer & Serradell, 2008), pharmacists are the first and, sometimes, only health professionals who will assist patients in self-care (European Commission, 2014).

Current information concerning pharmacy customer behaviour is needed in order for community pharmacists to focus their marketing strategy and provide patient-centred service adjusted to the self-medication needs of their consumers. Contemporary data on customer behaviour regarding the factors influencing the choice of pharmacy and the purchase of OTC medicines would be particularly useful as a consumer's purchasing behaviour is mediated by cultural, social and personal factors (Kotler & Keller, 2012). Therefore, information concerning pharmacy and OTC medicine selection in conjunction with demographic information of the consumers is particularly required.

Various studies conducted in different countries have examined the factors influencing customer choice of community pharmacy. Functional attributes relating to the customers' convenience, mainly the pharmacy's location, but also attributes of the pharmacy staff have generally been reported as important factors influencing the selection of pharmacy (Arneson et al., 2011; El Hajj et al., 2011; Gavilan et al., 2014; Kouwenberg & Jaiboon, 2019; Merks et al., 2014; Minarikova et al., 2016a, 2016b; Patterson et al., 2019; Villako & Raal, 2007; Wirth et al., 2010). In addition, the influence of demographic factors such as age, gender, income, occupation and education on pharmacy customer behaviour has been reported in pharmacy literature (Kouwenberg & Jaiboon, 2019; Patterson et al., 2019; Rabbane et al., 2015; Shiyanbola et al., 2016; Villako & Raal, 2007). However, country-specific differences, as well as differences between older and more recent studies, have also been reported with regard to factors that influence the patient's choice of community pharmacy. They mainly concerned the ranking of factor importance (Merks et al., 2014; Patterson et al., 2019).

Several studies have also examined the factors influencing OTC purchases, the offered range of which is widening in community pharmacies in several countries (Castaldo et al., 2016). Both medical factors, including previous experience with the OTC medicines and the pharmacist's recommendations, and business factors, such as familiarity with the name or brand and the OTC medicine's price, have been reported as important factors influencing the consumers' selection of OTC medicines (Chan & Tran, 2016; Habash & Al-Dmour, 2020; Hanna & Hughes, 2011; Lodoros et al., 2006; Paddison & Olsen, 2008; Srivastava & Wagh, 2020; Temechewu, 2020; Wazaify et al., 2005). However, in these studies, the need for contemporary research, due to the dynamic and evolving nature of the OTC market, has been highlighted (Paddison & Olsen, 2008). The international literature is limited when it comes to examining the influence of demographic factors on the OTC medicine's selection; the little available information indicates that demographic characteristics also have an impact on assigning value to OTC products (Paddison & Olsen, 2008).

Within the context of Greece, the literature on the aforementioned topics is much more limited (Kevrekidis et al., 2018), and therefore, it is important to provide such domestic information, which could also be utilised in other comparable countries in terms of healthcare systems, levels of pharmaceutical care, financial situations, liberalisation schemes and so on. In Greece, the value of total drug sales was reduced by 28.2% between 2009 and 2012, as the market's dynamic was halted by the financial crisis (Athanasiadis et al., 2013). As a result of the signing of the Memorandum of Understanding between Greece and its creditors, there were changes in the healthcare sector targeting cost containment measures legislated within very tight timelines, aiming to reduce both the cost and volume of prescribed medicines (Jakovljevic & Souliotis, 2016). This included an expansion of the OTC list and the maintenance of a cap on OTC prices based on the average of the three lowest prices in EU member states, while allowing prices to move downwards (IMF, 2014). The main goal of the present study is to provide new insights into consumer behaviour as it relates to the purchase of OTC products and the selection of pharmacies, in order to contribute to the development of an effective marketing strategy by community pharmacies. In particular, we have investigated the potential influence of demographic factors of the consumers, particularly gender, age, educational level, occupation and personal income, on their selection of community pharmacy and OTC medicines. The present study is an extension of a previous study (Kevrekidis et al., 2018) dealing with customer segmentation in relation to community pharmacy and OTC product criteria; three distinct clusters of pharmacy customers were detected and classified as 'convenience customers' (49%), 'loyal customers' (35%) and 'convenience and price-sensitive customers' (16%). Both studies were conducted in the metropolitan area of Thessaloniki, Greece. This second paper attempts to

answer the following research questions: (1 and 2) How do the demographic characteristics of the consumers relate to their preferences concerning the choice of pharmacy and the purchase of OTC medicine, and which are the key factors affecting their choice? (3) What is the relationship between the factors influencing the choice of pharmacy and the purchase of OTC medicine?

THEORETICAL FRAMEWORK

According to the American Marketing Association, consumer behaviour is defined as 'the dynamic interaction of affect and cognition, behavior, and environment by which human beings conduct the exchange aspects of their lives' (Bennett, 1995). It is the decision-making process and physical activity that occurs during the acquisition, evaluation, use and disposal of goods and services, and it precedes any kind of purchase (Khan, 2006). Consumer behaviour is a vital and necessary topic as its influence affects our daily lives and purchase decisions.

A consumer's typical buying process is described by a five-stage model: (a) Problem recognition: The consumer recognises a need to buy a product. (b) Information search: The consumer attempts to gain knowledge on the product. (c) Evaluation of alternatives: The products which can fulfil the needs are evaluated in terms of plus and minus points. (d) Purchase decision: After consideration of a number of factors, the actual purchase is made from the store. (e) Post-purchase behaviour: How the consumer feels after the use of the product (Khan, 2006).

Problem recognition is the perception of a gap between the existing and the desired consumer position (Khan, 2006). The circumstances that trigger particular needs may be identified by gathering information from a number of consumers (Kotler & Keller, 2012). An information search is the process by which the consumer surveys his or her environment for appropriate data in order to make a reasonable decision (Solomon et al., 2006). An aroused consumer who recognises a problem will be inclined to search for more information. This arousal may be distinguished into two levels of engagement: (a) heightened attention (at the milder search state), in which the consumer simply becomes more receptive to information concerning the product, and (b) active information search level, in which the consumer actively surveys the Internet, talks with friends and visits stores to learn more about the product. A survey regarding painkiller purchasing in the UK has shown that externalised information searching started when the symptoms appeared or when a certain brand was unavailable (Paddison & Olsen, 2008). The information sources may include (a) personal sources, (b) commercial sources, (c) public sources and (d) experiential sources (Kotler & Keller, 2012). The consumer may also consult unbiased third parties or other consumer reports published in various European countries (Beales et al., 1981). The existing knowledge of a consumer on a product may be because on a previous

occasion, they had already searched for relevant information or experienced some of the alternatives (directed learning) or in a passive manner, through exposure to advertising, packaging and sales promotion activities (incidental learning) (Solomon et al., 2006).

Through this stage in the process, the consumer is informed about the various competing brands. From a total set of brands available to the consumer, they will only become aware of some of them (the awareness set). Some of these will meet the consumer's initial buying criteria (the consideration set). And as more information is gathered, only a few strong contenders will remain, the choice set from which the final choice is made (Narayana & Markin, 1975). The company must strategise in order to enter the consumer's awareness, consideration and choice set. Moreover, they must identify other brands in the choice set, so as to plan competitive appeals. The company must also identify the sources of information that the consumer uses and evaluate their relative importance, so that it can prepare a range of effective communications for the target market (Kotler & Keller, 2012). After the information searching, the consumer must make a final value judgement. This is mostly done on a conscious and rational basis (Kotler & Keller, 2012). The choice may be influenced by integrating information from sources such as prior experience with the product, information that was present at the time of the purchase and brand beliefs formed through advertising (Smith, 1993). While evaluating alternatives, the consumer develops a set of brand beliefs about where each brand stands on each attribute. Ultimately, consumers develop various attitudes towards different brand alternatives through an attribute evaluation procedure. A brand which knows how buyers evaluate alternatives and form preferences can influence their consumer behaviour (Kotler & Keller, 2012).

Once the relevant options from a category have been assembled and evaluated, the consumer must choose among them (Putsis & Narasimhan, 1994). The criteria on which products differ from one another carry more weight in the decision process than those where they are similar. Attributes used to differentiate among choices are called determinant attributes. Consumers often form assumptions about brands, products or outlets. These market beliefs become short cuts that guide the consumer's decisions, regardless of their accuracy (Duncan, 1990). A consumer who is engaged in extended problem-solving may carefully evaluate several brands, while someone who makes a habitual decision may not consider any alternatives to their normal brand. Furthermore, more extended processing may occur in situations where negative emotions are aroused by conflicts among the available choices, especially where difficult trade-offs are involved (Solomon et al., 2006).

A consumer's buying behaviour is influenced by personal, cultural and social factors (Kotler & Keller, 2012). Personal characteristics that influence a buyer's decision include age and state in the life cycle, occupation and economic

circumstances, personality and self-concept, lifestyle and values. Many of them have a direct impact on consumer behaviour; so, it is important for marketers to follow them closely. Consumption is also shaped by the family life cycle and the number, age and gender of people in the household at any point in time (Kotler & Keller, 2012). Consumption patterns are also influenced by occupation. Both brand and product choice are greatly affected by economic circumstances such as spendable income (level, stability and time pattern), savings and assets (as well as the percentage of those that is liquid), debts, borrowing power and attitudes towards spending and saving (Kotler & Keller, 2012). Consumers are also influenced by their core values, the belief systems that underlie their attitudes and behaviours. They go much deeper than behaviour or attitude and determine people's choices and desires over the long term at a basic level.

Culture is a fundamental determinant of a person's wants and behaviour, and cultural factors have the broadest and deepest influence towards a consumer's buying behaviour (Kotler & Keller, 2012). Groups with a direct influence are called membership groups (Khan, 2006; Kotler & Keller, 2012). Some of them are primary groups with whom the consumer interacts fairly continuously and informally, like family, friends, neighbours and co-workers (Kotler & Keller, 2012). Some are secondary groups, such as religious, professional groups that tend to be more formal and require less interaction (Kotler & Keller, 2012). They have lower frequency of contact and are not so closely knit (Khan, 2006). The family is a closely knit social group and an earning, consuming and decision-making unit, being the most immediate and pervasive influence on decision-making. Family members are the most influential primary reference group and have effects on all purchase decisions (Khan, 2006; Moore et al., 2002). They must fulfil not only their individual needs, but also their shared needs by drawing on a common and shared, relatively fixed supply of sources (Khan, 2006). Because the bonds in a family are more powerful than they are in other groups, a reciprocal influence acts in all family decisions. Every member of the family has his or her own motives, beliefs and predisposition and influences and is affected by other family members in the decision process. Interactions take place in a family that develop tastes, preferences, shopping styles, how much money to spend, where to buy from, what to use at which occasions and so on (Khan, 2006).

Background factors like age, sex, social class and others exist. There are also socialising agents from whom young people learn, such as the media, family members (through instrumental training, modelling and mediation), peers and teachers. Moreover, advertising and promotional activities have a strong influence on consumer socialisation. These influence the learning mechanism and result in a socialised consumer (Khan, 2006).

METHODS

Study Design and Data Collection

A cross-sectional study was conducted between February and March of 2016 in a convenience sample of consumers recruited in the metropolitan area of Thessaloniki. A total of 314 consumers were surveyed (approximately 0.1% of the target population) via anonymous, face-to-face interviews using a structured written questionnaire. The interviews were typically conducted during weekdays from 9 am to 3 pm and from 6 pm to 9 pm in public spaces (shopping malls, public transportation stations, etc.) and written consent was obtained from all participants. The sample was stratified by age and employment status, per the results of the 2011 Population and Housing Census for this administrative region (ELSTAT, 2014). The differences in the distribution of age and employment status between the study sample and the target population were minor; there was a notable difference in regard to gender, but this is consistent with the fact that women are more likely to go shopping and tend to make more frequent OTC purchases. Ten questionnaires were excluded due to invalid or incomplete answers and four due to uniform questionnaire scores. The final sample comprised 300 participants: 185 (61.7%) female and 115 (38.3%) male respondents.

Survey Instrument

The main instrument used for data collection was a structured questionnaire with close-ended, multiple-choice questions. The instrument was developed by the first author following an in-depth review of the literature concerning consumer behaviour as it pertains to the selection of community pharmacies (Arneson et al., 1989; Boström, 2011; Merks et al., 2014; Villako & Raal, 2007; Wirth et al., 2010) and the purchase of OTC medicines (Boström, 2011; Gyaneshwari, 2015; Lodorfos et al., 2006; Paddison & Olsen, 2008; Wazaify et al., 2005). The content and face validity of the questionnaire were assessed by an independent panel of three specialists in pharmacy management and organisation. Three questions were revised for ease of comprehension and clarity and further assessed by a convenience sample of nine adults recruited at a shopping mall in Thessaloniki. The pilot phase responses were not included in the study results. The final version of the instrument comprised of three sections (available upon request from the first author).

The first section collected the demographic information of the participants (gender, age, educational level, employment status, personal income). The second section contained questions regarding the consumers' choice of pharmacy. The participants were asked to answer multiple-choice, close-ended questions regarding their tendency to make purchases in a single pharmacy and their desired relationship

Table 1. Spearman's correlations among factors influencing (a) the choice of pharmacy and (b) the purchase of OTC medicine.

(a) Pharmacy criteria	1	2	3	4	5	6	7	8
The pharmacy's location (1)	-							
The pharmacy staff (2)	0.29**	-						
The product range (3)	0.26**	0.25**	-					
The additional services (4)	0.15**	0.25**	0.40**	-				
The membership programme (5)	0.04 ^{ns}	0.21**	0.22**	0.46**	-			
Anonymity/confidentiality (6)	0.11 ^{ns}	0.35**	0.30**	0.29**	0.22**	-		
The store's atmosphere (7)	0.22**	0.40**	0.39**	0.35**	0.21**	0.41**	-	
The opening hours (8)	0.30**	0.19**	0.21**	0.21**	0.18**	0.22**	0.27**	-
(b) OTC product criteria	1	2	3	4	5	6	7	8
The drug's country of origin (1)	-							
The manufacturing company (2)	0.77**	-						
Packaging (3)	0.36**	0.38**	-					
Experience of a previous use (4)	0.26**	0.28**	0.13*	-				
The product's advertisement (5)	0.01 ^{ns}	0.06 ^{ns}	0.29**	0.11 ^{ns}	-			
The pharmacist's opinion (6)	0.05 ^{ns}	0.06 ^{ns}	0.02 ^{ns}	0.18**	0.13*	-		
Family's/friends' opinion (7)	0.01 ^{ns}	0.06 ^{ns}	0.17**	0.10 ^{ns}	0.38**	0.21**	-	
The product's price (8)	0.07 ^{ns}	0.09 ^{ns}	0.19**	0.05 ^{ns}	0.00 ^{ns}	0.30**	0.15**	-

* $p < 0.05$, ** $p < 0.01$, *ns*: not significant at 0.05 level.
OTC: over the counter

to the pharmacy staff and to rate, on a five-level Likert-type scale, their agreement with statements regarding the degree that certain pharmacy factors (location, staff, product range, additional services, membership programmes, anonymity/confidentiality, atmosphere, opening hours) affect their selection of pharmacy. The third section concerned the selection of OTC medicine. It contained multiple-choice questions assessing the confidence, spontaneity and specificity of the consumer's selection. Finally, the participants were asked to indicate the degree to which each of eight factors (the product's country of origin, manufacturing company, packaging, experience of previous use, advertisement, pharmacist's opinion, family or friends' opinion, price) affected their purchase of OTC medicines.

Data Analysis

The relationships between the demographic characteristics of the participants and their choice of pharmacy, as well as their purchase preferences of OTC medicine (research questions 1 and 2) were assessed using the chi-square test followed by Cramer's V , one-way analysis of variance (ANOVA) with Tukey's post hoc test and Spearman's rho correlation coefficient, where appropriate. Effect sizes for ANOVA were calculated with eta squared (η^2), where 0.01 represents a small effect size, 0.06 a medium effect size and 0.14 a large effect size. Spearman's correlation coefficients were computed to identify the inter-correlations among factors influencing the

choice of pharmacy and OTC products (research question 3; Table 1). All tests were two tailed, and the significance level was set at 5%. Statistical analyses were performed using the IBM Statistical Package for Social Science statistics software, version 21.

RESULTS

Inter-correlations Among Factors Influencing the Choice of Pharmacy and Purchase of Otc Medicine

The relationships among the factors influencing the choice of pharmacy and the factors influencing the purchase of OTC medicine (research question 3) were examined. Table 1 presents the Spearman's inter-correlations among the factors influencing the choice of pharmacy. All values were positive and ranged from very low to moderate. The highest correlations were observed between the following pairs of factors: membership programme and additional services that are provided, $\rho(300) = 0.46$, $p < 0.01$; the store's atmosphere and anonymity/confidentiality, $\rho(300) = 0.41$, $p < 0.01$; the store's atmosphere and pharmacy staff, $\rho(300) = 0.40$, $p < 0.01$; the store's atmosphere and the product range, $\rho(300) = 0.39$, $p < 0.01$; and the additional services and the product range, $\rho(300) = 0.40$, $p < 0.01$.

The correlations among factors influencing the purchase of OTC medications are shown in Table 1. The strongest correlation was found between the product's country of

origin and the manufacturing company, $\rho(300) = 0.77$, $p < 0.01$. The packaging was found to moderately correlate with both the product's country of origin, $\rho(300) = 0.36$, $p < 0.01$, and the manufacturing company, $\rho(300) = 0.38$, $p < 0.01$. Moreover, family's/friends' opinion was also found to moderately correlate with the product's advertisement, $\rho(300) = 0.38$, $p < 0.01$.

Effect of the Demographic Characteristics of the Participants on the Choice Of Pharmacy

While examining the differences in the choice of pharmacy and the factors influencing this choice in relation to the demographic characteristics of the participants (research question 1), statistically significant relationships emerged for their educational level, occupation and age and are reported in detail below.

The relationship between the participants' educational level and answers to the question, 'I tend to make my purchases in a single pharmacy', was found to be statistically significant ($\chi^2(10) = 24.90$, $p = 0.006$, Cramer's $V = 0.29$) (Table 2). Those who have completed primary school or lower secondary (gymnasium) reported that they always favour making their purchases in a single pharmacy (73.3% and 46.7%, respectively). On the contrary, respondents with higher completed levels of education tend to do so as well, but only most of the time (45.5%–56%).

The relationship between occupation and answers to the question, 'I tend to make my purchases in a single pharmacy', was found to be statistically significant ($\chi^2(12) = 68.41$, $p < 0.001$, Cramer's $V = 0.338$) (Table 2). A significant percentage of students (40%), unemployed people (44.1%) and part-time workers (40%) tend to make their purchases in various pharmacies. This is in contrast to the frequency of retired people who always made their purchases in a single pharmacy (61.9%).

A significant relationship was also observed between the participants' occupation and their reported relationship with the pharmacy staff ($\chi^2(12) = 47.08$, $p < 0.001$, Cramer's $V = 0.281$). Students strongly preferred their relationship to be formal (80.0%), while others mostly wanted it to be familiar (Table 2).

The importance of the pharmacy staff was found to be significantly different across educational levels ($F(5, 296) = 2.76$, $p = 0.019$, $\eta^2 = 0.02$). Tukey's post hoc test revealed that the pharmacy staff is significantly more important to consumers who have completed gymnasium (lower secondary) (4.55) and attained a doctorate (4.50) than to those who have undergraduate-level (3.95) education (Table 3).

Results also revealed statistically significant differences in the importance of the pharmacy staff across occupations ($F(6, 298) = 7.41$, $p < 0.001$, $\eta^2 = 0.05$). Post hoc tests revealed that retired consumers (4.63) and homemakers (4.33) consider the pharmacy staff as a significantly more important factor than students (3.60), unemployed (3.63), part-time workers (3.90),

full-time workers (4.18) and self-employed respondents (3.83) (Table 3).

Spearman's ρ correlations were calculated between age and the eight factors affecting the choice of pharmacy. Low to moderate positive correlations were observed between age and the pharmacy staff, $\rho(299) = 0.32$, $p < 0.01$, and between age and additional services that are provided, $\rho(298) = 0.19$, $p < 0.01$. Therefore, older participants tend to rate these factors as significantly more important than younger participants.

Effect of the Demographic Characteristics of the Participants on the Purchase of Otc Medicine

This section summarises the purchase preferences of OTC medicines and the factors influencing this purchasing behaviour in relation to the demographic characteristics of the participants (research question 2).

A significant relationship was observed between the participants' educational level and purchase patterns of OTC medicine ($\chi^2(10) = 22.90$, $p = 0.011$, Cramer's $V = 0.197$). A vast majority of primary school graduates (80%) reported that they know exactly what they need when they purchase OTC medicine, in comparison with respondents of other educational levels who are evenly split between those who know 'exactly' and those who know 'approximately' what they need (Table 2).

A significant relationship was found between gender and unscheduled purchases of OTC medicine ($\chi^2(2) = 6.32$, $p = 0.042$, Cramer's $V = 0.146$). As shown in Table 2, most female respondents tend to sometimes make unscheduled purchases of OTCs (52.5%), whereas most male respondents tend to never do so (55.3%).

There is a marginal statistically significant relationship between occupation and answers to the question, 'When I am in a pharmacy, I tend to make unscheduled purchases of OTC medicine' ($\chi^2(12) = 21.25$, $p = 0.047$, Cramer's $V = 0.189$). More specifically, the majority of homemakers (59.5%) and part-time workers (60.0%) reported that they sometimes make unscheduled purchases of OTC medicine, whereas the majority of retired people (56.6%) claimed that they never tend to do so (Table 2).

The importance attributed to the product's advertisement, as a factor that potentially influences the purchase of OTC medicine (Table 3), was statistically significantly different across occupations ($F(6, 299) = 2.15$, $p = 0.048$, $\eta^2 = 0.01$). Tukey's post hoc test revealed that this factor is considered significantly more important by full-time workers (3.28) than self-employed participants (2.33).

In addition, the results of ANOVA indicated significant differences in the importance given to the pharmacist's opinion across different occupation levels ($F(6, 298) = 2.93$, $p = 0.009$, $\eta^2 = 0.02$). Tukey's post hoc tests revealed that homemakers (4.52) and retired respondents (4.47) consider this factor as significantly more important than students

Table 2. (a) Tendency to make purchases in a single pharmacy across educational level and occupation; (b) relationship with the pharmacy staff across occupation; (c) purchase patterns of over-the-counter medicine across educational level; (d) unscheduled purchases of over-the-counter medicine across gender and occupation.

