

LOGISTIC AND CONSTRUCTIVE ATTITUDE PERCEPTION OF PHARMACY STUDENTS TOWARDS MEDICINE

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Abstract

The present paper aims to highlight some particular aspects of pharmacy students training, focusing on the pharmacy students' attitude towards medicine, through cognitive and perceptive construction. The existence of such an attitude can lead to the implementation of new viable strategies towards education and self-education. A questionnaire-based survey was applied to pharmacy students of the Faculty of Pharmacy from Târgu Mureș, Romania, in 3 different stages of their academic development (students from the 1st year, the 3rd and the 5th year), to probe their perceptions and attitudes towards medicines, their use and value. The collected data was then processed and analysed and the responses interpreted usually in the sense that differences seen are not random, but are the expression of the influence of the educational system and academic gradual maturity on the student perspectives and perceptions. However, it is necessary for the pharmacy student to empower and acknowledge, the effect of various perspectives on medicine, highlighting the effects that occur at cognitive level, according to its educational status.

Rezumat

Lucrarea de față își propune să aducă în prim plan pregătirea în specialitatea Farmacie, a atitudinii logistice a studentului farmacist față de medicament, prin cunoaștere și construcție perceptivă. Existența unei asemenea atitudini poate duce la implementarea unor noi și viabile strategii vizând și elemente de educație și autoeducație. Ca metodă de analiză s-a folosit chestionarul, acesta adresându-se unui eșantion reprezentativ al Facultății de Farmacie din Târgu Mureș, România, având ca grup țintă, studenții farmaciști din anii I, III și V. Prin prelucrarea și interpretarea datelor s-a concluzionat faptul că studenții farmaciști chestionați au anumite atitudini față de medicament, în calitatea ce le-o dă statusul lor educațional și că e necesar a insista, prin strategii educaționale de construcții perceptive, asupra imaginii medicamentului, cât și a implicării sale din punct de vedere psihologic. Totodată, e necesară responsabilizarea și conștientizarea de către studentul farmacist, a efectului din varii perspective a medicamentului asupra sa, evidențiind relația ce există sau se manifestă, la acest nivel cognitiv.

Keywords: pharmacy students, medicine, effect, relationship, attitude

Introduction

Having an attitude towards medicines in general and for one in particular, means that one can acknowledge both its personal relationship and also its perception of the constructive act, towards the expected therapeutic effect. Rhetorical questions or not, may be asked in the cognitive sequence: When and at what age or social/educational status can one have a conduct, attitude or behaviour towards a particular medicine or another? What should one know about it? What does one know? What one does not know? What can one understand or not about medicines? How one relates to medicines? Why does one need adequate knowledge of this field?

In this context we considered that between the two "actors" – medicine and pharmacy student in our case – a link is needed, and also a starting point

towards a correct professional attitude and conduct, and this particular link is the patient. Therefore, the interaction starts from cognition, as the result of the perception of the pharmacy students towards medicines, the primordial elements in this context being education and self-education [2].

Materials and Methods

In our approach, we addressed to students from the Faculty of Pharmacy, Târgu Mureș, Romania, applying as research method a survey based on questionnaire. The questionnaire was designed to capture perceptive attitudes of pharmacy students towards medicines; containing dichotomous, closed, and free and multiple choice answers, thereby highlighting a large variety of expressions and own conceptual structures, targeting one item or another [12].

We enrolled in our study a group of 200 students from the Faculty of Pharmacy from Târgu Mureş: 76 from the 1st year, 68 from the 3rd year and 56 from the 5th year; with ages varying between 18/19 – 23/24 years, men and women. The analysed sample is representative for the population of pharmacy students from the Faculty of Pharmacy from Târgu Mureş, as the number of students presented above represents around 90% from the total number of students from the concerned academic years. The choice of the three years of study is certified by the following considerations:

a) in the 1st year, pharmacy students are at the beginning of their professional training, their medicine related expertise is low, the information that they hold on medicines have generally another source apart from the faculty, consequently their attitude towards medicine can encode only a certain perceptive behaviour;

b) in the 3rd year, pharmacy students are in the middle of their professional training, the amount of medicine related knowledge already beginning to crystallize, their information on medicines is more authorized and documented, consequently the perception on medicines is well defined and also receives a personal touch;

c) in the 5th year pharmacy students are very close to the end of their professional training, the ethical conduct of responsibility and professionalism towards medicine begins to crystallize along with development of a personal attitude towards medicine, all this being correlated with a higher level of professional knowledge.

Basically the three selected years of study, represent in our opinion, the timing of beginning – accumulation – strengthening and the results of the professional development of pharmacy students in their constructive-perceptive attitude towards medicine.

