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USE OF NON-PRESCRIPTION MEDICINES, VITAMINS AND NUTRITIONAL SUPPLEMENTS IN LATVIA

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1. IMPORTANCE OF THE TOPIC

Medicines are substances that can be regarded as pharmacological entities as well as social phenomenon – their life-cycle involves a wide range of social actors, including users, health care policy makers, physicians, patients, the pharmaceutical industry, etc. Unlike prescription drugs, the choice and use of which is to a larger extent influenced by the physician’s advice (Geest and Whyte 1989, 347), non-prescription medicines and remedies are more and more stepping out of the “experts’ area”, and use of them is influenced by a wider range of different factors (Cohen, et al. 2001, 442).

The current study focuses on non-prescription medicines: vitamins, minerals, a number of medical devices, prefabricated homeopathic preparations and nutritional supplements, within the limits of the present study being referred to as “over-the-counter medicines and remedies” (hereinafter OTC medicines). The thesis aims at characterising factors influencing or related to the individual’s choice and use of OTC medicines.

The topicality of the research is not solely grounded in the contemporary theories, but is closely related to the current situation in Latvia. Pharmacies offer a wide range of OTC medicines; however the users of these medicines do not often consult medical experts. A tendency to encourage self-medication persists because of several economic benefits and increase of patient’s autonomy (Ruiz 2010); however self-medication also includes a number of different risks associated with the inappropriate and wrong use of OTC medicines. The wide availability of OTC medicines and possibility to use them without physician’s advice encourages a false perception that the use of these medicines does not involve any risk.

There are no systematic studies on the use of medicines (including OTC); however a public discourse still suggests that certain problems persist regarding this issue (I. Ozoliņa 2012). Some studies (Pudule, Villeruša, u.c. 2008, 12) and statistic data show that the medicines market is steadily growing (Zāļu valsts aģentūra 2014). The total share of OTCs in the market volume amounts to 18% (Zāļu valsts aģentūra 2012, 13) this can be considered as substantial, if compared to the European average about 6-10% (Britten 2008, 3). There is a lack of statistics on the total sales of nutritional supplements, yet the information in the mass media shows that the world dietary supplements’ market grows by 10% annually (Knipše 2012).

Overall, the situation in both prescription and non-prescription medicines market in the world is not satisfactory - it is estimated that approximately 50% of the world's drugs are prescribed and sold inappropriately and about the same number of people in the world use these medicines inappropriately (WHO 2002). The worldwide studies reveal a wide variety of medicines usage patterns, so the World Health organisation (WHO) emphasises the necessity to perform studies within each particular region to identify the most characteristic regional tendencies and determinants of medicines use (Hardon, Hodgkin and Fresle 2004, 2).

The Public Health Strategy in Latvia (2011) and also other documents (Ministru kabinets 2011, 7.2. punkts), like health policy documents in other parts of the world, underline the need to promote rational use of medicines. Programmes promoting the rational use of medicines should be based on study results characterising specific regional problems and their determinants regarding the use of medicines and other remedies.

Considering the terms " rational " and " rationality " from the perspective of medicine and sociology, we encounter with a wide application of this concept in the everyday context, as well as in the field of science. The rational use of medicines is most commonly characterized by the definition of the WHO¹. According to this definition, behaviour that does not comply with the principles listed by this definition should be considered as non-rational or irrational (WHO 2002, 1).

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¹ Rational use of medicines requires that "patients receive medications appropriate to their clinical needs, in doses that meet their own individual requirements, for an adequate period of time, and at the lowest cost to them and their community"; (WHO 2002).
Studies worldwide show that, from the point of view of the WHO definition, consumers do use medicines inappropriately (Britten 2008, 15). From the perspective of sociological theory such behavior should not be looked upon as irrational, but rather as behaviour disclosing a different aspect of rationality – medicine user’s rationality. Therefore, it can be said that the WHO definition is not sufficient to understand the role of medicines in today’s society (Cohen, et al. 2001, 444). In addition, the life-cycle of medicines is also influenced by the pharmaceutical industry based on its own rationality (Britten 2008, 68), directed mostly towards profit maximization.

However, the aim of this paper does not provide the analysis of different rationality aspects characterising all parties that are involved in medicines life cycle, but its focus is directed to the individual’s perspective of rationality using medicinal products and its interaction or collision with other parties’ rationalities. Such focus has been purposefully chosen due to the common belief expressed by sociologists that public health policy discourse on medicines often lacks the user’s perspective (Britten 2008, 15).

2. GOAL AND OBJECTIVES OF THE PAPER

To reach the set goal the following tasks are defined:

1) To investigate typical patterns of OTC medicines use patterns and determinants within the population of Latvia;
2) To identify the most typical user’s rationality patterns - views regarding characteristics, effectiveness and perceived necessity of OTC medicines usage for disease treatment and prevention in Latvia.

The following tasks are proposed to achieve the set objectives:

1) To provide an insight into the sociological theories characterising the agent and structure integration;
2) To analyze the sociological theories regarding the interaction between the individual and system;
3) To analyse theories considering social construction of health and illness, as well as individual’s behaviour models as a product of interpretation; identify a set of most typical medicines use patterns and determinants and the influence factors on agent’s behaviour;
4) To analyze the concepts of rationality and rational social action provided by theoretical approaches of sociology, highlighting on the individual’s rationality perspective;
5) To summarize main problems, patterns and determinants disclosed by the studies worldwide, adjusting the theoretical and methodological framework of the study;
6) With the help of empirical data characterize patterns and determinants of OTC medicines’ use in Latvia, disclosing user’s perspective of rationality.

Implementation of the tasks 1-5 is based on the theoretical analysis, while the task 6 is provides for empirical research.

3. THEORETICAL BACKGROUND OF THE PAPER

The paper considers behaviour of the individual from two theoretical perspectives - the agent and structure integration, as well as the individual and system interaction.

The theoretical background of the present research has been based on the description of the agent-structure integration rooted from the Structuration Theory provided by Anthony Giddens, the theory of *habitus* by Pierre Bourdieu, as well as Health Lifestyle Theory by William Cockerham. The analysis aims to illustrate the role of the structure as a motivational and sometime restrictive in the context of different aspects of individual’s behaviour. In the area of health and illness individual’s behaviour is determined by the interaction between agent’s life chances and life choices – the choice of
particular health lifestyles, directed either towards maintenance, enhancement or damaging one’s health. Thus the use of medicines and other medicinal products may be characteristic for different health lifestyle types.

The study analyses the theory of psychographics provided by Emanuel Demby, which is traditionally applied in marketing sciences. This theory classifies consumers into particular segments according to their intrinsic psychological characteristics, values and lifestyle. The choice of the theory is closely related to the object of the research and the tendency of consumers to look upon OTC medicines as consumption goods instead of perceiving them as pharmacological products (Geest and Whyte 1989, 93). Consumer lifestyle built on the available life chances and life choices, determines individual’s psychographic characteristics which are consequently related to the purchase preferences of goods and services.

The behaviour of an individual in the area of medicines and other medicinal products for disease prevention and treatment selection is influenced by the system. The theory of E. Giddens serves as a starting point for the description of the interaction between the agent and system. This theory reveals the impact of disembedding mechanisms on the individual. According to Giddens, medicine is one of these mechanisms, and the impact of this “mechanism” occurs due to the asymmetry of knowledge. Consumers possess limited information regarding issues of medicines and other healthcare-related questions; therefore trust in experts becomes a relevant issue and promotes a certain social dependency on these experts. Such a dependency may provoke a certain level of scepticism and questioning expert’s advice (Britten 2008, 16), which may manifest itself in a non-adherent and non-rational use of medicines, from the point of view of the system.

The concepts of lifeworld and system provide the main theoretical framework for considering the relationship and interaction between individual and system. According to this theory, the impact of the system on the lifeworld is carried out through the colonization of the individual’s lifeworld values with the help of the system’s formal rationality which prevails over the individual’s rationality. It is given that the lifeworld is characterized by the communicative action, but the system by the strategic action. The sociologist Nicky Britten (2008) emphasizes the appropriateness of the Theory of the Communicative Action to the area of medicines use, describing the user of medicines as the embodiment of the particular lifeworld system, which stands for healthcare policies with the involved actors (experts) as well as the pharmaceutical industry.

Since the research has the main focus on the individual, the study largely concentrates on the individual’s illness perception and behaviour as a result of this perception, as well as analyses the medicines user’s rationality perspective, regarding medicine selection and usage. These theories have been provided by N. Britten as well as by other authors (Whyte, Geest and Hardon 2002, Hardon, Hodgkin and Fresle 2004).

The epistemological structure of the thesis follows the framework from more general-level theories towards context-specific theories, concluding with the characteristic of OTC medicines use patterns and determinants in Latvia.

4. METHODOLOGICAL BACKGROUND AND HYPOTHESIS

The theoretical part of the thesis is devoted to the analysis of the scientific literature, the results of the research studies and conclusions. The empirical research is based on the quantitative study methods. The choice of such methodological approach is based on the possibility to identify quantitatively verifiable indicators in order to state causal explanations and association between the variables.

With the help of the theoretical analysis of the sociological, as well as its sub-branch theories and also the results of the prior studies, the framework of medicines use determinants has been identified. The behaviour of an individual is analysed in terms of two perspectives - "agent - structure" and „individual - system", relating these perspectives to the context of medicines use. Having analysed sociological theories regarding the interpretation of the terms “illness”, “health”

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2 *Lebenswelt* (Germ.)
and their behaviour afterwards, the following impact factors have been revealed. Since individuals are acting on the basis on their subjective rationality, the study also identifies most typical types of medicines user’s rationality: highlights the fact that this rationality is usually based on the interpretation of medicines value for the daily life of the consumer, as well as on the perceived efficiency and necessity of these medicines.

The analysis of the sociological theories and literature as well as the intention to describe a wide range of OTCs’ use determinants lead to the necessity to put forward six research hypotheses:

1. The user’s perception regarding the necessity, properties and effectiveness of OTC medicines is one of the most significant determinants of their use;
2. The use of OTC medicines is related not only to individual’s physical health status, but also to other holistic health status dimensions - vitality, mental health and life satisfaction;
3. The use of OTC medicines is a component of individual’s healthy lifestyle;
4. An individual's psychographic characteristics are associated with various OTC medicine use patterns;
5. Individuals trust in the information sources, which often contain medicine advertising, is connected with the use of the advertised OTC medicines;
6. Wider accessibility of OTC medicines and healthcare services promotes a more intensive use of them.

