









Original Research

Oncological patient management on the territory: the results of a survey in the north-west of Italy

Francesca Baratta , Irene Pignata , Gaia Vicenzi, Lorenzo Ravetto Enri , Pietro Quaglino , Alessandro Comandone , Ada Ala, Massimiliano Icardi , Rosella Spadi , Paola Brusa 

Received (first version): 27-Jul-2022

Accepted: 05-Sep-2022

Published online: 10-Oct-2022

Abstract

Objective: To investigate the role of community pharmacists in the therapeutic process of oncological patients and to assess these patients' state of acceptance of their disease and their relationship with their therapies, we performed a survey in some oncological clinics in Turin (north-west of Italy). **Methods:** The survey was carried out in a three months' period by means of a questionnaire. The questionnaire was administered on paper to oncological patients that attended 5 oncological clinics in Turin. The questionnaire was self-administered. **Results:** 266 patients filled out the questionnaire. More than half of patients reported that their cancer diagnosis interfered with normal life very much or extremely and almost 70% of patients reported that they were accepting of what happened and were trying to fight back. 65% of patients answered that it is important or very important that pharmacists are aware of their health status. About 3 out of 4 patients thought that pharmacists giving information on medicines purchased and on how to use them is important or very important and that it is important to receive information concerning health and the effects of medication taken. **Conclusion:** Our study underlines the role of territorial health units in the management of oncological patients. It can be said that the community pharmacy is certainly a channel of election, not only in cancer prevention but also in the management of those patients who have already been diagnosed with cancer. More comprehensive and specific pharmacist training is necessary for the management of this type of patient. Furthermore, it is necessary to improve the awareness of this issue in community pharmacists at the local and national levels by creating a network of qualified pharmacies developed in collaboration with oncologists, GPs, dermatologists, psychologists and cosmetics companies.

Keywords: community pharmacy; oncological patients; oncological therapies; disease acceptance; survey; patients' management

Francesca BARATTA*. Department of Drug Science and Technology, University of Turin, Turin, Italy. Francesca.baratta@unito.it

Irene PIGNATA. Department of Drug Science and Technology, University of Turin, Turin, Italy. irene.pignata@unito.it

Gaia VICENZI. Psychologist Psychotherapist Cognitive and Behavioral, Pavia, Italy. gaiavicenzi@gaiavicenzi.com

Lorenzo Ravetto ENRI. Department of Drug Science and Technology, University of Turin, Turin, Italy. lorenzo.ravettoenri@unito.it

Pietro QUAGLINO. Department of Medical Sciences, Dermatologic Clinic, University of Turin, Turin, Italy. pietro.quaglino@unito.it

Alessandro COMANDONE. Oncology unit, San Giovanni Bosco Hospital, Turin, Italy. alessandro.comandone@aslciudaditorino.it

Ada ALA. Unit of Breast Surgery, Department of General and Specialistic Surgery, Città Della Salute e Della Scienza, Turin, Italy. aala@cittadellasalute.to.it

Massimiliano ICARDI. Second Medical Oncology Division, