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# Health Literacy of Patients with Regard to The Source of Information: A Cross-Sectional Study

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**Article received:** 18.05.2022.

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**Article accepted:** 05.07.2022.

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<https://doi.org/10.24141/2/6/2/1>

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**Keywords:** patient, health information, health literacy, source of information

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## Abstract

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**Introduction.** It is the right of the patient to be informed by the medical staff about the treatment procedures so that the patient can be aware and responsible of the subject of treatment.

**Aim.** The aim of this study was to gain insight into the information provided to the patient by medical staff, understanding of the information obtained and the use of written educational materials and the Internet to gain information about diseases among patients of primary and secondary health care. The aim was to determine whether there are differences in the level of knowledge among patients with regard to the source of information.

**Methods.** A cross-sectional study with three groups of patients was conducted using a questionnaire created for this study.

**Results.** Out of a total of 300 patients, 49% (147) claim that the most common source of information is a specialist doctor, while 29% (87) claim that their sources of information are nurses. A total of 48% (144) of patients claim that the information is incomprehensible and 83% (249) have not received educational materials. 79% (237) want to receive educational materials.

**Conclusion.** According to the results of the study, it can be concluded that patients, regardless of the group they belonged to, are equally uninformed. Informing the patient is an integral part of the treatment and must be tailored to each patient individually.

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## Introduction

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Nowadays, health care and treatment of the patient is becoming more complex and therefore requires the patient to actively participate in their care. The newer approach to the doctor-patient relationship is based on patient-centered health care, in which decisions related to the patient's health are made by the doctor and the patient (1). This process emphasizes collaboration between the physician and patient and enables the patient to co-decide by being given all the information related to their illness, specific diagnostic and therapeutic procedures, as well as alternative treatment procedures (2,3).

Health literacy is the newest prevention strategy to live longer, healthier lives. Health literacy represents the degree to which individuals have the capacity to obtain, process and understand basic health information and services needed to make appropriate health decision. Nurses are among the most essential players in making health literacy an effective and lasting reality. Nurses need to start asking some crucial questions in order to take some proactive steps in the right direction, both for patients and themselves (4). A lack of health literacy may have effects at many levels, from the individual to the societal. Examples include incorrect use of medications/assistive aids, lack of knowledge about health decisions, misinterpretation of instructions or symptoms, absence from booked health care visits, unnecessary examinations or surgery, increased need for hospital treatment and security risks at home, at work or in society (5,6). A health professional's role is to translate complex scientific and medical information into words and concepts that patients and families can understand. This is a challenge especially when time is limited and information is complex, ambiguous, or conflicting. Health professionals must learn and perform health literacy techniques. Reports cannot simply be given to the patients with the belief that they will understand them. Patients are reluctant to ask questions because they do not want to show that they may not know the answers. Recent studies have shown that 85% of patients received complete, understandable information, presented in a considerate manner. Patients in surgical departments received a higher level of information than those in internal medicine departments. Patients were informed about health

risks of the proposed treatments (in 74% of cases) and procedures (76%), health consequences of refusing a medical intervention (69%), and other methods of treatment (46%). However, patients pointed out several problems in the physician-patient communication (7). Market research shows that today in Croatia the Internet is used by about two-thirds of the population over the age of 15, of which 22% use the Internet to seek information on health and nutrition (1).

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## Methods

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### Design

A cross-sectional study with three groups of patients was carried out at the Institution for Home Health Care "Domnius" in Zagreb, Croatia. The data were collected over a period of approximately 3 months (10 February 2021-15 May 2021).

### Participants

The study involved 300 participants (100 participants were patients discharged from inpatient surgical treatment newly admitted to home care, 100 participants were patients discharged from inpatient internal medicine newly admitted to home care, and 100 participants were Domnius Home Health Care patients in long-term care). All 300 respondents were users of the Domnius Home Health Care Institution.

The study was conducted in the city of Zagreb. The inclusion criterium was that patients be aged > 18. The patients gave informed consent for participation in the study. The questionnaire was anonymous, and participants were informed that they were free to stop participating in the study at any time. After a thorough written and oral explanation of the ethical principles, purpose, and course of the study, patients were asked to provide their informed consent. The nurses handed out a questionnaire in a sealed envelope to the patients and explained how to complete it, as well as the purpose of the study.

## Ethics

The study was approved by the Ethics Committee of the Domnius Home Health Care Institution in Zagreb, Croatia at its regular session held on February 8, 2021. The ethical Committee of the Domnius Home Health Care Institution operates in line with the International Conference on Harmonization (ICH GCP) principles and the Helsinki Declaration (8).

## Instrument

The research instrument was a questionnaire created for this study. The patients answered 13 closed questions. The first two questions were about the source of information about the disease (nurse, family doctor, specialist, or patient), then about the procedure, tests and therapy. The next three questions were about understanding the information obtained, two about using the Internet for information, two about the duration of the interview with the doctor, two on written educational materials and two on information about the medications they are taking.