The questionnaire and the structural data of the answers are presented in Tables I - IV.

Results and Discussion

The current study started from the idea that, in terms of professional development oriented towards the relationship between pharmacy student and medicine, it is necessary to find a way for a correct perceptive attitude and construction, which will lead to exceptional ethical conduct, with a common denominator and beneficiary – the individual/client/patient/sick person [3]. The study started from the perception that the medicine is identified by two of its aspects, namely by its medicinal aspect (organic involvement “for the body”) and its psychological aspect (psychological involvement “for the soul”) [5]. This prior notice is necessary because, one person’s attitude and reaction towards medicines may vary and can be specific and even difficult to understand and clarify, being based on positive or negative earlier experiences [11]. It can be added that, the identity of the medicine is also a factor for a deficient perception in all aspects, which leads to the bipolar relationship between health and healing. This is the moment when, depending on the level of the educational status of the pharmacy student, it is necessary to find cause – effect relationships, when the attitude outlined earlier develops upon the medicine itself. This can be the point of strategic motivation in statements such as: too few, too many, enough, required, can do without them; can decode a constructive/ destructive attitude at the perception level of the medicine [8].

Therefore, the questionnaire results captured the following aspects presented below. Items 1 - 3 (Table I).

Table I

Structured data regarding questionnaire answers on years of study (items 1-3)

Items	Possible answers	1 st year	3 rd year	5 th year
1. Do you use medicines?	a) yes;	46%	19%	66%
	b) no;	-	3%	-
	c) rarely;	25%	32%	25%
	d) often;	3%	2%	-
	e) depends on the situation.	27%	44%	9%
2. On whose recommendation do you use medicines? (2 options)	a) pharmacist;	39%	38%	47%
	b) family;	16%	10%	9%
	c) friends;	1%	3%	-
	d) physician;	44%	44%	31%
	e) colleagues;	-	2%	2%
	f) acquaintances.	-	4%	3%
3. Do you trust the effect of medicines?	a) yes;	80%	91%	80%
	b) no;	-	-	-
	c) I don't know;	3%	-	-
	d) I'm not interested;	13%	9%	20%
	e) sometimes.	4%	-	-

The answers vary according to personal perception of involvement, standing out the fact that perception is modified by the accumulation of information by the student in a certain period of time (item 1). The answers for the 1st and 3rd year remain constant with the recommendation being made by the physician and pharmacist, and were slightly modified for the 5th year where the importance of pharmacist recommendation increases to the detriment of the physician (item 2). The importance of the family opinion upon medication decreases from 1st to the 5th year, because students gain independence during this period. Item 3 describes a situation mentioned previously, perceived as constructive, the progression for the answer “yes” being obvious, as for the 5th year the attitude towards medicine being outlined and highlighted.

Items 4 - 7 (Table II). Item 4 highlights the personal implications, particularly behavioural-emotional-volitional attitudes towards medicines. If we

compare the most frequent answers “yes - sometimes” we can observe that certainty increases during educational development, along with the decrease of uncertainty in the acquisition of qualitative information – in the senior years (III-V). The first correlation can be made between items 3 and 4, in terms of self-knowledge and self-confidence, as demonstrated by the following statements: “yes, I trust the medicines effects”, “yes, medicines really help me” supported by the results. For item 5, it is remarkable the large variety of responses, the “dispute” for the first place being between “capsules-tablets-syrup”, the motivation being the everyday perception towards pharmaceutical forms. It is interesting to notice the increasing trend for the use of homeopathic preparations in the senior years. The specialized information received in the 1st year starts to emerge, with ascendancy in perception during the 3rd and 5th year, being outlined as a beginning of an own opinion (item 6).

Table II

Structured data regarding questionnaire answers on years of study (items 4-7)

Items	Possible answers	1 st year	3 rd year	5 th year
4. Do you think that medicines really help you?	a) yes;	54%	69%	64%
	b) no;	-	-	-
	c) I don't know;	3%	-	16%
	d) I'm not interested;	1%	-	-
	e) sometimes.	42%	31%	20%
5. In which pharmaceutical form do you prefer medicines?	a) capsule;	33%	29%	36%
	b) tablet;	25%	26%	38%
	c) syrup;	22%	24%	9%
	d) solution;	-	4%	8%
	e) homeopathic preparation;	5%	7%	9%
	f) ointment;	12%	10%	-
	g) injection.	3%	-	-
6. With what could you replace medicines?	a) with anything;	13%	14%	39%
	b) with tea;	20%	17%	26%
	c) with natural treatments;	50%	47%	26%
	d) with empirical cures;	1%	3%	-
	e) with indifference;	1%	-	-
	f) with alternative treatments.	15%	19%	9%
7. When are you using medicines?	a) when it is absolutely necessary;	74%	87%	73%
	b) preventive;	-	4%	9%
	c) when I have a health problem;	20%	6%	18%
	d) when I have no other option;	6%	3%	-
	e) never.	-	-	-