In order to achieve the objectives of the thesis and the implementation of the defined tasks, the research tool in the form of a study questionnaire was developed (Thesis, Annex 1). The designed questionnaire is based on the theoretical analysis, as well on the empirical research data. Although the questionnaire encloses some question blocks piloted by other studies, the content of the questionnaire can be considered as original, particularly designed material, being empirically applied for the first time. The questionnaire design includes several blocks of issues:

1) Questions regarding used OTC medicines;
2) Questions about attitudes and perceptions regarding OTC medicines;
3) Questions about the information available on OTC medicines;
4) Questions about the state of individual’s health (physical, mental health, vitality and quality of life);
5) Questions about health and illness behaviour, including questions about health lifestyle;
6) Questions about consumers distinctive lifestyle and habits;
7) The block of demographic questions.

Empirical research data were obtained during the period from 4th July to 24th July, 2012 through direct (face-to-face) structured interviews, interviewing 785 respondents. The empirical study sample is nationally-representative to the general set of population, covering the age group of 18-74 years. The empirical part describes the behaviour of OTC medicines users, their rationality, being characterised within the particular context by views and beliefs about OTC medicines, their efficacy, properties, necessity, risks and other associated aspects.

The research hypotheses were tested using a range of statistical analysis methods - descriptive statistics, Chi -square test, including adjusted standardized residuals method, factor analysis (Principal components method), as well as cluster analysis (K-means cluster) method. The analysis tested the relationship between different variables. At the first stage the comparison of variables based on binary association was tested (Teibe 2007, 71) – the dependent variable is based on two possible alternatives - „used / did not use OTC medicines”. At the second stage the hypothesis was tested using the help of logistic regression analysis method, i.e., analysing the dependence of binary variable in relation to the set of other variables.
5. THE NOVELTY AND IMPORTANCE OF THE THEME

The topicality of this research for Latvia is supported by the number of reasons. Firstly, it possesses a practical importance. The total consumption of OTC medicines in Latvia is outstanding and grows every year. The consumption of OTC medicines is encouraged by advertising and their wide availability, promoting the perception that these medicines belong to the category of consumer goods and their use does not involve any serious risk. Secondly, the study provides an insight into consumers’ behaviour regarding OTC medicines by revealing the types, reasons and patterns of OTC medicines usage as well as the information sources promoting the use of OTC medicines, etc. Thirdly, the thesis also reveals a typical OTC medicines user’s demographical portrait and characterizes most typical determinants of OTC medicines use – holistic health status, health lifestyle and psychographics. The application of the psychographics method in the context of OTC medicines and remedies use is a novelty in Latvia. Thus, the impact of the user’s rationality on OTC medicines use is tested. The study also investigates the impact of the system factors on OTC medicines use – trust in the available information sources and availability of OTC medicines and healthcare services. The study results can be used as informative material in programs promoting for rational use of medicines and other remedies.

The study also contributes to the development of the theoretical ideas in the area of health and medical sociology - the concepts from the theoretical literature are operationalized and causal explanations and interaction between variables are empirically tested. The paper adapts the typology of N. Britten, elaborated on the basis of the Theory of the Communicative action by J. Habermas, being originally applied to the context of the medicines prescription – this typology is adapted to the context of OTC medicines use. The paper also depicts clash of individual’s and system’s rationalities and the impact of this conflict on the use of OTC medicines. The user’s rationality, as an important perspective of the total concept “rationality”, provides a meaningful explanation of the user’s behaviour; therefore, it should be regarded as an essential part of medicines use studies. In addition to the perspective "individual - system", user’s behaviour is explored from the point of view of “agent-system”. The thesis provides a description of the medicines user’s behaviour, outlining a wide range of medicine usage patterns as a social phenomenon, its influencing factors from distinctive theoretical perspectives.

6. STRUCTURE OF THE THESIS

The thesis consists of three chapters, an introduction and conclusion. In the first chapter the theories related to the agent – structure integration are analysed, being related to the context of medicines use. The interaction between individual and system is depicted with the help of the Theory of the Communicative Action, revealing user’s subjective rationality, and impact of the system on it, as well as the means how to prevent a negative impact of the system on individuals. This chapter describes the typology of N. Britten, helping to attribute the Theory of the Communicative Action to the context of the use of medicines.

The individual's decision-making process is based on a socially constructed knowledge, thus the definitions of illness and health problems are commonly considered as a pre-requisite to the use of medicines and other remedies. Therefore, the chapter encloses same models that characterize illness and disease construction as well as decision-making processes regarding health and illness behaviour, including the choice and use of medicines.

The second chapter summarizes the history and traditions of the studies regarding the use of medicines by classifying the most essential methods and important aspects related to the issue. This chapter describes the most characteristic tendencies that are discussed in the third chapter within the context of empirical data in Latvia. Several studies have been previously performed in Latvia; that is why this chapter also includes a brief overview of their results.

Chapter three is devoted to the empirical study of OTC medicines use in Latvia. This chapter provides a detailed research of the indicators’ description as well as the results of the pilot study. The chapter reflects a sampling procedure
and field work, as well as the obtained data that are analysed in the context of the previous studies, as well as the
aforementioned theories.

The conclusions are based on the hypotheses and summarize the most significant results of the study, considering
OTC medicines users as agents, being influenced by the structure and the system. The chapter also includes the most
characteristic lifeworld rationality patterns and interaction between individual and system. The chapter also characterizes
the most typical OTC medicines use patterns, as well as provides practical implications directed to the improvement of the
situation regarding OTC medicines use in Latvia.

7. SOCIOLOGICAL CHARACTERISTICS OF DETERMINANTS OF
INDIVIDUAL’S BEHAVIOUR

The concept associated with the behaviour of an agent is commonly known as "agency" (Giddens 1984, 46). This
concept basically means an individual's ability to critically evaluate and choose the course of action under the influence of
past conditions and future prospects. However, this ability is constrained – agent’s behaviour encompasses free choice
elements, meanwhile the disposition of agent’s behaviour is influenced by the certain force. In sociology this force is
referred to as “the structure” (Ritzer 2008, 418). A question, to what extent the individual’s action is a subject of his/her
choice and to what extent it is determined by structural constraints, is answered differently by different authors. Gidens’s
Structuration theory (Gidenss 1984), emphasizes the interdependency of the agent and structure, indicating that the
structure does not exist independently from the agent, while the agent is acting on the basis of the structure determined by
the previous action. Although it might seem that Giddens is convinced about the dominant role of the structure, it has been
noted that he belongs to the group of sociologists, who assign greater emphasis of the agency (Ritzer 2008, 397) by
pointing to the capacity and reflexivity of the agent that prevails over the structural restrictions. At the same time Giddens
indicates that reflexivity persists on the practical level of consciousness and is partly persistent in the discursive
consciousness. At the third level – unconsciousness – reflexivity is not persistent. The interaction between consciousness
and unconsciousness sets the background of daily activities, the important element of which is routine.

The interaction and complexity of the interplay between the agency and structure is noted by the sociologist P.
Bourdieu, describing the concept of habitus - the certain disposition that lies under the ability of agents to generate products
- thoughts, perceptions, expressions and actions, being set by the historical and social conditions (Bourdieu 1984, 170).
Habitus means a fixed system of dispositions, a part of which agents are aware of, and part of which they are not – this
disposition system creates the basis for the action in the social world. The concept “habitus” is similar to the concept of
Giddens - “routine”, still the theory of habitus reveals a comparatively prevalent role of the social structure. Therefore, P.
Bourdieu is considered to be an author that assigns the dominant role to the structure (Ritzer 2008).

Attributing the topic "agent structure and interaction" to the agent’s action in the area of health and illness, a
concept “health lifestyle” is used – this concept classifies the behaviour of individuals into collective health behaviour
patterns (Nettleton 2006, W. C. Cockerham 2007, 56). W. Cockerham notes that individual’s health lifestyle choices are
largely determined by the agent's social class – mostly by the amount of available financial resources, level of education
and available information. Similarly, choices are also influenced by socio-demographic factors, family, relatives,
communities, etc., as well as the experience acquired in the process of socialization. W. Cockerham characterizes the
interaction between agent and structure as - life-choices and life-chances working in close tandem and creating a fixed
disposition (habitus) that, on its turn, determines the way agents behave (W. C. Cockerham 2007, 60-70). Within the
context of health and illness agent’s behaviour is revealed through the choice of a particular health lifestyle – activities that
are directed towards health maintenance, enhancement or deterioration (the use of medicines, diet, physical activities,
recreation, personal hygiene, stress management techniques, health damaging habits, health check-ups, etc.) (Cockerham, Abel and Luschen 1993, 419). Health and illness behaviour can be divided into three groups: preventive health behaviour, illness behaviour and sick-role behaviour (Quah 2001, 29, Kasl and Cobb 1966, in Rodrigues, Carvalho and Carvalho 2007). The use of OTC medicines may be characteristic to all three groups of behaviour.

Some authors have noted that assigning too much responsibility for health lifestyle choices to the agent may lead to negative consequences - a person may have an inadequate feeling of guilt and responsibility for his/her illness (Britten 2008, 34). However, despite the influence of structural conditions, individual’s responsibility for choosing health lifestyle remains high (Smith and Goldblatt 2000, 42), nevertheless individuals tend to emphasize the role of structural constraints over their own responsibility (Williams and Popay 2001, 33). Still, the so-called "big four" - smoking, the use of alcohol, sports and diet (Gabe, Bury and Elston 2004, 25) - these lifestyle elements are considered as "voluntary"; i.e., subjects of individual’s life-choices rather than life-chances (Blaxter 1990, 113).

Summarizing the approaches of three abovementioned authors, it can be noticed that the main differences in opinions persist in relation to the dominants role and choice- should this role be assigned to the agent or the structure. Giddens is convinced that the agent's choice prevails over the structural conditions, while Bourdieu emphasizes the dominating role of structural factors. W. Cockerham, like P. Bourdieu, concludes that the impact of the structural conditions on the agent’s behaviour is much more notable than the impact of the agent on structure. The current thesis aims to clarify the way the particular health lifestyle – an interaction between life-chances and life-choices, is related to the use of OTC medicines in Latvia.

The concept “lifestyle” is used/mentioned/applied in different social contexts – within the context of OTC medicines the use of this concept may be related to the characteristics of a consumer. The growing consumerism within the society (Bunton, Nettleton and Burrows 1995, 193) promotes the widespread tendency of thinking that OTC medicines fall into the category of consumer goods, but not in the category of pharmacological entities (Geest and Whyte 1989, 93). Consumer’s psychographics determine trends in their choice between different products and services (Demby 1974, 28) and these trends can be also applied to buy OTC medicines. Lifestyle, a combination of life-choices and life-chances, is an important variable determining psychographic characteristics of a consumer (Demby 1974, 23). Social and cultural characteristics promote common lifestyle patterns and value systems, serving as a basis for consumer decisions (Hustad and Pessemier 1974, 36). Psychographics, as one of the determinants for medicines use, is also included in the Model for the Study of Determinants of Medication Use (M. C. Smith 1996, 300). The current study aims at determining whether the individual’s psychographic characteristics are related to the differences in OTC medicines use patterns in Latvia.

Structural conditions do not have an impact solely on agent’s behaviour, but also in the other perspective, being in mutual interaction with the agent – the system. Sociologists choose different techniques to describe the interaction of the system. For instance, E. Giddens refers to the circumstances of globalization, in which micro and macro environments influence each other, stating that each of these levels is characterized by a specific type of rationality. The system rationality creates certain disembedding processes or “mechanisms”. These mechanisms consist of symbolic tokens (such as, for instance, money) and expert systems. Medicines are such expert systems, and the process of disembedding is realized due to the asymmetry of knowledge – individuals due to their limited knowledge cannot fully evaluate health information and the aspects related to medicines, so their perceptions of risk are formed on the basis of trust in experts and information sources (Britten 2008, 15). Such enforced trust creates a social dependency of individuals on the experts as well as the alienation of consumers from their actual needs.

The sociologist Max Weber speaks of specific “rationalism” that characterizes the bureaucracy of the modern society, noting that this “rationalism ” is based on predictability (Vēbers 2004, 14-15). According to M. Weber, there are four types of rationality exist: a practical rationality, theoretical rationality, substantive rationality and formal rationality (Kalberg 1980). Formal rationality is based on the calculated actions, affected by the laws, regulations and social structures
(Kalberg 1980, 1151-1159), and Weber possesses an opinion that in the modern society this type of rationality prevails over other types (Kalberg 1980, 1173) W. Cockerham and the colleagues have attributed the theory of Weber to the health and illness context, arguing that health lifestyles embody the principles of formal rationality – health is not perceived as a value itself, but rather a tool to fulfil certain social roles. The use of medicines may likewise primarily be based not on the goal to ensure good health, but on the opportunity to regain the capacity of fulfilling everyday duties and obligations (Allotey, Reidpath and Elisha 2004).

The domination of formal rationality is revealed also by the Theory of Communicative Action (J. Habermas) that classifies social behaviour depending on its orientation in the broader context of the action. Communicative action is one of such forms of action expressed as verbal or non-verbal interaction between the two agents aimed at achieving mutual understanding and coordinated action. The communicative behaviour is closely related to the concepts of the "lifeworld" and „system”. “The concept of the lifeworld comprises norms and subjective experiences, social practices and individual skills, as well as cultural convictions. Not only culture but also institutional orders and personality structures should be seen as basic components of the lifeworld” (Habermas 1987, McCarthy XXVI) The lifeworld is characterized by communicative action – the action that focuses on mutual understanding. The system can be characterized as something external and objective - "someone not involved" (Habermas 1987, (b) 117). The system possesses strategic behaviour based on formal rationality principles. Strategic action may also take forms of an open strategic action and concealed strategic action, which can be defined either as unconscious deception (systematically distorted communication) or as unconscious deception (manipulation). Increasing formal rationality widens the gap between the individual and system - the system progressively loses touch with the life-world elements that took part in the system formation. E. Giddens refers to the alienation processes by using the term “disembedding”, while J. Habermas deploys the concept "uncoupling” (Habermas 1987, (b) 153-154). The system and lifeworld separation, in Habermas’s opinion, promotes the increasing domination of the system’s formal rationality over the lifeworld’s rationality, alienating the lifeworld from its real needs and wants; this ongoing process may be called colonization (Habermas 1987, (b) 311). Colonization manifests itself in many areas of the contemporary life - entertainment, culture, tourism, recreation – these spheres gradually become controlled by the consumer’s culture and the power of commodities (Habermas 1987, (b) 386).

The Theory of the Communicative Action may be applied to the context of medicines use (Britten 2008, 18). The theory reveals interaction between the agent (the user of medicines), encompassing the perspective of the lifeworld; and the system, which is represented by the health policy with the involved experts as well as the pharmaceutical industry in the particular context (Britten 2008, 19). Thus, the lifeworld colonization process manifests itself in several ways.

Consumption in the area of healthcare can be considered as one of colonization drivers (Scambler and Britten 2001, 62). Making their own decisions regarding OTC medicines consumers have an illusion of their self-autonomy and choice (Hibbert, Bissell and Ward 2002, 47, Whyte, Geest and Hardon 2002, 93, Stevenson, Leontowitsch and Duggan 2009, 97). However, in reality the system constantly creates expectations and needs of consumers, using a variety of tools, such as marketing and advertising, thus controlling prices of goods and services (Slater 1997, 33-35; 50). Thus, individual's behaviour is a product of social manipulation; the system actually imposes its power over individuals - freedom in such a situation is one of the strategies of power (Slater 1997, 59). With the help of advertising the necessity to use medicines is constructed, promoting the increase of sales of these medicines. Even more, marketing activities of the pharmaceutical industry create a gap between consumer’s real needs and wants (Abraham 2009, 57), by promoting the use of medicines outside the objective necessity, i.e., defining the diseases and creating a demand for drugs which are capable to deal with these diseases (Bissell, Ward and Noyce 2001, 935). This process is called medicalization3 – the tool with the help of which the system manifests its power over the consumer (medicalization) (Foucault 2004, 13), by "legitimation of a personal

3 Medicalization –, a process by which nonmedical problems become defined and treated as medical problems, uzually in terms of illness and disorders” (Conrad 2007, 4).
problem as a “disease” (M. C. Smith 1996, 312). Medicalization often leads to the excessive and inappropriate use of medicines (M. C. Smith 1996, 316). Advertising of medicinal products is often based on the exaggeration of particular symptoms, such as fatigue, pain, digestive disorders, obesity, insomnia, etc. (Conrad and Leiter 2009, 13). Within the context of medicines it is possible to talk about pharmaceuticalisation, attributing power to medicines beyond their active ingredients (Whyte, Geest and Hardon 2002, 88). The concept “pharmaceuticalisation of everyday life” (Williams, et al. 2009, 25) may be attributed to OTC medicines; the alternative of which could be, for instance, choice of a healthier lifestyle. Medicisation and pharmaceuticalisation may lead to the process called “disease mongering” which actually means "a pill for every ill and an ill for every pill" (Wainwright, Michael and Williams 2009, 152).

Rationality of the pharmaceutical industry directed towards the maximisation of sales and profit contributes to the bias of the information available to consumers, not just in advertising material. Publications often put more emphasis on the benefits of medicines rather than on possible adverse drug reactions (Britten 2008, 89; 92, M. C. Smith 1996, 316). From J. Habermas’ theory perspective, biased information for the consumers may be looked upon as conscious deception (manipulation) performed by the system. Some authors argue that in the modern society experts lack the authority of indisputable truth because of an ever-increasing amount of contradictory discourses; so the trust in particular discourses depends on the capacity of these discourses to create an impression of confidence (Bauman 1988, 801). Therefore, the authority of a physician gradually decreases (Cockerham, Abel and Luschen 1993, 413), increasing the impact of other information sources with regard to the medicines taking decisions. Having the emphasis put on pharmacological treatment, encouraged by medicalisation and pharmaceuticalisation, it may be characterized as colonization of the lifeworld implemented by the system. In terms of J. Habermas’ theory these processes are characterized as the types of both open and concealed strategic action.

A certain paradox, but also the WHO definition of rational use of medicines may be regarded as one of the lifeworld colonization techniques – this definition characterizes the use of medicines as a predominantly technical issue, leaving out the patient’s lifeworld concerns and rationality (Britten 2008, 124).

Colonization of the lifeworld also manifests itself in the meeting points of the individual’s lifeworld and system – when strategic action comes into contact with communicative action, then strategic action starts to dominate over the latter (Britten 2008, 19-20). Such direct meeting points are visits to doctors and also consultations with pharmacists. In terms of the Theory of the Communicative Action the strategic behaviour of the experts may be characterized as systematically distorted communication or unconscious deception. The behaviour of the experts is strategic (goal-oriented) and “leaves others to believe that all the presuppositions of communicative action are satisfied” (Habermas 1987, (a) 332). The action of experts is based on different structural elements (such as clinical guidelines, evidence-based medicine, etc.) that focus on the intended outcome rather than on mutual understanding (Lo and Bahar 2013, 69). Individuals are focused on communicative action (Britten 2008, 136). Even though medical professionals may try to listen to the patient’s lifeworld concerns, the traditional format of the medical encounter does not make this process easy (Britten 2008, 140, Nettleton 2006, 36) – a limited time may be one of the barriers to a successful communication. In addition, the doctor turns to the patient, speaking in a "voice of medicine", and the voice of the lifeworld remains unheard (Lo and Bahar 2013, 69). This "voice of medicine" can be interpreted as a part of formal system’s rationality and lifeworld colonization techniques, as it emphasises "the scientific" side and encourages medicalisation processes (Scambler and Britten 2001, 55). The doctor-patient relationship is characterised by the asymmetry of knowledge. In the circumstances of the limited information individual’s perceptions regarding risks and other aspects related to medicines are influenced by the experts of the system.

4 „Widespread use and uptake of pharmaceuticals for diverse purposes which extend far beyond the realms of medicine or the strictly medical” (Williams, Gabe and Davis 2008, 816)

5 Rational use of medicines requires that “patients receive medications appropriate to their clinical needs, in doses that meet their own individual requirements, for an adequate period of time, and at the lowest cost to them and their community”.

12
In addition, experts may possess a belief that a certain part of information has no need to be explained to patients in a detailed way - it actually means that the experts take risks on behalf of their patients, therefore promoting social dependence of patients on them. Consequently, as a reaction to the social dependence, may be patient's refusal to comply with the doctor's instructions (Britten 2008, 16).

There are many polar views, whether a physician should be informed about all kinds of OTC medicines treatment the patient is taking. Some authors believe that inquiring patients about OTC medicines used is an attempt to take over the control that should be left to the patient (Sleath, et al. 2001, 358). A different point of view states that physicians should be aware of all the treatments the patient uses in order to avoid adverse drug reactions and other negative effects (Ryan, Brewer and Small 2008, 180). Doctors as the system representatives should find ways to balance communicative and strategic action (Britten 2008, 149), for instance, one of the tools to implement this task is a patient - centred care, which basically means listening to the patient’s opinion and the “acceptance of patient’s agency in relation to medicines” (Britten 2008, 184). Such approach would enhance the patient's trust in physicians, as trust is associated with more successful treatment outcome (Thom, et al. 2002, 483, Britten 2008, 130). Thus, concordance instead of passive obedience to medical advice (compliance) represents communicative action (Britten 2008, 130).