## Statistics

According to the results, appropriate non-parametric statistical tests were used in the following analyses. Non-parametric methods are used primarily for data

expressed on nominal and ordinal scales. Differences in the categorical variables were analysed with the chi-square test. P values below 0.05 were considered significant. Statistical software IBM SPSS Statistics, version 25.0 was used in all statistical procedures. Descriptive statistics which deal with the organization of collected data and their summary description with the help of numerical and graphical representations were also used.

## Results

In the questionnaire created for this study, 13 questions were asked, and seven questions are singled out. These are core questions of the study, and the results (answers) of the participants are listed below.

Based on the obtained results, it can be concluded that the proportions of surgery, internal and home health care patients differ significantly with regard to the source of information about the disease. Specialist doctors are the most common source of information (around 67%).

Table 1. Differences in data between the three groups of participants

Who gave you the information about the disease? Observed frequencies						
	Family doctor	Specialist	Nurse	Self-education	Specialist and nurse	Total
Surgery	20	70	4	3	3	100
Internal medicine	12	80	4	3	1	100
Home health care	37	53	1	3	6	100
Total	69	203	9	9	10	300

$$\chi^2=25.5$$

$$df=8$$

$$p<0.001$$

**Table 2. Source of information about surgical procedures, tests and therapy**

Observed frequencies					
	Family doctor	Specialist	Nurse	Self-education	Total
Internal medicine	7	85	6	2	100
Surgery	4	82	13	1	100
Home health care	34	54	11	1	100
Total	45	221	30	4	300

$$\chi^2=47.4$$

$$df=6$$

$$p<0.000$$

Based on the obtained results of the chi-square test, it can be concluded that the proportions of surgery, internal and home health care patients differ significantly with regard to the source of information about surgery, tests or therapy. It can also be concluded that specialist doctors are the main source of information based on the frequency of answers/responses (74%).

**Table 3. Understanding information in primary and secondary health care patients**

Observed frequencies				
	Yes	No	Partially	Total
Secondary	104	12	84	200
Primary	52	8	40	100
Total	156	20	124	300

$$\chi^2=0.465$$

$$df=2$$

$$p=0.793$$

Based on the obtained results, it can be concluded that the shares of primary and secondary health care patients do not differ significantly in terms of understanding information.

**Table 4. Understanding information in patients in surgery, internal and home health care**

Observed frequencies				
	Yes	No	Partially	Total
Internal medicine	52	8	40	100
Surgery	52	4	44	100
Home health care	52	8	40	100
Total	156	20	124	300

$$\chi^2=1.86$$

$$df=4$$

$$p=0.762$$

On the basis of the obtained results, it can be concluded that the shares of surgery, internal care and home health care patients do not differ significantly with regard to the understanding of information.

**Table 5. Comparison of the level of information between hospital patients and home health care patients**

Observed frequencies			
	Yes	No	Total
Patients in hospital care (newly admitted to home care)	35	165	200
Patients in home health care	16	84	100
Total	51	249	300

$$\chi^2=\text{Yates chi-square } 0.03$$

$$df=1$$

$$p=0.8625$$

There is no statistically significant difference, and patients are equally uninformed regardless of the group to which they belong.

**Table 6. Distribution of written/educational materials among patients in surgery, internal and home care**

Observed frequencies			
	Yes	No	Total
Internal medicine	25	75	100
Surgery	10	90	100
Home health care	16	84	100
Total	51	249	300

$$\chi^2=8.08$$

$$df=2$$

$$p<0.018$$

Based on the obtained results of the chi square test, it can be concluded that the shares of patients in surgery, internal and home health care differ significantly in terms of receiving educational materials. 83% (249) have not received educational materials.

Also, based on the obtained results ( $\chi^2=9.10$ ;  $df=2$ ;  $p<0.011$ ), it can be concluded that the shares of patients differ significantly in terms of patients' interest in receiving educational materials, and that the vast majority of them want to receive educational materials. 79% (237) want to receive them.

When asked about their *understanding* of the information obtained, a total of 48% (144) participants answered that they did not fully understand the information obtained.

Regarding the use of the Internet for the purpose of finding information about the disease among the primary and secondary groups of patients, the results ( $\chi^2=$ Yates chi-square 0.48,  $df=1$ ,  $p<0.488$ ) show that there is no statistically significant difference in the use of the Internet for the purpose of finding information.

## Discussion

The study was conducted on a sample of 300 patients. Our study has shown that patients are poorly informed, but the most common source of information is a specialist doctor (Table 2). Braddock et al. (9) indicate that surgeons dedicated more time to informing their patients than general practitioners, and that general practitioners ought to be more involved in decision-making. The level of patient information in hospital care does not differ significantly in relation to nursing care patients, and patients are equally uninformed regardless of the group to which they belonged. Most patients who did not receive educational materials would like to receive them. There is no statistically significant difference in the use of the Internet for the purpose of finding information about the disease among the primary and secondary groups of patients. Slightly more than 50% of the participants understand the information received.