(a) 'I tend to make my purchases in a single pharmacy'				
Educational level	Yes, always	Yes, most of the time	No, I make my purchases in various pharmacies	Total
Primary school	11 (73.3%)	3 (20.0%)	1 (6.7%)	15 (100.0%)
Gymnasium (lower secondary)	21 (46.7%)	19 (42.2%)	5 (11.1%)	45 (100.0%)
Lyceum (upper secondary)	32 (29.1%)	50 (45.5%)	28 (25.5%)	110 (100.0%)
University	24 (26.7%)	41 (45.6%)	25 (27.8%)	90 (100.0%)
Post-graduate	3 (12.0%)	10 (56.0%)	8 (32.0%)	25 (100.0%)
Doctorate	3 (25.0%)	6 (50.0%)	3 (25.0%)	12 (100.0%)
Total	94 (31.6%)	133 (44.8%)	70 (23.6%)	297 (100.0%)
Occupation	Yes, always	Yes, most of the time	No, I make my purchases in various pharmacies	Total
Student	1 (6.7%)	8 (53.3%)	6 (40.0%)	15 (100.0%)
Unemployed	5 (14.7%)	14 (41.2%)	15 (44.1%)	34 (100.0%)
Homemaker	14 (34.1%)	18 (43.9%)	9 (22.0%)	41 (100.0%)
Part-time worker	4 (20.0%)	8 (40.0%)	8 (40.0%)	20 (100.0%)
Full-time worker	16 (18.4%)	46 (52.9%)	25 (28.7%)	87 (100.0%)
Self-employed	3 (16.7%)	10 (55.6%)	5 (27.8%)	18 (100.0%)
Retired	52 (61.9%)	30 (35.7%)	2 (2.4%)	84 (100.0%)
Total	95 (31.8%)	134 (44.8%)	70 (23.4%)	299 (100.0%)
(b) 'Regarding my relationship with the pharmacy staff'				
Occupation	I want it to be familiar	I want it to be formal	I don't want the staff to recognise me	Total
Student	3 (20.0%)	12 (80.0%)	0 (0.0%)	15 (100.0%)
Unemployed	17 (50.0%)	14 (41.2%)	3 (8.8%)	34 (100.0%)
Homemaker	28 (68.3%)	11 (26.8%)	2 (4.9%)	41 (100.0%)
Part-time worker	13 (65.0%)	7 (35.0%)	0 (0.0%)	20 (100.0%)
Full-time worker	57 (65.5%)	25 (28.7%)	5 (5.7%)	87 (100.0%)
Self-employed	13 (72.2%)	5 (27.8%)	0 (0.0%)	18 (100.0%)
Retired	75 (89.3%)	7 (8.3%)	2 (2.4%)	84 (100.0%)
Total	206 (68.9%)	81 (27.1%)	12 (4.0%)	299 (100.0%)
(c) 'When I purchase an over-the-counter drug, I usually'				
Educational level	I know exactly what I need	I know approximately what I need	I don't know what I need	Total
Primary school	12 (80.0%)	0 (0.0%)	3 (20.0%)	15 (100.0%)
Gymnasium (lower secondary)	23 (51.1%)	21 (46.7%)	1 (2.2%)	45 (100.0%)
Lyceum (upper secondary)	57 (51.4%)	49 (44.1%)	5 (4.5%)	111 (100.0%)
University	42 (48.3%)	43 (49.4%)	2 (2.3%)	87 (100.0%)
Post-graduate	14 (56.0%)	11 (44.0%)	0 (0.0%)	25 (100.0%)
Doctorate	7 (58.3%)	5 (41.7%)	0 (0.0%)	12 (100.0%)
Total	155 (52.5%)	129 (43.7%)	11 (3.7%)	295 (100.0%)

Continued Table 2. (a) Tendency to make purchases in a single pharmacy across educational level and occupation; (b) relationship with the pharmacy staff across occupation; (c) purchase patterns of over-the-counter medicine across educational level; (d) unscheduled purchases of over-the-counter medicine across gender and occupation.

(d) 'When I am in a pharmacy, I tend to make unscheduled purchases of over-the-counter drugs'				
Gender	Yes, often	Yes, sometimes	No, never	Total
Female	8 (4.4%)	96 (52.5%)	79 (43.2%)	183 (100.0%)
Male	8 (7.0%)	43 (37.7%)	63 (55.3%)	114 (100.0%)
Total	16 (5.4%)	139 (46.8%)	142 (47.8%)	297 (100.0%)
Occupation	Yes, often	Yes, sometimes	No, never	Total
Student	0 (0.0%)	7 (46.7%)	8 (53.3%)	15 (100.0%)
Unemployed	4 (12.1%)	14 (42.4%)	15 (45.5%)	33 (100.0%)
Homemaker	5 (11.9%)	25 (59.5%)	12 (28.6%)	42 (100.0%)
Part-time worker	1 (5.0%)	12 (60.0%)	7 (35.0%)	20 (100.0%)
Full-time worker	0 (0.0%)	42 (48.8%)	44 (51.2%)	86 (100.0%)
Self-employed	1 (5.6%)	8 (44.4%)	9 (50.0%)	18 (100.0%)
Retired	5 (6.0%)	31 (37.3%)	47 (56.6%)	83 (100.0%)
Total	16 (5.4%)	139 (46.8%)	142 (47.8%)	297 (100.0%)

(3.93), self-employed (4.00) and unemployed respondents (4.05) (Table 3).

The importance of the product's country of origin was found to be significantly different across levels of monthly personal income ($F(5, 297) = 2.78, p = 0.018, \eta^2 = 0.02$). Tukey's post hoc tests showed that the product's country of origin is significantly more important to respondents with an income of 801–1200 € (3.93) than to those with an income below 400 € (3.39) (Table 4).