The time when doctors were almost the only information sources on medicines, has passed (Rayner and Easthope 2001, 174), especially as the role of the doctor in the context of OTC medicines use is gradually decreasing. In cases of non-prescription medicines, the responsibility is passed over from doctors to pharmacists (Bissell, Ward and Noyce 2001, 10). There are disputes about the role of the pharmacist regarding consultations on OTC medicines. The research evidence shows that pharmacist’s area of expertise is perceived by consumers to be related to the area of medicines, rather than to health (Britten 2008, 93), and it could be a reason why consumers who purchase OTC medicines may not want to consult pharmacists. However, the evidence shows that the importance of pharmacists as a source of information is high; and pharmacists may be helpful in rendering information on the variety of medicine-related aspects - composition, dose, possible side effects, etc.(Britten 2008, 93, Major and Vincze 2010). Pharmacist’s consultations are another meeting point of the lifeworld and system, thus their successful cooperation may be a vehicle of the lifeworld de-colonization. The key word in this respect should also be "patient-centred care". “Pharmaceutical care is a patient-centred practice in which the practitioner assumes the responsibility for the patient’s drug-related needs, and is held accountable for this commitment” (Almarsdóttir and Traulsen 2005, 78).

In the modern age of information, the Internet is an important source for consumers. Sociologically speaking, the Internet can possess the potential to constrain the lifeworld colonization with the help of discussions, exchange of views and freedom of speech abilities (Britten 2008, 190) The Internet can be seen as a meeting place, a bridge between the lifeworld and the system, and, also a tool of “re-addressing the imbalance of knowledge between patients and professionals” (Britten 2008, 99-100). This is particularly related to the so called "lay referral network” (Britten 2008, 61), in the form of different Internet forums. A number of studies show that it is typical for individuals to consult at least one informal information source before going to the doctor (Jones and Creedy 2008, 20, Gabe, Bury and Elston 2004, 67). The Internet is also seen as a tool promoting patient involvement and empowerment, as well as constructing the medical and healthcare knowledge (Cohen, et al. 2001, 454-455). This source of information can be very useful; however, the scientific sources suggest that the information on the Internet is not always of good quality (Pandolfini, Impicciatore and Bonati 2000, Risk and Petersen 2002 , Diaz, Griffith, et al. 2002, Cline and Haynes 2001). A large part of the information on the Internet is directed towards sales promotion. In order to promote the communicative action and knowledge regarding medicines, health care experts should assume the role of “gatekeepers” (Major and Vincze 2010, 338) loma, suggesting reliable internet sources that may be used by patients.

Patient information leaflets (PILs) play a very important role in OTC medicines, as often PILs are the only information sources, which the OTC medicines users consult. There is a widespread belief that the use of OTC medicines is
not associated with serious risk, as these medicines may be purchased without prescription, physician’s or even the pharmacist’s advice (Bissell, Ward and Noyce 2001, 14). Thus, the importance of PILs in case of the OTC medicines use is sometimes even higher compared to prescription medicines, when the patient gets the exact prescription. Internet, PILs and other written information have the potential to constrain the colonization of the lifeworld if they provide objective, unbiased and more balanced information about harms and benefits of medicines (Britten 2008, 187).

This chapter reflects the impact of the structural conditions and of the system on the individual in relation to the use of medicines. Since the study is focused on an individual’s perspective, the next section describes individual's interpretation of illness and health, as well as consequent behaviour, which may also manifest itself as the use of medicines.

8. SOCIAL CONSTRUCTION OF HEALTH AND ILLNESS AND INDIVIDUAL’S BEHAVIOUR

The use of non-prescription products is closely related to individual’s health status, so it is important to look at the social construction of health and illness. The concepts “health” and “illness” are not unambiguous – their construction is influenced by culture, ideology and the structural factors (Nettleton 2006, 38, W. C. Cockerham 2007, 9). The concept “illness”, characterized by Andrew Twaddle in 1973, in the sociology of health and illness theory involves three categories (Hofmann 2011, 21). The objective disease category or diagnosis states that the disease is caused by the body’s disability or physiological dysfunction, which takes place independently from the subjective evaluation. The second category sickness - states that the disease is defined in relation to a company or an individual's ability to meet their social roles - this category involves the concept of “sick role”. The third category - experience of illness - states that the disease is a social phenomenon, i.e., product of the subjective interpretation.

The biopsychosocial approach to health and disease states that the definition of health is holistic. It is important to emphasize that the concept of health involves much more than just physical health - it also includes vitality, social relationships, and mental health (Ware 1987, 474, Blaxter 1990, 25). The concept "health" is often not crystal clear. It is possible that health is considered to be good in one respect, but poor from the other point. It often happens because individuals, in spite of the disease existence, feel good and vice versa. Thus, the idea of having "poor" health may be evoked due to some psychological discomfort, etc. (Blaxter 1990, 35-36). The term "quality of life", as one of the components of the holistic health, also includes living standards, social relationships, job-satisfaction and psychosocial characteristics (Ware 1987, 474).

The construction of health and disease interpretation determine individual's health and illness behaviour, which in most cases takes place according to the following algorithm - symptoms are identified, the severity of health problems is assessed. Then, decision is made regarding the most appropriate action and the potential impact of the action is assessed (Kleinman 1980, 51-52). The diagnosis of health problems may lead to the number of possible scenarios – a health problem is ignored, the individual decides to have self-medication one, chooses to consult a healthcare professional, etc. Several behaviour analysis models explore whether the interpretation is being followed by an action, and whether this action will manifest itself as the use of medicines. The user’s behaviour regarding medicines can be to some extent explained both by the models exploring health and illness behavioural patterns, as well as by models related to the consumer’s behaviour. Nevertheless, the motives behind medicines use are usually more complex than the motives of consumers (Montagne and Basara 1996, 261) they normally incorporate behavioural, social and cultural factors (Montagne and Basara 1996, 270). It is important to note that the authors of the behaviour models are convinced that the lists of the factors provided by these models are not exhaustive, but should be considered to be rather illustrative; the identification of the factors is still the

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6 Health belief model, Health as a locus of control model, Social-cognitive theory, etc..
ongoing process (M. C. Smith 1996, 299). If prescription and non-prescription treatments are compared, in the first case (prescription medicines), the instructions provided by the physician are of a bigger importance; however, in case of OTC medicine use individuals tend to consult a variety of other information sources, including pharmacists (Britten 2008, 29-30). This process is known as self-medication, and this phenomenon is largely related to the cases when OTC medicines are used (Britten 2008, 25). The present doctoral thesis aims at exploring the extent of self-medication within the population of Latvia, as well as at clarifying the most typical determinants and factors for OTC medicine use associated with the intake of these medicines.

9. RATIONALITY OF MEDICINES USER

Medicines users’ rationality encompasses perceptions regarding properties, necessity, efficacy of medicines, the level of risk related to the use of medicines, etc. The user’s rationality is always associated with an individual's life context, and this rationality also manifests the impact of social system, structure and cultural environment. This chapter describes the typical user’s rationality manifestations, being the basis of health and illness construction and decision-making processes.

Firstly, the use of medicines may be a certain sign that the individual accepts his/her illness (Britten 2008, 48; 53). Medical anthropologists believe that the use of medicines has roots in “a complex urge of ancient lineage which predisposes humans to combat disease by taking in a chemical agent, which either drives out the intruding cause or replaces the 'something' lost in illness” (Pellegrino 1979, cited in Geest and Whyte 1989, 356). Sociologists indicate that a frequent use of medicines is based on the "urge to “take something” in response to troubling symptoms or distress” (Britten 2008, 45, emphasis in the original). This belief is reinforced by the mass media, promoting the use of medicines even in cases of non-significant ailments, and also by constructing the necessity to use different vitamins and nutritional supplements continuously.

Anthropologists believe that the users’ rationality is revealed through the meanings of medicines – medicines may be perceived both as material objects, as well as symbols. Medicines may symbolize the power of medicine, physicians, or modern technologies (Montagne 1988, 421). Non-prescription medicines may be a symbol of independence - their application is associated with the individual’s autonomy. “Pharmaceuticals break the hegemony of professionals and enable people to help themselves” (Geest and Whyte 1989, 348-349). The availability of OTC medicines in stores and on the Internet assigns them the status of consumption goods, while purchasing these medicines in pharmacies grants them the status of pharmacological agents, appropriately delivered to serve the particular individual’s needs (Stevenson, Leontowitsch and Duggan 2009, 97-98).

The user’s rationality is characterized by socially constructed views regarding effectiveness, necessity, properties and risks of medicines (Whyte, Geest and Hardon 2002, 5-6). Risk is one of the most important issues related to the use of medicines (Gabe 1995, 2), and the concept of "risk" includes both the potential risk of adverse effects as well as the risk that may arise if medicines are not used. Anthropologists point to the widespread belief that non-prescription medicines are risk-free products, as well as to the belief that newer and more expensive medicines are more effective (Hardon, Hodgkin and Fresle 2004, 4). The study results show that the users of OTC medicines tend to pay more attention to the benefits of these medicines rather than to potential harm caused by these medicines (Bissell, Ward and Noyce 2001, 14, Hibbert, Bissell and Ward 2002, 56). This trend is also being named as "pharmacomythologies" – false beliefs that these medicines should produce only positive effects (Montagne and Basara 1996, 264). Therefore, social efficiency of medicines manifests itself as the capacity of these medicines to ensure the possibility for an individual to carry out his/her social roles (Allotey, Reidpath and Elisha 2004).
The user’s rationality illustrates that the "total drug effect" (Britten 2008, 46) extends beyond their pharmacological properties. Medicines user’s rationality is an important aspect of the total rationality concept and it needs to be explored to get a complete understanding about medicines use patterns and problems. The present thesis explores the patterns of the typical user’s rationality within the population of Latvia, as well as it investigates the impact of the user’s rationality on the use of OTC medicines in Latvia.

10. RESEARCH METHODOLOGY

The study is based on the population survey (the field work period July 4-24, 2012). The language of survey was either Latvian or Russian (upon the choice of the respondents). The method of survey was direct (face-to-face) structured interviews. The data were collected by "The Institute of Sociological Research." Research tools are represented in the form of an original questionnaire designed by the author of the Thesis (Thesis Appendix 1). To test the designed questionnaire and to avoid inaccurate or false interpretations of the enclosed issues, a pilot study was conducted prior to the survey. The pilot study contained both cognitive test as well as the perception evaluation test.

The target sample of the study was the residents of Latvia aged from 18 to 74, and the sample (n=785) is representative to the general set of the population in Latvia. The sample was collected using a two-stage stratified random sampling method. The data were weighed in the categories "gender", "age" and "residence". As the result of weighting and rounding of figures the sample amounted to n = 786.

The data analysis was performed using several statistical methods provided by the data analysis program IBM SPSS Statistics 20.0. The dependent and independent variables were compared using Chi -square (\(\chi^2\)) test. Contingency tables (2 * 2), as well as R * C tables, consisting of > 2 rows (R) and > 2 columns (C) (Teibe 2007, 67) were used in the analysis. In addition, adjusted standardized residual test was performed. If | Adjusted standardized residual | > 1.96, the observed relative frequency is outside the 95% confidence interval (CI) – it means that the observed relative frequency is different from the expected relative frequency at the significance level of \(p = 0.05\) (Teibe 2007, 72; 86). In the cases, when the independent variables contained a large number of indicators, the exploratory factor analysis (principal components method) was used to reduce the dimension of the measurements and to obtain internally connected variable groups. Grouping of the variables into smaller sub-groups was performed by using K -means cluster analysis. To determine the impact of the independent variables on the dependent variable, the binary logistic regression analysis method was implemented. The selected significance level was 0.05, so statistically significant results were produced if p-value < 0.05. The selected confidence interval (CI) was 95% with the reliability coefficient \(Z_{1-\alpha/2} = 1.96\).

The study included the analysis of the theoretical literature to identify dependent variables (factors) and indicators characterising these factors. The first group consists of demographic and socioeconomic factors. The second group includes factors related to the individual’s holistic health status: perceived physical health, mental health, vitality, as well as the evaluation of particular life-quality aspects. The third group characterises medicines user’s rationality and encloses beliefs and perceptions regarding medicines’ efficiency, properties, necessity and other related aspects. The fourth group consists of lifestyle related factors, including both health lifestyle characteristics as well as psychographic characteristics. The fifth group is related to the system’s assessment from the individual’s perspective – one’s trust in the available information sources, as well as the accessibility of OTC medicines and healthcare services.
11. OVERVIEW OF THE STUDY RESULTS

11.1. Patterns of OTC medicines use

Out of the total number of respondents (n = 786) 61.7% had used OTC medicines during the last three months. The most frequently used OTC medicines were painkillers – in 45.5% of the cases. About a quarter (25.9%) of the users used common cold medicines and about the same number of users (25.3%) took vitamins and minerals. These trends are similar to the results elsewhere. Ibuprofen, containing the active ingredient ibuprofen, was the most frequently used OTC medicine (in 23.7% cases). The second most popular medicine was Citramon (acetylsalicylic acid) – in 9.1% of cases, while the third place (7.0%) was taken by fish oil medicinal products, which belong to either the vitamin or nutritional supplement group. It has been noted that the use of ibuprofen is very typical among the population in Europe (Delaney, et al. 2011, 86). The Baltic Statistics on Medicines suggest that both ibuprofen and acetylsalicylic acid consumption data are similar in all three Baltic countries (Zāļu valsts aģentūra 2013, 158). Also medicines for gastrointestinal problems (Mezym forte) and Vitamin C were comparatively frequently used. A large majority of respondents believes that they adhere to the provided information (PILs, etc.) about medicines they have used, but the main reason for non-adherence is the lack of motivation, based mainly on the past experience of the use – following the results of non-adherence there were no adverse effects observed.

11.2. Demographic characteristics of OTC medicines’ users

Table 1 shows that OTC medicines are more used by women - 71.4% (the user’s proportion among men is 49.3%). The logistic regression test (see Thesis, Annex 17) shows that women’s chances to take OTC medicines are generally twice higher in comparison to men. It was also noted that the proportion of OTC medicines users is higher among elderly respondents (aged 55-74) - 75.0%, while the proportion of non-users is relatively higher in younger (aged 18-34) respondents - 48.8%. The logistic regression test results show that the odds of using OTC medicines are twice as high for the age category 35-54 as compared to the youngest group of respondents (18-34 years). OTC medicines are used more by the retired - 78.8%, but less by pupils and students - 60.7%. The use of OTC medicines is more excessive among the divorced individuals and widows, as well as among those respondents who have two members in theirs households - 67.6%. A more extensive use of OTC medicines is characteristic among those who live in the suburbs of Riga - 72.9%, but a lesser one is stated among the people who live in Kurzeme region. Logistic regression analysis shows that the odds of using OTC medicines of those living in Riga are twice higher if compared to those who live in Kurzeme. Likewise, the odds of OTC medicines use are four times higher for the individuals living in the suburbs of Riga (compared to those who live in Kurzeme).
Table no.1. **Demographic characteristics of OTC medicines users, % **

<table>
<thead>
<tr>
<th>Gender</th>
<th>Used/did not use</th>
<th>Men</th>
<th>Women</th>
<th>Total sample, n=786</th>
</tr>
</thead>
<tbody>
<tr>
<td>Used</td>
<td>50.7</td>
<td>71.4</td>
<td></td>
<td>61.7</td>
</tr>
<tr>
<td>Did not use</td>
<td>49.3</td>
<td>28.6</td>
<td></td>
<td>38.3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Age</th>
<th>Used/did not use</th>
<th>18-34</th>
<th>55-74</th>
<th>Total sample, n=786</th>
</tr>
</thead>
<tbody>
<tr>
<td>Used</td>
<td>51.2</td>
<td>75.0</td>
<td></td>
<td>61.7</td>
</tr>
<tr>
<td>Did not use</td>
<td>48.8</td>
<td>25.0</td>
<td></td>
<td>38.3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Occupation</th>
<th>Used/did not use</th>
<th>Manager</th>
<th>Blue collar</th>
<th>The retired</th>
<th>Pupil/student</th>
<th>Total sample, n=786</th>
</tr>
</thead>
<tbody>
<tr>
<td>Used</td>
<td>58.6</td>
<td>47.6</td>
<td>78.9</td>
<td>39.3</td>
<td></td>
<td>61.7</td>
</tr>
<tr>
<td>Did not use</td>
<td>41.4</td>
<td>52.4</td>
<td>21.1</td>
<td>60.7</td>
<td></td>
<td>38.3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Family status</th>
<th>Used/did not use</th>
<th>Single</th>
<th>Divorced, widow</th>
<th>Total sample, n=786</th>
</tr>
</thead>
<tbody>
<tr>
<td>Used</td>
<td>46.8</td>
<td>71.5</td>
<td></td>
<td>61.7</td>
</tr>
<tr>
<td>Did not use</td>
<td>53.2</td>
<td>28.5</td>
<td></td>
<td>38.3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Number of persons in the household</th>
<th>Used/did not use</th>
<th>2 persons</th>
<th>≥ 4 persons</th>
<th>Total sample, n=786</th>
</tr>
</thead>
<tbody>
<tr>
<td>Used</td>
<td>67.6</td>
<td>53.6</td>
<td></td>
<td>61.7</td>
</tr>
<tr>
<td>Did not use</td>
<td>32.4</td>
<td>46.4</td>
<td></td>
<td>38.3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Place of Residence</th>
<th>Used/did not use</th>
<th>Suburbs of Riga</th>
<th>Kurzeme</th>
<th>Total sample, n=786</th>
</tr>
</thead>
<tbody>
<tr>
<td>Used</td>
<td>72.9</td>
<td>47.2</td>
<td></td>
<td>61.7</td>
</tr>
<tr>
<td>Did not use</td>
<td>27.1</td>
<td>52.8</td>
<td></td>
<td>38.3</td>
</tr>
</tbody>
</table>

*Only the variables having values of $|\text{adjusted standardized residuals}| > 1.96$ are included.

Other research data show that medicines are used more by women (Bush and Osterweis 1978, 179, Daban, et al. 2010, 1, Johnson and Pope 1983, 226, Tobi, et al. 2003, 204, Kaufman, et al. 2002, 339); (Al-Windi 2005, Neutel and Patten 2009, e443, Conboy, et al. 2005, 977, Ryan, et al. 2009, 4). A direct correlation between the increasing age and use of medicines is also observed in the studies elsewhere in the world (Birchley and Conroy 2001, 164, Johnson un Drungle 2000, Kaufman, et al. 2002, 339, M. C. Smith 1996, 297, Novignon, et al. 2011, 4) (Neutel and Patten 2009, e443). At the same time a number of studies exploring OTC medicines use have detected a different trend - a relatively younger age increases the possibility that these medicines are used (Bush and Osterweis 1978, 182, Daban, et al. 2010, 1, Carrasco-Garrido, et al. 2009, 746, Ryan, et al. 2009, 5, Extavour and Edwards 2008, 290). This trend can to some extent be explained by the reluctance of young people to see a doctor, but rather apply self-medication (Baran, Teul and Ignys-O’Byrne 2008, 139) The studies abroad have found that an increasing number of members within a family contribute to the lower consumption of OTC medicines (Johnson and Pope 1983, 228). %. The studies also show that use of OTC medicines is more characteristic to people that belong to a higher social class (Daban, et al. 2010, 1, Johnson and Pope 1983, 228), and some research data suggest that the retired people use less non-prescription medicines (Nielsen, Hansen and Rasmussen 2003, 677). The situation in Latvia marks out the features particularly characteristic to this region. No statistical explanation exists in relation to the increased use of OTC medicines in Riga and its suburbs, since there is no statistically significant relationship between the place of residence and other demographic categories that are characterised by a more extensive use of OTC medicines. A plausible explanation may be provided by the fact that a large number of pharmacies is
located in Riga and around the capital; what is more, the sales in these regions are comparatively higher (LR Konkurences padome 2008, 86). According to the data of 2012 provided by the Central Statistical Bureau of Latvia (CSB) – the number of operating pharmacies was the lowest in Kurzeme - 55 (80 pharmacies in Riga, 66 pharmacies around Riga) (CSP 2014).

11.3. Medicines’ users’ rationality

Medicines users’ rationality is revealed through the factors that are important for individuals when they choose and use medicines. The most important consideration mentioned by respondents is – “medicines are already at home, so it is not necessary to go to the pharmacy” - 78.3 %. The possibility to avoid any medical encounter is also an important factor in 74.5 % of cases. For a large number of respondents (72.3 %), an important criterion is the fact medicines should consist of ingredients that are as natural as it is possible. Also the price of medicines is a factor of great importance for 71.7 % of the cases (see Thesis, Fig. 3.2). The views of the respondents were divided into three groups characterizing individuals’ specific perceptions. (see Thesis, Annex 7). The first type is convinced that his/her decision to use medicines is influenced by the following pre-conditions: “as natural ingredients as possible”, “known brand/producer’s name of medicines”, “suggestions from friends and relatives”. Since the brand and property awareness is strongly associated with advertising, this group of perceptions was entitled as “The influence of advertising and lay advice”. The second type possesses an opinion that the use of medicines is mostly influenced by the low price, reliable and known pharmacist and a possibility to avoid a medical encounter. This type was assigned the name “The rationalists”. The third type is convinced that the most important factors are the pharmacy location (accessibility of a pharmacy from home), a large choice of pharmaceuticals and a possibility to purchase medicines not only in pharmacies, but also in stores and via the Internet. This type was named - “The comfort and choice–oriented”. The results have showed that the proportion of users is comparatively higher (69.2 %) among the respondents who possess the first type views (see Thesis, Table 3.21).