On the other hand, a survey conducted in Vermont in the United States obtained different results. The population examined in this study differs from many other studies on health literacy as it is more educated and less racially and ethnically diverse (10). But there is still a high prevalence of limited health literacy in hospitalized patients, where more patients with a low health literacy rate will be admitted to hospitals than those with adequate knowledge (11). In this group of hospitalized patients, the high prevalence of limited health literacy may be associated with reduced cognitive abilities, impaired vision and fatigue, and health literacy may improve after remission (12). Some authors suggest avoiding medical jargon, breaking down information or instructions into small concrete steps, limiting the focus of a visit to three key points or tasks, and assessing for comprehension by using the teach back cycle. Printed information should be written at or below sixth grade reading level. Visual aids can enhance patient understanding (13).

Research carried out in two Lithuanian counties by random sampling of eight hospitals showed that almost 68% of patients reported that nurses in the ward gave sufficient information about their disease. The survey highlights the positive example of the British National Health Service, with a strong focus

on disease prevention and patient information, involving nurses in the health care process (14). The most demanding patients with higher literacy rate reported that nurses did not provide them with enough information about their disease, procedures, or preparation for surgery. Many patients have low health literacy skills, and have difficulty with reading, writing, numeracy, communication, and, increasingly, the use of electronic technology, which impedes access to and understanding of health care information (13).

Research carried out in hospitals in Ontario was intended to measure the health literacy in hospitals by using a new questionnaire for organizational research and conducting psychometric testing of the survey. This measurement has achieved its goal of making hospital managers understand their impact and help focus their efforts in order to improve the quality of patient care and thus reduce readmission to the hospital. This leads to the possibility of improving patient care, reducing hospital costs and reducing the readmission rate (15).

Nowadays, great importance is given to health literacy in the medical and public health perspectives. However, a recent study showed that health literacy was not a priority in home health care. Instead, home care workers wanted training in many aspects of providing home-based care. Furthermore, a core health literacy curriculum checklist for homecare workers does not exist. In that study, the authors draft a training checklist for improving health literacy support which consists of eight key areas. The eight key areas on the checklist are consultation with home care workers, consultation with patients, outlining boundaries and scope of practice, listing key organizational contacts, listing relevant services and networks, including patient case studies and scenarios to illustrate various points, building in strategies to check understanding of the topic, and evaluating the effectiveness of the training. Incorporating these areas into any existing in-house home care workers' training is aimed directly at improving health literacy and subsequent health outcomes for a patient (16). The patient's right to be informed is an integral part of the treatment and strengthens the patient's role in the treatment process, which ceases to be an object of treatment and becomes conscious and accountable to the subject. According to the Institute of Medicine, half of the population of adult people are not able to comprehend basic health informa-

tion and services needed for making proper health decisions (17). Proper communication between professionals in health care and patients guarantees good patient-physician understanding, which affects patient satisfaction, agreement, medical outcomes, cost-containment and in general, health care quality (18,19). Health literacy involves personal, cognitive and social skills that determine the individual's ability to gain access, understand and use (medical) information to promote and maintain good health.

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## Conclusion

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The results of the study show that the health system has to be more engaged in promoting prevention and treatment options. Patients are equally uninformed regardless of the group which they belonged to. The health system is not adequately prepared for providing information. For better health literacy, a family doctor and nurse should be more involved. Informing the patient is an integral part of the treatment and must be adapted to each patient individually. One of the features of the duty to provide information to patients is that it is both moral and legal at the same time. Also, patients are not familiar which websites provide more detailed and correct information. The degree of health literacy is directly linked to communication, which greatly affects patient mobility, outcome of treatment, frequency of use of health care, costs and the overall quality of health care.

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## ZDRAVSTVENA PISMENOST BOLESNIKA S OBZIROM NA IZVOR INFORMIRANJA: PRESJEČNA STUDIJA

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### Sažetak

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**Uvod.** Pravo je bolesnika primiti informacije od medicinskog osoblja o postupcima liječenja kako bi bolesnik mogao biti svjestan i odgovoran subjekt liječenja.

**Cilj** ovog istraživanja bio je steći uvid u informiranost bolesnika na temelju podataka koje primi od medicinskog osoblja, razumijevanje dobivenih informacija te primjenu edukativnih pisanih materijala i interneta u svrhu informiranja o bolesti. Cilj je bio utvrditi postoje li razlike u razini informiranosti bolesnika s obzirom na izvor informiranja.

**Metode.** Ispitivanje poprečnog presjeka s tri skupine bolesnika provedeno je s pomoću upitnika kreiranog za ovu studiju.

**Rezultati.** Od ukupno 300 bolesnika, 49 % (147) tvrdi da je najčešći izvor informacija liječnik specijalist, dok je za 29 % (87) izvor informacija medicinska sestra. Sveukupno 48 % (144) bolesnika smatra da su informacije nerazumljive te 83 % (249) nije dobilo edukativne materijale, a želi ih primiti 79 % (237).

**Zaključak.** Prema dobivenim rezultatima istraživanja može se zaključiti da su bolesnici bez obzira na skupinu u kojoj se nalaze podjednako neinformirani. Informiranje bolesnika sastavni je dio liječenja i mora se prilagoditi svakom bolesniku individualno.

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**Ključne riječi:** bolesnik, zdravstvena informiranost, zdravstvena pismenost, izvor informiranja

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