Item 7 proved to be the element of responsibility towards a quantified gesture. It is noticeable that, the relationship between answers “a” and “c” is significant for the 1st year; in the 3rd year only necessity prevails while for the 5th year the percentage of 91% shows the responsibility towards the medicinal product and also for preventive therapies. Another correlation can be made between items 5, 6 and 7, in terms of necessity of medication and therapeutic efficiency. There is a significant link between the answers “depends –

when absolutely necessary – when I have a health problem” and also the cognitive development of prevention. Important is the development of awareness regarding the necessity of using medicinal therapy, exemplified previously [11]. In the items 8 - 12 (Table III) aspects of pharmaceutical marketing are presented, considering the medicines appearance and characteristics. Non-involvement seems consistent in appearance, but the interest towards this aspect grows in the 3rd year. For the 5th year this growing interest becomes

a certainty related to a precarious balance between answers “b, c, d”, attributed to the lack of interest or simply to the lack of awareness towards elements of psychology used in medicines advertising. The drugs image is one that come first, completed with the mental induction “*is small, with great effect, it scares me, it scares me not*”, as the 1st and 3rd year students preferred small medicines, while in the 5th year, the “size” increases to round and oblong, which proves diversity in accepting a product. Beside this contact, the inconsequential shape coding, identifies indifference about this dispute, preferring the effect to the image. Shape is followed by colour, where answers “a + b” denote compliance as stated by the antithesis: “*I do not*

care – any colour”, where we think that even a modest correction through an appropriate educational system, counts at the level of the product design. For the 5th year, a slight disinterest it is noticeable, as 25% responded “*I haven’t thought about it*”, which leaves the impression of detachment and encourages a certain attitude towards medicines. The taste of medicines is important and highlights a previous experience, especially for the 5th year. This item involves elements of communication with the patient, because information received by the patient may include at some point, data, which can trigger a positive or negative reaction [8].

Table III

Structured data regarding questionnaire answers of pharmacy students of different years of study (items 8-12)

Items	Possible answers	1 st year	3 rd year	5 th year
8. Are you interested in the appearance of medicines?	a) yes;	45%	36%	54%
	b) no;	26%	23%	14%
	c) I’m not interested;	5%	9%	16%
	d) I haven’t thought about it.	24%	32%	16%
9. In your opinion how would you prefer medicines to look like?	a) large;	-	-	-
	b) small;	53%	53%	36%
	c) round;	-	6%	26%
	d) square;	-	-	-
	e) convex;	-	-	9%
	f) oblong;	-	-	-
	g) It doesn’t matter.	47%	41%	29%
10. In your opinion what colour would you prefer medicines to have?	a) any colour;	47%	51%	52%
	b) not interested;	27%	25%	23%
	c) not applicable;	3%	9%	25%
	d) I would prefer the colour....	7%	15%	10%
	Pink	2%	3%	2%
	White	1%	3%	3%
	Blue	2%	-	-
	Green	-	2%	1%
	Red	1%	1%	-
	Violet	-	1%	-
11. Do you consider that the taste of the medicines is important?	a) yes;	63%	63%	79%
	b) no;	18%	27%	5%
	c) I don’t know;	4%	-	5%
	d) I’m not interested;	3%	3%	4%
	e) I haven’t thought about it.	12%	7%	7%
12. Do you consider that the smell of the medicines is important?	a) yes;	53%	61%	82%
	b) no;	26%	23%	4%
	c) I don’t know;	4%	-	5%
	d) I’m not interested;	8%	9%	2%
	e) I haven’t thought about it.	9%	7%	7%

Item 12 can encode the current attitude of pharmacy students, and can be linked with the necessity of education focused on medicines in the training of future specialists, element represented by the percentage for the answer “c”. Another correlation can be made using the items 10, 11 and 12 which characterize the medicine impact on senses: vision (question 10), taste (question 11), smell (question 12). This characterizes the

perceptual cognition of the pharmacy student on the product and the possible attitude it may have towards the patients in the case that it will be placed in a position to express opinions upon the identity from various perspectives of some medicines. It is remarkable that over 60% of the respondents answered affirmatively regarding the importance of these sensorial aspects, the rest being divided between the undecided (“*I don’t know, I’m*

not interested, I haven't thought about it" - around 30%) and those who don't believe in the importance of the items stated above. Certainly advertising psychology takes account of customer's preferences, influencing the attitude of the future pharmacist, transforming it from a simple executing person to an active person, directly involved in presenting the product [10].