The users of OTC medicines are influenced by the variety of perceptions created in particular socio-cultural circumstances – views regarding efficacy, properties, necessity and risk associated with the use of medicines (see Thesis, Table 3.22). The most common view related to the efficacy of the medicines is “If medicines have helped in the past, they will certainly help again” - 83.2 % of the respondents completely or mostly agree with such a statement. 79.3 % of respondents completely or mostly agree with the statement "The longer the medicines are sold in the market, the safer they are”. A large part (69.4 %) of the respondents possess an opinion that "Medicines should be used at the sight of the first symptoms to avoid more serious symptoms", while 63.9 % of respondents cannot permit themselves to be ill because of everyday duties, therefore they start using medicines at the sight of the first symptoms.

The views of the respondents were divided into four groups (see Annex 8). The first type is characterized by false views regarding the properties of OTC medicines - "Nutritional supplements and vitamins should be used all the time," "the use of vitamins and nutritional supplements cannot cause side-effects" and "the use of non-prescription medicines does not cause side-effects." This group is named as "The false perceptions". The second group possesses the following opinions - "I cannot permit myself to be ill, therefore I start using medicines at the first sight of symptoms" and "Medicines should be used at the sight of the first symptoms to avoid more serious symptoms." This group has been awarded the name "The cautious". The third group consists of the following opinions - "If medicines have helped in the past, they will certainly help in future" and "The longer medicines are in the market, the safer they are”. This group is characterized by the name "The evidence-based". The fourth group is convinced that new and expensive medicines are better; this group is named as "New and expensive is better".

The comparison of the abovementioned three types (see Table. 3.23) has shown that the majority of users are among the first type “The false perceptions” - 70.9 %. The results of the logistic regression analysis (see Annex 17) show that the odds of using OTC medicines are twice as high (OR=2.16) for the people possessing false perceptions. If the
respondents completely agree to statements characterizing this type, the odds of using OTC medicines increase by more than five times (OR = 5.32). If an individual possesses the views characterized by the type “The cautious”, the proportion of OTC medicines’ users is higher than among the individuals who do not possess such views (65.0%) (see Table 3.24).

The results of the study reveal that medicines users’ rationality has an impact on OTC medicines use – the views characteristic to the types “False views” and “The cautious” contribute to the use of OTC medicines to a larger extent.

**11.4. Individual’s holistic health status**

Self-assessment of the individual’s physical health status indicates that more than half of the respondents rate their health as good (48.5%) or very good (7.9%) (see Fig. 3.3). 65.3% of the total respondents named a number of health problems they had experienced during the last three months. The most commonly experienced problems are common cold (30.3%), headaches (27.0%), cardiovascular diseases (25.9%), as well as bone and joint-related problems (23.9%) or severe back pain (23.1%) (see Table 28.3).

The relationship between health assessment and OTC medicines use (see Table 3.30) shows that the percentage of medicines users is higher among the respondents with negative self-rated health - 81.2%, while the proportion of non-users is higher among the individuals with higher self-evaluation of health - 48.9%. The logistic regression analysis (see Annex 17) shows that particular ailments increase the odds of OTC medicines use: headache (OR = 2.64), digestive problems (OR = 8.26). Science studies elsewhere have noted the correlation between positive self-evaluation of health and a lesser use of OTC medicines, and vice versa (Daban, et al. 2010, 1, Neutel and Patten 2009, e443, Tobi, et al. 2003, 203, Al-Windi 2005, Carrasco-Garrido, et al. 2009, 743); (Novignon, et al. 2011, 4, M. C. Smith 1996, 300).

Mental health and vitality ratios in Latvia are similar to the European average (Ivanovs, Salmane-Kuļikovska and Vīksna 2012, 29-30). The average mental health score is 70.0 points, and the vitality score - 65.8 points. The results of the analysis (see Table 3.32) show that the proportion of OTC medicines users is higher among the respondents with the lowest level of vitality - 92.3%, while the share of non-users is higher among those with the highest level of vitality (50.6%). The logistic regression test (see Annex 17) shows that a lower vitality level contributes to the higher odds of OTC medicines use (OR = 8.54). A similar trend was observed within respect to mental health – the proportion of non-users is higher among the respondents whose mental health ratios are better 46.7%, and the use of OTC medicines is more extensive among the respondents with a lower mental health level. Overall, comparatively higher vitality and mental health levels are associated with a lower use of OTC medicines. This relationship is revealed also in the studies abroad (Johnson and Pope 1983, 225). Vitality is a factor that influences the use of OTC medicines – the odd of using OTC medicines increases, if the vitality level decreases.

The results show that 53.3% of the respondents rate their quality of life as good or very good, 41.0% as average, and 5.7% as poor or very poor. The analysis examining the association between life-quality assessment and OTC medicines use shows that the number of non-users is higher among the respondents who rate their life-quality as good or very good (57.0%) (see Thesis, Table 3.33). The lower life-quality assessment is associated with an increasing number of OTC medicines users - 66.6%. The studies abroad also reveal a correlation between the lower life satisfaction and increased possibility of OTC medicines use (Shafie, Hassali and Yahaya 2013, 107, Kovac, et al. 2008, 227). The studies abroad also reveal a correlation between the lower life satisfaction and increased possibility of OTC medicines use (M. C. Smith 1996, 298).

The analysis was performed regarding the satisfaction with different aspects of life, i.e., the relationship among family members and others, achievements, career, ability to cope with everyday duties, social support, financial satisfaction, living conditions, sexual life, health status, ability to cope with financial needs and overall satisfaction with life. The respondents are more satisfied with the following aspects affecting the quality of life - relationships with family
members (very or rather satisfied - 84.2 %), having relationships with others (colleagues, neighbours, etc.) they feel very satisfied or rather satisfied - 82.0 %, as well as the ability to cope with everyday tasks (very or rather satisfied - 77.0 %). Lower satisfaction levels were persistent as to the following aspects - income (very or rather satisfied - 27.8 %), and as the ability to cope with financial needs (very or rather satisfied - 44.0 %) (see Fig.3.5). A common scale, describing the satisfaction with various aspects of life, was created with the help of the factor analysis (see Annex 9). The lowest factor values (up to -1) characterize negative evaluation; average scores (-1 up to 1) characterize average evaluation, but the highest scores (> 1) characterize positive evaluation. The analysis shows that non-users' of OTC medicines share is higher among those with the highest scores (52.0 %). Such association suggests that higher satisfaction ratios are associated with a lesser use of OTC medicines (see Table 3.34).

11.5. Health lifestyle

A large proportion of respondents (40.1%) believe that they take care of their health fairly enough or to a large extent well enough. Slightly fewer of them (38.4%) evaluate their care as moderate, but 21.5% believe that they avoid taking care of their health. The results show that the proportion of OTC medicines users is lower among those respondents who neglect taking care of their health - 50.6% (see Thesis, Table 3.35). The most widespread activities regarding healthcare are walking or working in the fresh air (37.0%), as well as the use of herbal teas, honey, garlic, etc. in 36.8% of cases (see Table 3.36).

To classify individuals within the sub-groups in relation to their healthcare practices, the statistical analysis K-means cluster was implemented. As the result of the analysis two different groups of individuals emerged - those with a comparatively healthier lifestyle and those with less healthier lifestyle. Those respondents who have healthier lifestyle (see Thesis, Table 3.37) comparatively more often undergo regular health examinations and tests, get vaccinated and follow their diet, perform sports activities - exercises at home and in sports clubs, regular walking, work out or do sports in the fresh air. 82 % healthier lifestyle representatives perform different types of sports activities at least twice a week. These people eat significantly more fruits and vegetables and have a relatively less proportion of health damaging habits like smoking and alcohol consumption in risky doses. Individuals, whose lifestyle is unhealthy, rarely undergo medical examination and tests, rarely follow their diet and comparatively rarely get vaccinated. The level of physical activity of these people is very low - only 1-2 % regularly conduct exercises in the open air or at home, and only 21% perform some sports activities at least twice a week. These people consume less healthy food - vegetables, fruit and fruit juice. People having unhealthy lifestyle considerably more often consume alcohol in risky doses (38 %) and smoke (47 %). In addition, 66% of these people have indicated that they practically do not take care of their health.

Therefore, health lifestyle is related to OTC medicines use in the following way – the users ‘of OTC medicines’ proportion is higher among those respondents who have comparatively healthier lifestyle (66.9%) in comparison to the unhealthy lifestyles representatives (53.9%) (see Thesis Table 3.38).

11.6. Psychographic characteristics

The analysed literature suggests that consumers have a general tendency to think that OTC medicines belong rather to the category of consumption goods than to the category of pharmacological entities (Whyte, Geest and Hardon 2002, 93). The psychographics’ method was deployed within the current study to determine the most characteristic types of consumers. The psychographics method provides the classification of consumers into special segments in relation to their intrinsic values, psychological characteristics and lifestyle.
In order to make the classification of consumers, the factor analysis method was implemented (see Thesis, Annex 11). With the help of the Chi-square test, the demographic characteristics of the obtained types were obtained (see Thesis, Annexes 12-15).

Type 1. The Modern (19.1%). These people like to show-off; they strive for new impressions and sensations. They want to feel themselves as modern and contemporary, and actually they consider themselves in this way. For them, it is important to follow up fashion news, and they want others to think that they have a particular style. These people are more often women, among the representatives of the youngest age group (18-34), Latvians, living in the suburbs of Riga, as well as among those with the highest income level per one household member. People that belong to this type are more found among the entrepreneurs or individual workers, civil servants or students.

Type 2. The Discoverer (10.8%). These people look for new challenges; they constantly want to learn and practice something new. People who belong to this type want to feel excitement; they are hungry for diversity and avoid routine. The representatives of this type are more likely found among women, within the youngest age group (18-24), among students and people living in Vidzeme.

Type 3. The Practical (5.1%). People of this type want to make things with their own hands. They love working with a variety of materials; they prefer making things themselves rather than buying these things in stores. This type is most characteristic among the elderly people (aged 65-74), the retired and people having the lowest income level.

Type 4. The Manager (12.8%). These people think they generally have more skills than the others, including the level of intelligence. They like assuming the liability and guiding others. This type is most characteristic among people whose occupation is a manager, as well as among the inhabitants of Riga.

Type 5. The Technical (16.0%). These people are interested in mechanical device operation, i.e., in computer stores and car accessory shops. The representatives of this type can be found among men, age category of 35-54, blue-collars and entrepreneurs. This type of views is more characteristic among the people with an average income category, as well as among individuals living in Latgale.

Type 6. The Religious (14.0%). These people have an increased interest in the Universe, God and religion. This type is more common among women. These people are generally in the eldest age group (55-74 years), the retired; they live in Riga and belong to other nationalities (non-Latvian).

Type 7. The Intellectual (10.7%). This type of people is interested in the news of art, history and culture, as well as in a variety of theories. This type is more common among women, people of elder age (55-74), as well among those who live in Kurzeme.

Type 8. The Survivor (11.6%). These personality types have relatively narrow interests - they are actually interested only in some particular areas. The representatives of this type can be more frequently found among the retired people and individuals who live in Vidzeme.

The results of the analysis suggest that the proportion of OTC medicines users is higher among the representatives of the following types: The Religious (72.1%) and The Intellectual (72.1%), but a lower proportion is among The Modern (52.8 %) and The Technical (51.3%) (See Table 3.39). The logistic regression test (see Annex 17) has showed the decreased odds of using OTC medicines for the type The Modern. The fact that the representatives of the type The Intellectual use comparatively more OTC medicines can be explained by the interest of this type in different theories that might include a variety of information regarding health and disease issues. This is suggested also by the corresponding type of VALS™ terminology - "Thinkers " who posses higher interest in health, health maintenance and healthy eating, as well as are quite well-informed (VALS,™ 2006, 11;13). To some extent, the tendency to use more OTC medicines can be explained by the fact that representatives of this type are found among people who belong to the eldest age group and among women. However this cannot be solely explained by the demography, because representatives of this type are more found among people living in Kurzeme where the proportion of the OTC medicines users is the smallest. The type The
Religious corresponds to the VALS™ type “Believers”, and characteristics of this type notes that these people are very conservative consumers who trust in certain brands which have been tested before. Their consumption patterns can be changed only with a careful promotional strategy (VALS,™ 2006, 14). Some characteristics of this type also states that people of this type are heavy users of sedatives, analgesics, vitamins and nutritional supplements (VALS,™ 2006, 16). In addition, this type is most characteristic among women, the elderly and retired people, who are more intense users of OTC medicines.

The fact that OTC medicines are less used among the representatives of the type The Modern, can be partly explained by the characteristics of the terminology of VALS™, describing the similar type "Innovators": these people have less trust in advertising, but the increasing interest in health and proper nutrition; they pay attention to the product quality and carefully evaluate the expected benefits (VALS,™ 2006, 31). The fact that OTC medicines are less used among the representatives of the type The modern, can be partly explained by the characteristics of the terminology of VALS™, describing the similar type "Innovators": these people have less trust in advertising, but the increasing interest in health and proper nutrition; they pay attention to the product quality and carefully evaluate the expected benefits (VALS,™ 2006, 28).

As the result of the analysis it can be concluded that certain individual's psychographic characteristics are associated with distinctive patterns OTC medicines’ use.

11.7. Evaluation of information sources on OTC medicines

There is about one fifth of the population (21.7 %) that consults medical experts (general practitioners i.e. GPs, physicians, nurses or physician's assistants) regarding the choice and use of OTC medicines. Studies elsewhere have found similar data –only about a fifth of users consult medical specialists regarding the use of OTC medicines (Baran, Teul and Ignys-O’ Byrne 2008, 137). About one tenth (11.1 %) of the users consult both medical experts and other sources of information. For the majority of the population (67.2 %), decision-making regarding the choice and use of OTC medicines is based on the consultation with other information sources. Such data suggest that self-medication tendency is growing, if compared to the situation about ten years ago (V. Ozoliņa 2006). The analysis of separate consultation patterns reveal that the most important information source regarding OTC medicines for people in Latvia is a pharmacist (32.5 % of cases). Also, people often rely on their past experience (31.8 %). GP’s role in the cases of OTC medicines is slightly lower - 26.9 % o (see Table 3.40). The studies in other countries show similar results – in Israel people who purchase OTC medicines rely mostly on their past experience. The next most important informative source is GPs or pharmacists (Vaknin, et al. 2011). Hopefully, the importance of GP in Latvia is still high – this is the third popular information source regarding OTC medicines. The literature shows that the role of GP is context-dependent. It has been pointed out that the importance of doctor’s advice regarding OTC medicines is gradually decreasing due to availability of other sources of information (Montagne and Basara 1996, 262) and the increase of consumerism in the society (Scambler and Britten 2001) Other sources indicate that, in spite of the availability of many information sources, particularly on the Internet, a physician is still seen as the primary and most important source of information (Sillence, et al. 2007, 1861). These differences seem to be particular region-specific.

Regarding one’s trust in the information sources, the majority of the respondents have indicated their trust in PILs (80.0 %), physicians (78.7 %) and GPs (77.9 %). The pharmacist is a source of information that is highly trusted not only by Latvians (72.3 %), but also in other countries - Estonia (Villako, Volmer and Raal 2012, 338) and elsewhere (Simoes, Lobeau and Aerschot 2009, 450) (see Thesis, Fig. 3.6). The lowest level of trust appears in respect to the information in the mass media: radio (9.6 %), TV (10.8 %) and the Internet (11.6 %) (See Fig. 3.7). A similar trend is disclosed by the studies abroad – the study in New Zealand found that users have the least trust in the information provided by TV (Hodggett, Hayward and Stolte 2013, 8). From the users’ point of view, a part of the information sources (GP, physician, nurse,
pharmacist, PILs) generally provide more unbiased information (see Thesis, Fig.3.8), while the other part (specialists of non-traditional methods, newspapers and journals, TV, radio, the Internet and brochures about medicines) offer more commercial (promotional) information (see Fig.3.9).

A quite large proportion of the respondents who trust or rather trust such sources of information as TV, radio, the Internet and medicinal brochures, rate this information as promotional (TV 30.5%, radio - 25.7%). The impact of advertising on the use of medicines is stipulated by the theoretical literature and empirical studies (Hardon, Hodgkin and Fresle 2004, 11, Gray, Boardman and Symonds 2011, Buczak, Lukasik and Witek 2010). In Latvia only non-prescription medicines may be advertised, thus experts suggest that the use of these medicines is to a large extent based on the impact of advertising (Pacientu Ombuds 2013).

The assessment of the correlation between the OTC medicines use and trust in information sources shows that if people have less trust in the sources containing advertising, they use less OTC medicines (see Thesis, Table 3.34). The results of the logistic regression analysis (see Thesis, Annex 17) reveal that trust in sources which contain the advertising of OTC medicines increases the odd of these medicines use (OR = 2.15).

11.8. Evaluation of assessment of OTC medicines and healthcare services

Most part of the respondents evaluate the accessibility of pharmacies as good (91.4%); the most negatively evaluated accessibility was in relation to the stores offering OTC medicines (61.2%). 29.8% of respondents state that they never buy OTC medicines in stores (see Fig. 3.11). The test of the correlation between the evaluation of accessibility and the use of OTC medicines shows that no statistically significant differences exist in this respect.

In 2013 a discussion took place in Latvia on whether OTC medicines should be on sale outside pharmacies - in stores and gas stations. The news agency "LETA" disseminated the study data suggesting that 53 % of the Latvian population consider supermarkets to be an appropriate place for selling medicines (pharmacies were against such initiatives). The study also found that the majority (83%) of population claim that they are willing to buy painkillers and 2/3 of the population confirmed their willingness to buy medicines for common cold outside pharmacies (LETA 2013). Such data are not consistent with the results of the studies abroad - for example, in Israel only 4 % of the population have used the opportunity to purchase non-prescription treatments in stores and other places outside pharmacies. In general, despite the increased accessibility of non-prescription medicines, people still continue to buy them in pharmacies (Vaknin, et al. 2011). The study results in Latvia do not suggest that the use of non-prescription medicines is associated with positive evaluation of their accessibility outside pharmacies; therefore such intents should be critically examined.

This chapter summarizes the main results of the analysis of the OTC medicines use determinants and factors associated with the use of these medicines. During the first stage the correlation was determined, and the results show that the factors that are statistically significant in relation to different patterns of OTC medicines use are the following demographic variables like gender, age, occupation, family status, number of persons in the household, as well as the place of residence. Other factors that disclose the correlation with different patterns of OTC medicines use are physical and mental health, vitality and life-satisfaction, beliefs and perceptions (user's rationality), health lifestyle, psychographics and trust in information sources. The determinants of OTC medicines use within the framework of the current study are gender, age, place of residence, particular ailments, user's rationality, psychographics and also trust in particular information sources.
12. Summary of conclusions

The present thesis analyses the behaviour of individuals with regard to the use of OTC medicines, as well as the impact of medicines use determinants and factors associated with their use. This chapter provides the summary of the main conclusions based on the hypotheses and the objectives put forward in the paper.

The first group consists of findings obtained by analysing the interaction between the agent and structure.

1. Although the agent’s behaviour is based on the choice, reflexivity and capacity to perform the behaviour, structural conditions have an impact on the behaviour as well. The behaviour of the agent is the result of a combination between life-choices and life-chances. The interaction between chances and choices creates a certain disposition of the behaviour, determining not only the possibility to choose among available choices, but also the selection of choices. In the area of health and illness agents choose among particular health lifestyles – they perform activities that are directed towards health enhancement, maintenance or deterioration. Despite structural limitations, several health-related activities are considered as voluntary and are, to a greater extent, under the responsibility and control of an agent, i.e., nutrition, health-enhancing activities, sports, smoking, alcohol consumption, medical examinations and tests. The use of medicines may be consistent with the individual's beliefs about his/her healthy lifestyle. The study in Latvia shows that the individuals who have healthier lifestyles use OTC medicines more. This correlation needs to be taken into account by health promotional and educational programmes - it is important to encourage the use of OTC medicines alternatives like a balanced diet, sports, etc.

2. OTC medicines gradually step out of the “experts’ area” and become self-medication products. Using OTC medicines, individuals do not often consult medical experts, but other information sources. The broad availability of these medicines makes users assign them the status of consumer goods. Consumption is one of the elements characterizing lifestyle, and consumers can be classified in certain psychographic categories, depending on their values, beliefs and lifestyles. The research data reveal the following differences in OTC medicines use patterns with regard to psychographic characteristics of the individual:
   - OTC medicines are more used by individuals who are interested in a variety of theories and news and have extensive knowledge regarding various issues. The literature suggests that individuals who have such psychographic characteristics are also increasingly interested in the issues of health, health maintenance and healthy diet; thus, such interest may also concern OTC medicines;
   - OTC medicines are more used by individuals, who possess conservative beliefs and loyalty to certain brands. Such people are being described by the literature sources as heavy users of different medicines, referring particularly to the category of OTC medicines;
   - The results also reveal psychographic characteristics of people using less OTC medicines – people with highly practical and technical orientation, and also those who see themselves as modern and fashionable. The scientific sources suggest that these two types of individuals are sceptical towards advertising and always carefully assess the expected benefits.

The study results show that psychographics can be one of the useful tools that help describe the behaviour of the OTC medicines users. Psychographics can be used both in marketing, planning OTC medicines promotion campaigns, as well as in elaborating rational medicines programs for further application.

The second group of conclusions comprise findings from the analysis related to the perspective of "individual-system".