Furthermore, significant difference was found in the importance attributed to the product's manufacturing company across income levels ($F(5, 296) = 4.03, p = 0.001, \eta^2 = 0.04$). Tukey's post hoc tests indicated that respondents with a higher income (more than 801 €) tend to consider the medicine's manufacturing company as more important than those with a lower income (less than 800 €) (Table 4).

Finally, the results of ANOVA suggested the existence of significant differences in the importance attributed to the pharmacist's opinion across income levels ($F(5, 298) = 2.41, p = 0.036, \eta^2 = 0.02$). Tukey's post hoc tests revealed that respondents with an income between 400 and 1200 € consider this factor as more important than those with an income between 1201 and 1600 € (Table 4).

Moreover, a low negative correlation was found between age and the product's advertisement ($\rho(300) = -0.14, p < 0.05$) and a positive correlation between age and the pharmacist's opinion ($\rho(299) = 0.22, p < 0.01$).

DISCUSSION

Effect of the Demographic Characteristics of the Participants on the Choice of Pharmacy

The results presented indicate that in the urban area of Thessaloniki, Greece, pharmacy customer behaviour regarding the choice of pharmacy is influenced by demographic factors, particularly age, occupation and education. In agreement with our findings, in the pharmacy literature, pharmacy customer behaviour has been reported to be greatly influenced by demographic factors (Castaldo et al., 2016; Kouwenberg & Jaiboon, 2019; Rabbane et al., 2015; Shiyanbola et al., 2016).

A recent study suggests that a large portion of the urban residents of Thessaloniki have established customer loyalty to a specific community pharmacy (77%), as well as a preference for a familiar relationship with the pharmacy staff (69%) (Kevrekidis et al., 2018). The results of the present study suggest that, among these consumers, retired consumers and consumers of low educational level particularly display a significantly higher level of customer loyalty to a particular pharmacy.

These findings are compatible with past literature indicating high pharmacy patronage among elderly customers (Rabbane et al., 2015). This, in turn, may suggest that the relationship between the pharmacist and elderly customers is trusting. The customer–pharmacist interpersonal relationship has been reported to be critical in the retail pharmacy sector (Antunes et al., 2015; Athavale et al., 2015; Castaldo et al., 2016; Minarikova et al., 2016b), especially with regard to elderly customers (Shiyanbola et al., 2016).

Table 3. Importance of the (a) pharmacy staff in the choice of pharmacy across educational level and occupation, importance of the (b) product's advertisement and the (c) pharmacist's opinion in the choice of over-the-counter medicine across occupation.

Variable	Educational level	n	Mean	SD
(a) Pharmacy staff	Primary school	15	4.33	1.39
	Gymnasium (lower secondary)	45	4.55	0.69
	Lyceum (upper secondary)	110	4.20	0.92
	University	90	3.95	1.06
	Post-graduate	25	4.16	0.80
	Doctorate	12	4.50	0.52
	Total	297	4.19	0.96
	Occupation			
(a) Pharmacy staff	Student	15	3.60	1.12
	Unemployed	33	3.63	1.24
	Homemaker	42	4.33	0.75
	Part-time worker	20	3.90	0.91
	Full-time worker	87	4.18	0.99
	Self-employed	18	3.83	0.78
	Retired	84	4.63	0.67
	Total	299	4.20	0.96
	Occupation			
(b) Product's advertisement	Student	15	2.93	1.22
	Unemployed	34	2.82	1.35
	Homemaker	42	2.92	1.31
	Part-time worker	20	3.05	1.23
	Full-time worker	87	3.28	1.04
	Self-employed	18	2.33	1.13
	Retired	84	2.84	1.19
	Total	300	2.97	1.20
(c) Pharmacist's opinion	Student	15	3.93	0.59
	Unemployed	34	4.05	0.98
	Homemaker	42	4.52	0.77
	Part-time worker	20	4.20	0.69
	Full-time worker	86	4.31	0.77
	Self-employed	18	4.00	0.76
	Retired	84	4.47	0.71
	Total	299	4.31	0.78

SD: standard deviation

The observation that students strongly preferred for their relationship with the pharmacy staff to be formal, as opposed to the remaining respondents, could be attributed to a lack of interest for a familiar relationship due to their age difference with the staff or the fact that these younger consumers tend to be healthier. By not having to manage as many chronic conditions, the members of this demographic segment are less likely to constitute regular pharmacy customers or to

have a strong motivation to establish a good rapport with the pharmacist.

The pharmacy's location, opening hours, pharmacy staff and anonymity/confidentiality have previously been reported to be among the most important factors that influence the choice of pharmacy of residents of the metropolitan area of Thessaloniki, whereas the availability of a membership programme, the provision of additional services, the

Table 4. Importance of the (a) product's country of origin, (b) manufacturing company and (c) the pharmacist's opinion in the choice of over-the-counter medicine across income level.

Variables	Income	n	Mean	SD
(a) Product's country of origin	Under 400 €	86	3.39	1.22
	400–800 €	96	3.48	1.20
	801–1200 €	77	3.93	1.13
	1201–1600 €	24	3.91	0.88
	1601–2000 €	9	3.55	1.13
	Over 2000 €	6	4.33	0.81
	Total	298	3.63	1.17
(b) Product's manufacturing company	Under 400 €	86	3.29	1.28
	400–800 €	95	3.24	1.26
	801–1200 €	77	3.87	1.03
	1201–1600 €	24	3.87	0.89
	1601–2000 €	9	3.88	1.16
	Over 2000 €	6	4.16	0.98
	Total	297	3.50	1.20
(c) Pharmacist's opinion	Under 400 €	86	4.18	0.86
	400–800 €	96	4.44	0.73
	801–1200 €	78	4.42	0.71
	1201–1600 €	24	4.04	0.75
	1601–2000 €	9	4.22	0.83
	Over 2000 €	6	3.83	0.98
	Total	299	4.31	0.78

SD: standard deviation

product range and the store's atmosphere are among the least important (Kevrekidis et al., 2018). The results of the present study indicate that the importance of the pharmacy staff's quality for the choice of pharmacy depends on the demographic characteristics of consumers in Thessaloniki; in particular, this criterion appeared to be the most important for elderly consumers, consumers of low and high educational level, as well as retired consumers and homemakers.

