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Full Length Research paper

A study on patients willingness to pay for blood pressure measurement in community pharmacy in Bulgaria

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The Bulgarian primary healthcare system was faced by a number of challenges: The demands of an aging population, the growing strain on the primary healthcare services and a change in the daily activities of pharmacy and other primary healthcare professionals. These changes for community pharmacist are reflected more generally in contributing to accessible and efficient primary healthcare services, known as value-added pharmacy services. The aim of our study was to assess the amount of money that the visitors and patients in community pharmacy in Bulgaria are willing to pay (WTP) for a measurement of their blood pressure. A direct face-to-face interview was conducted during two months in 2011. WTP for value-added service – measuring of the blood pressure was assessed in 100 visitors and patients of community pharmacies. Collected data were then processed to statistical analysis. The results show that respondents are willing to pay a small rate of 2 (two) BGN equivalent to near 1 EUR for this service. In general, our study of WTP for measuring blood pressure in community pharmacy showed that the service is not acceptable as value-added pharmacy services (VAPS) and WTP rate is modest.

Key words: Willingness-to-pay, blood pressure, value-added pharmacy services, pharmacy.

INTRODUCTION

Cardiovascular diseases (CVD) are the leading cause of morbidity and mortality in the World, the European Union and Bulgaria (WHO, 2010; Allender et al., 2008; Griva and Dikova, 2010). Promoting healthy lifestyle and taking control over the risk factors are the essential actions for breaking this negative trend.

Over the last 2 decades, pharmacists have been documenting their ability to address the needs of ambulatory patients through successful integration of enhanced community practice models throughout the United States and European Union (Posey, 2003; Barber et al., 1994).

Value-added pharmacy services (VAPS) are all additional activities taken by a pharmacist and do not include actions related to the provision of medicines and pharmaceutical care (Desselle and Zgarrick, 2009). VAPS must meet the following criteria:

1. To be planned and standardized and should be provided for a fee.
2. To be focused on prevention and/or screening of socially significant diseases with high morbidity and mortality.
3. They are the so called "pure services" and must include a comprehensive program evaluation and consultation for each patient individually.

The philosophy and practice of relationship marketing offer new insights and strategies for building a successful pharmacy practice. This approach emphasizes the importance of developing and maintaining lasting relationships with patients through the provision of high-

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Abbreviations: BGN, Bulgarian lev; **CVD,** cardiovascular disease; **ESH,** European Society of Hypertension; **EUR,** Euro; **IHD,** Ischemic heart disease; **SPSS,** statistical package for the social sciences; **VAPS,** value-added pharmacy services; **WTP,** willingness-to-pay.

quality VAPS. Relationship marketing requires thoughtful use of market segmentation and niche marketing techniques to identify selected groups of patients who are most likely to benefit from specific pharmacy services. Each interaction with these patients should be deliberate, with the dual purpose of improving health and building a rewarding, long-lasting professional relationship. By developing pharmacy services that meet patients' needs and deliver on promises, pharmacists can build lasting relationships that are the foundation of a successful and rewarding practice (Shepherd, 1995; Doucette and McDonough, 2002).

The aim of our study was to assess the amount of money that the visitors and patients in community pharmacy in Bulgaria are willing to pay (WTP) for the measurement of blood pressure. A number of studies showed that community practice pharmacists are able to measure blood pressure within acceptable limits of accuracy and that, with the collaboration of general practitioners, the pharmacies were suitable agencies for screening hypertension (Edwards, 1981; Rawlins, 1991; Ellis et al., 1992).

The analysis was made in two relevant perspectives:

1. Patients' point of view, taking into account their attitude to control one of the most important risk factor for CVD and willingness to pay for its measurement; and
2. Pharmacy management decision making practice.

The main study questions were: Are visitors and patients of a community pharmacy valuable source in occasion of blood pressure measurement? Did they accept it as a VAPS?

MATERIALS AND METHODS

Willingness-to-pay (WTP) is the most widely agreed upon method to measure the benefits in monetary terms (Van Helvoort-Postulart et al., 2009). WTP is defined as the maximum amount of money that may be contributed by an individual to compensate her/his utility change or to receive an extra service or treatment. WTP is one of the major approaches to the valuation of health benefits, pharmacy services and medication programs. The technique is based on the principle that the maximum amount of money individual is willing to pay for a commodity is an indicator of the value to him/her of that commodity (Johannesson et al., 1993; Drummond, 1994). In accordance with the guidelines for the practice of economic evaluation, some demographic characteristics of the target population are identified (Kulkarni et al., 2009). For avoiding the major biases and restrictions of WTP, as yea-saying, protest answers and warm glow effect (Mitchell and Carson, 1989) we perform a direct face-to-face interview of the participants, using a short and easy understandable questionnaire (Bhatia and Fox-Rushby, 2003).