Items 13 - 17 (Table IV). Item 13 analyses the responsibility, therefore if we compare answers from the 1st year with the 3rd and especially 5th year, an accumulation of knowledge is noticeable, based on information acquired at a certain level of education, information still unprocessed professionally. The 80% "yes" for the 5th year captures the moment where decision together with accumulation of expertise stands out, these students being very close to the status of pharmacists, when the whole attitude is closely related to the development of their professional personality. The psychological impact of medicines upon the pharmacy student is decoded, in order to capture

particular correlations (item 14). It is necessary to appreciate the psychological impact upon the beneficiary in general regarding its relationship with the medicine, because the "healing" process involves also communication as it is recommendable for the pharmacist to speak and advise the patient when making a recommendation, not just to dispense the medicine without any explanation. In the same context we can make another correlation, having as turning point the therapeutic effects of the medicine, and leading ultimately to the attitude towards medicine of the pharmacy student, attitude which will influence his future professional development (items 14 and 15). Even if the results for the 1st year can be considered "less relevant", the results for the 5th year are more relevant in the idea that the student is very close to the practical act itself, and also to its new socio-professional status. This can bring some motivational interpretations in context of time, place and educational status [4, 9].

Table IV

Structured data regarding questionnaire answers of pharmacy students of different years of study (items 13 -17)

Items	Possible answers	1 st year	3 rd year	5 th year
13. Do you get involved in your medical treatment?	a) yes;	58%	32%	80%
	b) no;	5%	27%	4%
	c) I'm not interested;	-	15%	-
	d) occasionally;	30%	23%	16%
	e) sometimes.	7%	3%	-
14. Do you think that medicines have a psychological impact on you?	a) yes;	26%	32%	61%
	b) no;	33%	25%	9%
	c) I don't know;	12%	10%	9%
	d) I'm not interested;	-	-	-
	e) minimum;	29%	25%	21%
	f) maximum.	-	3%	-
15. If yes how can you describe it?	a) I feel good;	20%	24%	27%
	b) It calms me down;	-	13%	23%
	c) I heal;	80%	57%	50%
	d) It makes me nervous;	-	2%	-
	e) creates a certain mood.	-	4%	-
16. At the moment do you have the competence to get involved in a medical treatment?	a) yes;	65%	68%	73%
	b) no;	4%	2%	-
	c) I don't know;	-	6%	11%
	d) I'm not interested;	7%	4%	7%
	e) slightly;	7%	3%	-
	f) largely;	17%	17%	9%
	g) sometimes.	65%	68%	73%
17. After becoming a pharmacist will you recommend medication? (2 options)	a) yes;	-	4%	23%
	b) no;	47%	31%	-
	c) when it's necessary;	4%	3%	12%
	d) it's my duty;	-	-	-
	e) certainly.	44%	50%	45%

Item 16 captures aspects of the future pharmacist competence – role, place and position, but also the fact that pharmacy students are not yet authorized to exercise these competences. However the answer "no" is predominant, together with the desire of the

students to demonstrate that they have the knowledge, which he can apply in the future profession, to a limited extent, but the answer "yes" appears strongly in the 5th year as a pretext for the future profession. It is also noticeable that ethic

elements are necessary to implement in the student evolution when their efficiency in the pharmacy student training is maximum, determining its future professional attitude [13, 14, 15]. Another correlation can be made (with item 3) in terms of skills and competence regarding the involvement in a medical treatment, the percentage of 88% for the 5th year supporting the data mentioned above. Item 17 can be strongly related with item 2, capturing the attitude of the pharmacy students towards medicines, taking in consideration the “team” physician-pharmacist regarding medicines recommendation, and their responsibility after graduation. Students from the 5th year acquire a strong professional attitude that subsequently develop and strengthen further during their professional careers [7].

Conclusions

The results of the questionnaire capture elements of strategic methods that can be implemented in the future training of pharmacy students, and also their attitude towards medicines; attitude that should be primarily based on cognition. In this context it is necessary that besides specialized professional information, the training of the pharmacy student should contain several educational sequences targeting the educational attitude of pharmacists towards all aspects concerning medication. In addition to these connotations, it emerges the idea of knowledge by the pharmacy student, of the internal and external image of medicine, which may trigger a certain professional behavior in the medicine therapy management, as determined by addressing an attitude full of responsibility, honesty and professional integrity [1, 5, 6].

Actually, the research conducted by us, makes a clear statement, in validating the necessity to implement in the training of pharmacy students a strategy in order to determine an interaction between attitude and cognition, leading to a new design concept and a new perception of the student towards medicines; the “race” between the two actors starting from the concept “*Primum non nocere*”, a collaboration being absolutely necessary and also being expressed through coefficient quality and professional integrity.

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