The above findings, which seem to be incongruous with regard to the educational level, could possibly be interpreted as consumers of different demographic characteristics emphasising different aspects of the quality of the pharmacy staff. This explanation is supported by the findings of earlier studies, which illustrated that consumers of different demographic categories favour different aspects of the pharmacy staff quality (Shiyanbola et al., 2016; Villako & Raal, 2007). For instance, older adults identify a quality pharmacy as one in which the pharmacist provides patient-centred care (Shiyanbola et al., 2016). Quick service has been found to be

valued by younger customers, with that appraisal decreasing with age (Villako & Raal; 2007).

The observation that the perceived importance of additional services that are offered by the pharmacist appears to increase with the consumers' age could be related to the fact that the elderly might have a growing demand for pharmaceutical services due to age-related health challenges (Francis et al., 2005; Pelicano-Romano et al., 2015).

The perceived importance of the pharmacy's atmosphere was found to intercorrelate with that of the provision of anonymity and confidentiality, the pharmacy staff and the available range of products. The pharmacy staff (El Hajj et al., 2011; Merks et al., 2014; Villako & Raal, 2007; Wirth et al., 2010) and the provision of a good range of products and services (El Hajj et al., 2011; Villako & Raal, 2007) have been independently shown to be among the primary factors of pharmacy choice, and both functional experience and hedonic experience factors have been found to positively correlate with consumer satisfaction and with loyalty and purchases (Gavilan et al., 2014). Castaldo et al. (2016) have also found that equivalent retail-level levers, such as the store's environment, the product assortment and communication, indirectly influence trust in pharmacies. Therefore, these may simply be factors that are consistently valued by consumers who seek pharmacies that can inspire their loyalty. Alternatively, the pharmacy's layout and atmosphere could be set up in such a way as to make finding sought products or products of interest more convenient (Emmett et al., 2006), achieve privacy (Hattingh et al., 2015) and encourage communication (De Vera et al., 2018).

An inter-correlation between the provision of additional services and a membership programme was also found. Both features could reward health-conscious regular customers, the former in terms of continuous lifestyle management and the latter in terms of incentivising repeat purchases, possibly of self-medication products, both of which can be broadly tied to self-care.

Effect of the Demographic Characteristics of the Participants on the Purchase Of Otc Medicine

Kevrekidis et al. (2018) investigated the consumers' preferences concerning the selection of OTC medicines in the metropolitan area of Thessaloniki and noted the reported tendency of about half of the respondents to know exactly what they need when purchasing OTC medicines and of most of them to 'never' or only 'sometimes' make unscheduled OTC purchases, as well as frequently favouring a specific product from a certain OTC medicine category. The results of the present study, in accordance with preceding information (Paddison & Olsen, 2008), indicate that the demographic characteristics of these consumers influence their perception of OTC products.

In particular, the results presented indicate that the respondents who had only completed primary school and

retired participants were more decisive consumers than those of higher educational levels, with their vast majority claiming that they know exactly what product they need during their shopping. When taken at face value, this decisiveness appears to be counterintuitive and incompatible with the fact that educated people are more knowledgeable and competent in making OTC purchase choices as well as less likely to trust their physicians (Figueiras et al, 2000), as well as with literature that indicates that a higher level of education is a predictor of direct product requests (Collins et al., 2020). Nevertheless, as these patients with a higher education are more likely to self-medicate when suffering from an acute disorder (Figueiras et al., 2000), they may also simply be more willing to experiment with their purchases while engaging in self-care behaviours and being more open to a wider variety of OTC products, including ones with which they have no prior experience.

While participants tend not to make completely compulsive OTC purchases (Kevrekidis et al., 2018), women were more likely to do so, as they reported a higher likelihood of making unscheduled purchases of OTC medicines. This is in line with the fact that women are more self-care oriented (Papakosta et al., 2014), and that they use more types of medicines (Zadoroznyj & Svarstad, 1990). Additionally, self-medication is more prevalent among them (Figueiras et al, 2000; Ya-Ning, 2006). While there is little consensus in the literature about why it is so, there may be biomedical, social (Zadoroznyj & Svarstad, 1990) and cultural elements (Figueiras et al., 2000) that factor into this tendency.

According to Kevrekidis et al. (2018), the most influential factors in the purchase of OTC medicines for the residents of the urban area of Thessaloniki are experience of previous use and the pharmacist's opinion, followed by product price, the product's country of origin and manufacturer; on the contrary, the packaging, the product's advertisement and the opinion of friends or family were reported as the least important factors in an OTC purchase. The results of the present study indicate that respondents with higher incomes tend to place more importance on a product's country of origin and manufacturing company than those in lower brackets. It would appear that by judging such non-medical product features, they are looking for a more premium and reputable product, or at the very least take more care in finding a 'proper' one. The country of origin has been reported to drive purchase decisions (Kauppinen-Räsänen et al., 2012; Sanyal & Datta, 2011; Temechewu, 2020). A domestic company would especially act as a risk reduction cue (Pecotich & Ward, 2007). A study conducted in Finland showed that between two equally priced choices, consumers would choose the domestic product (Honkanen, 2013). Moreover, well-known brands associated with high perceived quality can also act as risk reduction cues in OTC drugs (Aufegger et al., 2021).