1. The Theory of the Communicative Action reveals the impact of the system on users’ behaviour regarding medicines. An individual is in constant interaction with two aspects of the system – health policy with health experts and also the
pharmaceutical industry. Individual’s behaviour is based on rationality associated with the importance of medicines in his/her everyday life, while the system acts on the basis of different rationality. From the point of view of the system’s rationality, one’s behaviour that does not comply with the public health principles is considered to be irrational. The rationality of the pharmaceutical industry is directed towards the sales and profit maximization. Under the Theory of Communicative Action, the impact of the system on the individual is described as the colonization of the lifeworld. Systems are characterized by all types of strategic action – open strategic action and concealed strategic action consisting of unconscious deception (systematically distorted communication) and conscious deception (manipulation). One of the concealed strategic behavioural types – the manipulative action - is a mere promotion and advertising of medicines. The broad availability and choice of OTC medicines and also the possibility to buy these medicines without doctor's advice, creates the illusion of consumer’s free choice and autonomy. In reality, the pharmaceutical industry using sales promotion strategies actually largely defines individuals’ needs, often creating a gap between consumer real needs and wants. The study in Latvia reveals an impact of the information regarding the promotion of medicines on the users in the following manner:

- About one third of the population who have trust in particular information sources (TV, radio, the Internet, newspapers and magazines, and medicinal brochures) consider this information to be fully or partly biased (commercial);
- The results show that trust in the information sources containing promotional material is associated with a more extensive use of OTC medicines;
- Trust in the information sources that contain promotional material increases the odds of using OTC medicines more than two-fold.

2. People in Latvia generally trust medical experts (GPs, physicians, nurses and physician assistants) and also pharmacists. The task of the health professionals is to balance strategic and communicative action by implementing patient-centred care principles – listening to patient’s opinion and accepting patient’s agency to OTC medicines. Medical experts should assume the role of “gatekeepers” and suggest trustworthy information sources for patients in order to raise their knowledge about medicines and medicinal products. Such approach has the potential to create adequate awareness of possible medicines use-related risks and therefore can be described as one of the lifeworld de-colonization tools.

The third group of conclusions consists of the evaluation of the role of individual’s holistic health.

1. Most of the Latvian people assess their health positively, and positive self-rated health is associated with a lower consumption of OTC medicines. A model that describes individual's decision-making process regarding medication use reveals that the decision regarding the use of medicines is based on one’s perception of actual or potential health problems. The study reveals that certain ailments (headaches and digestion problems), increases the odds of using OTC medicines several times.

2. Not only physical health but also other holist health components, such as lower level of vitality and mental health as well as lower life-satisfaction level, are associated with a more extensive use of OTC medicines. The data show that low vitality increases the odds of using OTC medicines several times.

The fourth group of conclusions contains some findings regarding medicine users’ rationality. This rationality may seem irrational from the system’s point of view, but actually it is one of the most important aspects of rationality that helps understand users’ behaviour. Therefore, the analysis of users’ rationality should be considered as an integral part of medicines use studies. The current study reveals such characteristics of the OTC medicines user’s rationality:
• Perceptions of a considerable part of the population in Latvia can be characterised as "pharmacomythologies" - beliefs that OTC medicines have only one type of effect - positive, and their use is not associated with risk. Such perception is very typical to the users of OTC medicines who are generally more focused on the benefits of these medicines rather than on negative aspects associated with their use. The data show that individuals possess false beliefs (OTC medicines cannot cause side-effects; vitamins and nutritional supplements should be used all the time) regarding the more frequent use of OTC medicines. In addition, the results of the analysis showed that false perceptions increase the odds of using OTC medicines for more than five times. More than half of the population believes that newer medicines are usually more effective, but more than third of the population – that more expensive medicines are more effective. Such views may contribute to unnecessary and excessive use of medicines, as well as to wasted resources.

• OTC medicines in Latvia possess so-called "social efficiency" that is revealed by the perceived necessity to use medicines at the sight of the first symptoms to be able to return to their everyday duties and regain social capacities. Such opinion is possessed by more than a half of the population. This effect can also be characterized as the manifestation of formal rationality - good health ensures the ability to implement social roles. The influence of the social efficiency on medicines use can also be characterized as the colonization of the lifeworld. Social efficiency is an evidence to the fact that the overall effect of the medicines extends beyond their pharmacological properties and is based on the meaning of these medicines in the individual’s everyday life;

• Users’ rationality, that manifests itself as perceptions of individuals regarding risks related to the OTC medicines, has the association within trustworthy information sources and one’s trust in health care experts. Individuals who have more trust in the information sources including medicines promotion tend to possess false beliefs regarding the risks associated with OTC medicines (“OTC medicines cannot have side-effects” and “vitamins and nutritional supplements should be used all the time”). As medicine promotion always emphasises benefits of OTC medicines such users’ rationality seems understandable and logical and is consistent with the theory of Giddens suggesting that in circumstances of the knowledge asymmetry individuals’ perceptions of risk are based on the trust in information sources.

The fifth group of conclusions includes the summary of the most characteristic OTC medicines use patterns and also the discussion of the hypotheses.

1. Similar to the tendencies elsewhere, the most popular OTC medicines in Latvia are painkillers, common cold medicines, a variety of vitamins and minerals, as well as medicines for digestive problems. The most often used medication in Latvia is Ibumeitin. Studies worldwide show that use of these medicines may often be non-rational - users fail to comply with doses, the use of these medicines for prolonged time period, disregard compatibility of these medicines with other products, etc. Therefore, elaborating programs promoting rational use of medicines, paying a particular attention to the aforementioned groups.

2. The use of OTC medicines has statistically significant correlation with gender, age, occupation and household structure – a typical OTC medicines user’s portrait in Latvia can be characterized as - "women, the elder people, retirees, households with comparatively smaller number of members, individuals with family status "divorced or widowed", residing in Riga, or in the suburbs of Riga". OTC medicines use determinants within the framework of this study are the following demographic factors - gender, age and place of residence:
   • Odds of using OTC medicines for women are twice as high as for men;
   • The age group of 35-54 have twice as high odds of using OTC medicines, if compared to the youngest age group (18-34);
   • People living in Riga and around Riga have up to four times higher the odds of using OTC medicines.
There are several demographic differences in relation to the use of different groups of OTC medicines. Medicines for digestion problems are more used among men, common cold medicines – among younger people; pain-killers are taken among the respondents, who belong to the medium age category and medicines for cardiovascular problems among elderly people.

The main reason for non-compliance with the given instructions is the lack of motivation that is based on previous experience; therefore, no negative effects were observed previously. These data suggest the necessity to raise the level of knowledge and awareness of OTC medicines users.

The majority of the population does not consult medical experts regarding the use of OTC medicines, but a variety of other information sources. Such behaviour might have several benefits - individual's own responsibility and empowerment increases. In order to reduce the risk of unreasonable or improper use of OTC medicines, it is necessary to provide unbiased information to consumers, raising their knowledge level, thus promoting for decolonization of the lifeworld.

Users’ of medicines’ behaviour in Latvia to a large extent comply with the tendencies elsewhere, however there are some patterns that are characteristic to the situation in Latvia. Five hypotheses can be confirmed, but one hypothesis has to be rejected:

1. The perceived necessity, properties and effectiveness of OTC medicines are among the most significant determinants of medicines use – hypothesis is confirmed - the results of the study show that not only statistically significant differences in OTC medicines use patterns with regard to the users’ rationality are detected, but also particular perceptions regarding OTC medicines increase the odds of their use;
2. The use of OTC medicines is related not only to the individual’s physical health status, but also to other holistic health dimensions like vitality, mental health and life-satisfaction - hypothesis is confirmed. There are statistically significant differences regarding OTC medicines use patterns in respect to holistic health status – OTC medicines are more used by individuals with lower holistic health ratios. Also, the decreased vitality increases the odds of using OTC medicines several times;
3. The use of OTC medicines is a component of the individual’s healthy lifestyle - hypothesis is confirmed. Individuals whose lifestyle is directed towards health maintenance or enhancement use OTC medicines more;
4. The individual's psychographic characteristics are associated with distinctive OTC medicines use patterns - hypothesis is confirmed;
5. Trust in information sources, containing medicines advertising, is associated with a comparatively more extensive use of OTC medicines- hypothesis is confirmed; not only distinctive patterns of OTC medicines’ use can be associated with trust in particular information sources, but also trust in sources containing promotional information increases the odds of OTC medicines use more than twice;
6. Wider perceived accessibility of OTC medicines and healthcare services promote for more intensive use of them - hypothesis is rejected.

Summarizing the abovementioned findings, it can be stated that the goals and objective of the thesis have been met – common patterns of OTC medicines use are detected. The framework of medicines use determinants, identified by the analysis of the theoretical literature, was empirically tested in Latvia, disclosing the correlation between different factors and OTC medicines use as well as the most characteristic determinants of OTC medicines use. Five hypotheses are confirmed with one hypothesis being rejected.
# 13. PUBLICATIONS RELATED TO THE THESIS

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<tr>
<th></th>
<th>Authors</th>
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<th>Journal/Conference</th>
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<tr>
<td>1</td>
<td>Salmane-Kulikovska, I., Mezinska S.</td>
<td>“I had to help my child!”: The role of emotions, risk, and trust in use of nasal decongestants in children”</td>
<td>Journal of Child Health Care (SAGE)</td>
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<td>2</td>
<td>Salmane-Kulikovska, I., Mezinska, S. Dobelniece, S., Rungule R.</td>
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<td>Salmane-Kulikovska, I., Dobelniece, S.</td>
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<td>Salmane-Kulikovska, I., Ivanovs, A.</td>
<td>„Internet as a source of health information in Latvia”</td>
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<td>11</td>
<td>Salmane-Kulikovska, I., Dobelniece, S.</td>
<td>“Sociodemographic characteristics of over-the-counter medicines’ users in Latvia”</td>
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14. CONFERENCE ABSTRACTS RELATED TO THE THESIS


2. **Salmane-Kuļikovska, I., Mezinska, S.** „Use of nasal decongestants for small children (0-6) in Latvia” European Sociological Association, the 10th Conference „Social Relations in Turbulent Times” (7.-10.09., 2011). Geneva, Switzerland.


10. **Salmane-Kuļikovska, I., Ivanovs, A.** „Lay Beliefs about Properties of Over-the-Counter Medicines” European Sociological Association, the 11th Conference „Crisis, Critique and Change”, 28.-31.08.2013.. Turin, Italy.

11. Ivanovs, A., **Salmane-Kuļikovska, I.** „Tuberculosis – Socioeconomic Characteristics” European Sociological Association, the 11th Conference „Crisis, Critique and Change” (28. - 31.08.2013). Turin, Italy.


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<td>2.</td>
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16. REFERENCES