A direct measurement with fully-automatic blood pressure monitor was offered to the visitors and patients in community pharmacies in Sofia, Bulgaria. All the recommendations for conventional, ambulatory and home blood pressure measurement of the ESH were taken into account (O'Brien et al., 2003). WTP for value-added services was assessed in 100 visitors and patients in community pharmacies within two months in 2011. The blood pressure measurement and evaluation were presented free of charge to the people who accepted to participate in the study. At the end of the procedure, a face-to-face interview was conducted.

The questionnaire consists of 5 easy to understand open-ended questions. There was no need to build a hypothetical market for the provided service, because it was performed to the participant previously. Participants were asked about their WTP for this VAPS if it was not for free. Demographic characteristics and household income were also collected using a standardized questionnaire modified by Nocera et al. (2003). Relevant statistical analysis was performed (Grove, 2007).

RESULTS

The total number of collected and complied inquiries among visitors and patients in the community pharmacy was 100, almost equally distributed between men and women. There were 54 females and 46 males.

According to the age, participants are distributed as follows: Almost a quarter of them aged under 29 years (23%), 17% are between 30 and 39, every fifth respondent (20%) is aged 40 to 49 years, one in four (26%) is between 50 and 59, while the smallest share, one-seventh part of the sample (14%) are 60 years and more (Figure 1). Respondents were almost evenly divided according to their age.

The respondents were asked how often they measure their own blood pressure. Almost half of them (46%) reported measuring once a month; every third person (30%) does so less frequently (other frequency); every sixth participant (16%) measures his/her blood pressure two or more times a week. Only 4% measure their blood pressure once a week and 3% do so every day (Figure 2). Older respondents tend to measure their blood pressure more often than younger and this difference is significant ($p<0.05$, Cramer's $V=0.314$). Persons who suffer from CVD also measure their blood pressure much more often ($p<0.001$, Cramer's $V=0.649$).

According to their monthly income, respondents are distributed as follows: 37% reported income between 240 and 500 BGN, almost one third of the sample (32%) reported between 500 and 1000 BGN, every seventh participant (16%) has a monthly income over 1000 BGN, while one in six (15%) – below 240 BGN. Minimal monthly salary in 2011 is 240 BGN. The distribution is illustrated in Figure 3. Male participants more frequently report higher income than the females ($p<0.05$, Cramer's $V=0.289$). The relation between the gender and the income is weak and it might be due to reporting bias.

Almost all respondents (95%) answered that they accept to pay for the measurement of blood pressure in pharmacy, while the remaining would not pay for this investigation. The average amount that participants would pay is 2.34 BGN, the price ranged from 0.20 to 10 BGN. Distribution is shifted to lower values down; it means that more people believe the price must be below average. The median is 2 BGN and the most frequently

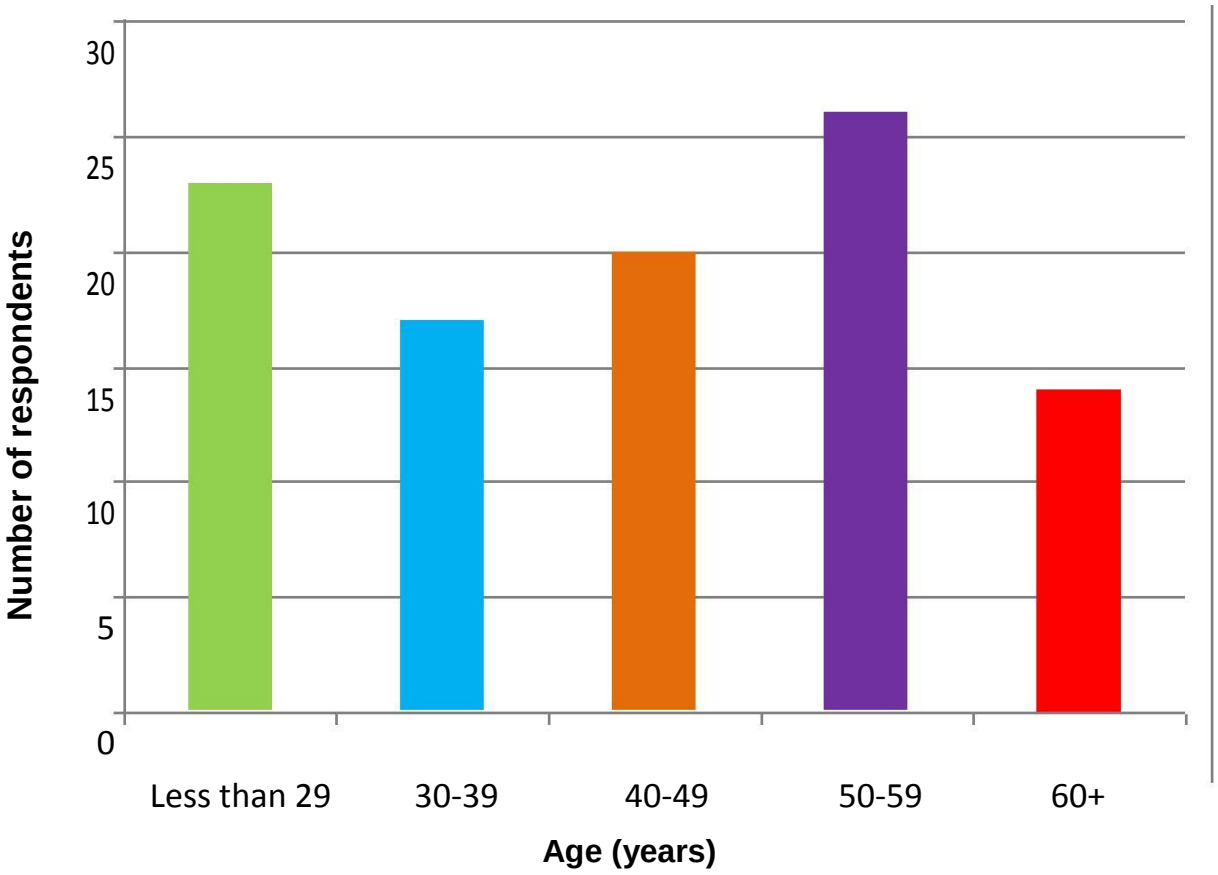

Figure 1. Age distribution of the participants (absolute number).

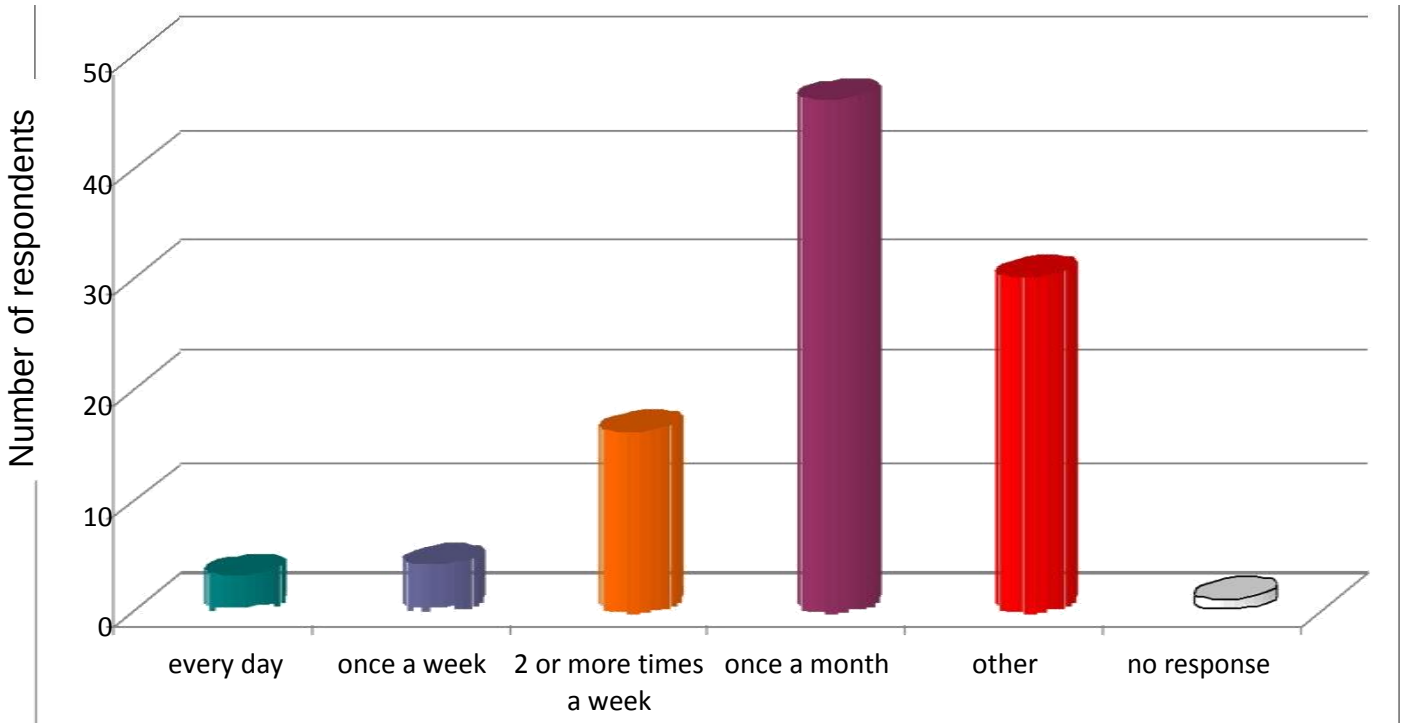

Figure 2. Distribution of the respondents according to the frequency at which they measure their own blood pressure (absolute number).

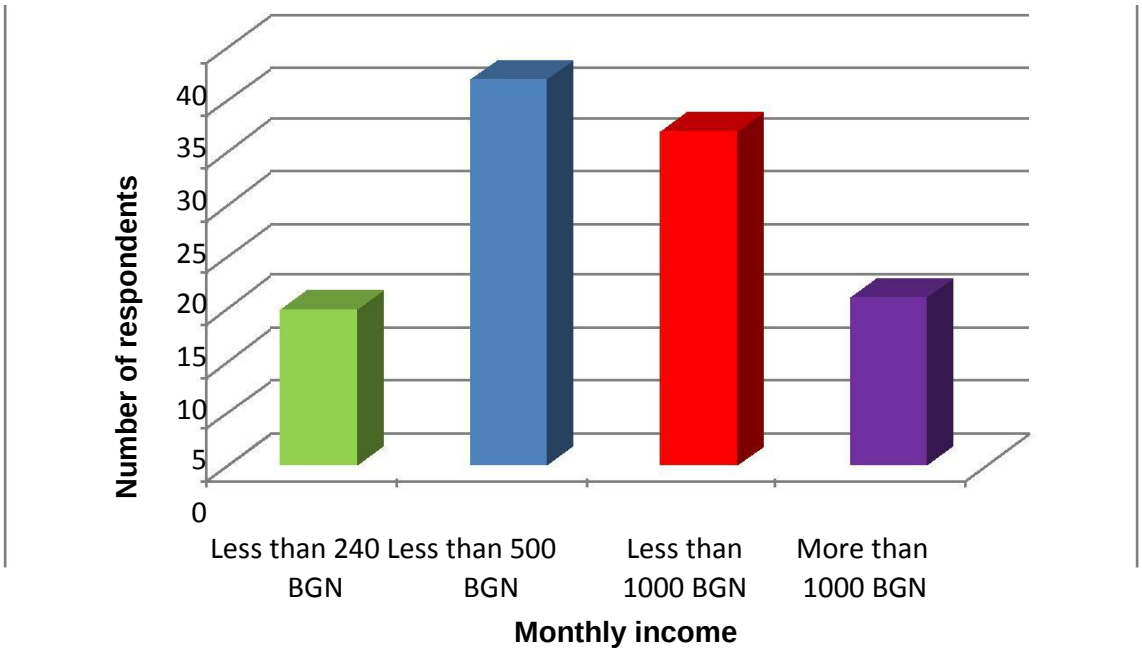

Figure 3. Distribution of respondents according to their monthly income (absolute number).