In addition, the product's country of origin, manufacturing company and packaging appeared to be interrelated attributes of OTC product choice. A drug's package identifies the country and company by displaying their information and

can also serve as a means for the aforementioned search for a reputable product, with the consumers essentially 'judging a book by its cover'.

The pharmacist's opinion, which is a medical criterion, carried more weight with low-to-middle income brackets, instead. One aspect of this might be the role that pharmacists play by recommending cheaper products to price-sensitive consumers (Ricks & Mardanov, 2012). Nevertheless, homemakers and retirees appeared to value the pharmacist's opinion more than students, self-employed and unemployed consumers. Considering the latter, the association between occupation and the importance of the pharmacist's opinion could not be exclusively linked to price-sensitive consumers. Homemakers and retirees are largely made up of older consumers, and therefore, the previously described relationship of trust between pharmacists and older consumers, who have a reported preference towards patient-centred care (Shiyanbola et al, 2016), could play a role in rendering homemakers and retired consumers more receptive towards the pharmacist's opinion. Self-employed workers were also more likely to discount the importance of the product's advertisement, another external source that could impact the information search stage of the buyer decision process.

The product's advertisement moderately correlated with the opinion of family and friends. This could be the case of laymen, without previous experience with a certain product, seeking information from such sources, which may not come from caregivers, but are nonetheless easily accessible. The desired impact of a direct-to-consumer advertisement of an OTC is dependent on whether the ad was informative (Spake & Joseph, 2007). These advertisements could function by supporting the word of mouth that has already been received by family and friends. For interviewees of Paddison and Olsen (2008), the consumer's interpersonal communication with family and friends was vital due to its credibility and empathy. In fact, some preferred certain painkillers due to a sense of family tradition. For them, the effect of advertisements was that of reinforcement rather than conversion to a different brand.

Loyalty appears to develop through time and interaction with the pharmacy staff themselves, as consumers tended to appreciate them and trust the pharmacist's opinion more, the older they get. With age comes increased morbidity, an increasing tendency to visit the pharmacy as well as increased importance of additional services; consumers undergo point-of-care testing (such as glucose, cholesterol and blood pressure measurements). A previous study has found that younger community pharmacy customers (<40 y.o.) were more likely to exhibit information-seeking behaviour prior to visits to the pharmacy (Burghle et al., 2020). This cohort may rely less on the pharmacy staff's input into self-care decisions or the choice of OTC products, and therefore value it less than older customers. There was a low negative correlation between respondent age and the product's advertisement.

The younger the people were, the more they relied on advertisements. A survey by Paddison and Olsen (2008) found that younger consumers are more likely to recount adverts.

MANAGERIAL IMPLICATIONS

As noted earlier, the most important factors for pharmacy and OTC medicine selection for the Thessaloniki sample as a whole are the pharmacy's location, opening hours, staff and experience of previous use, the pharmacist's opinion and product price, respectively (Kevrekidis et al., 2018). In the context of a pharmacy looking to develop a marketing strategy that focuses on attracting and maintaining customers on the basis of their demographic characteristics, the manager is facing a conundrum on whether to focus on developing the loyalty and maintaining the patronage of demographic groups who already make their purchases in a single pharmacy, such as older, retired consumers with a lower educational level or to, in competition with other pharmacies, court groups which are comparatively more likely to make purchases in various pharmacies, such as students, unemployed, part-time employed consumers and those who have attained higher educational status. It could be argued that the former should act as a foundation of loyal consumers and that the latter should be more actively pursued so as to expand the establishment's patronage. In addition, groups that are less certain in their purchases and relatively more likely to make unscheduled sales of OTC products, such as women, homemakers, part-time workers and those who have graduated from secondary education or higher, could be the object of managerial focus, in order to increase the volume of OTC product sales.

Emphasis should be placed on the pharmacy staff's quality and ability to offer an interaction that focuses on the patient's needs and helps build a rapport of familiarity in order to facilitate the patronage of the elderly. The pharmacist's advice for OTC medicines should be integrated into this interaction, and additional services should be made available. Efforts made to attract younger consumers and students could focus on the OTC medicine's advertisement and quicker and more formal service.

A pharmacy marketing plan directed towards women and other groups, such as homemakers and part-time workers who are more likely to make unscheduled OTC purchases, should consider expanding the product range of OTC medicines, while to engage consumers of both low and post-graduate educational level, the pharmacy staff's quality should be prioritised.

Retired consumers and homemakers could be drawn by focusing on the pharmacy staff and the pharmacist's advice for OTC medicine selection. OTC medicine advertisements could be utilised to attract full-time workers.

Finally, the pharmacy marketing plan to attract and develop loyalty among consumers of lower personal income should consider the integration of pharmacist advice for OTC medicines, and for those with higher income, to have available products of known brands, possibly non-generic, and domestic, or of other countries of origin that are considered to be more reputable among consumers.

CONCLUSIONS

In conclusion, the results presented indicate that demographic characteristics can potentially influence the consumer behaviour of community pharmacy customers. In particular, age, occupation and the educational level of consumers appear to have a marked effect on their preferences regarding the selection of pharmacy, and along with gender and personal income, on their preferences regarding the selection of OTC medicines.

The present study provides insight into the consumer behaviour of community pharmacy customers. Our findings could be utilised in order for community pharmacies within a competitive market environment to develop an effective marketing strategy for engaging new clients, maintaining their patronage and developing customer loyalty. Future research could investigate consumer behaviour in the general population of Greece and in other countries comparable in terms of healthcare systems and economic frameworks, by helping to generalise the results and extract safer conclusions. Further investigation could, in the context of developing efficient and effective community pharmacy marketing strategies, take the rate of self-medication usage and self-care orientation as well as their relationship to demographic characteristics into account. It would also be of interest to further explore what kind of qualities or behaviours from the pharmacy staff facilitate better care, self-medication outcomes and customer satisfaction and whether these differ among demographic groups.

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