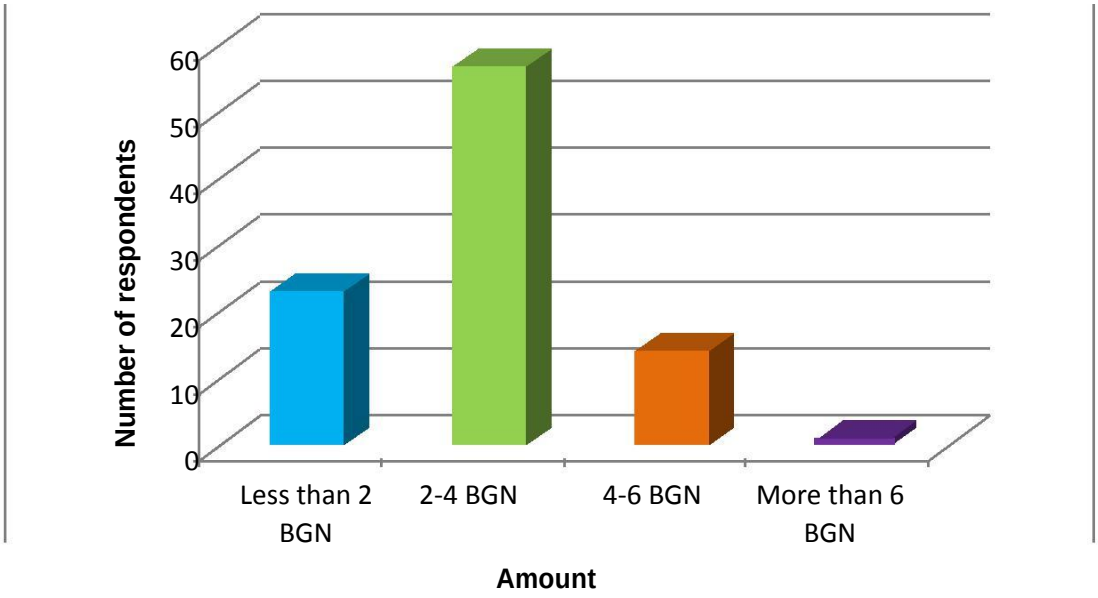

Figure 4. Distribution of respondents according to the amount they would pay for the measurement of blood pressure (absolute numbers).

elicited amount by respondents is also 2 BGN. The results are presented in Figure 4.

In order to assess the relation between the factor variables in the questionnaire and WTP, we conducted chi-square analyses following (Table 1). WPT is presented as dichotomous variable where 0 means all answers as 0 BGN (non- willed to pay) and 1 means all other amount of money (willed to pay).

The variables, sex, age and monthly income had no statistically significant impact on willingness to pay of the respondents ($p>0.05$).

The frequency respondents typically measure their blood pressure has a significant impact on their willingness to pay for this service ($p <0.001$, Cramer's V = 0.478) (Table 2). Those of them who measure their blood pressure every day or once a week are much more willed

Table 1. Chi-square tests.

Parameter	Value	df	Asymp. Sig. (2-sided)
Pearson chi-square	22.883[a]	5	0.000
Likelihood ratio	11.193	5	0.048
Linear-by-linear association	0.001	1	0.981
Number of valid cases	100		

[a]. 9 cells (75.0%) have expected count less than 5. The minimum expected count is 0.05.

Table 2. Symmetric measures.

Parameter		Value	Approx. Sig.
Nominal by nominal	Phi	0.478	0.000
	Cramer's V	0.478	0.000
Number of valid cases		100	

to pay compared with those who do so in other occasions. Provided ANOVA analyses show no significant difference between the mean amounts of money that the different groups are willing to pay for the measurement of their blood pressure.

DISCUSSION

The interviewed visitors/patients in community pharmacies are willing to pay for value-added services. Distribution is shifted to lower values down; it means that more people believe the price must be as small as possible. The median is 2 BGN equivalents to near 1 EUR (mentioned of 47% of participants). One main factor is leading blood pressure WTP in pharmacy. The study shows that the respondents who measure their blood pressure on everyday basis or once a week are much more willing to pay compared to patients who measure their blood pressure rarely. This means that the persons, who measure their own blood pressure more often, understand better its importance and are more willing to pay for it as an element of their self-care for their own health.

Conclusion

The majority of the respondents understand the importance of blood pressure measurement as a valuable predicting factor for development of CVD. They are ready to perform this service in a community pharmacy, pay for it and being confident in the skills of pharmacists. Performing more specific health related and laboratory tests and activities focused on prophylactics of different socially important diseases is crucial for the strategic positioning of the community pharmacist as a healthcare promoter and gatekeeper. The results give positive answer that VAPS could improve economical parameters and pharmacy operation incomes in Bulgaria.

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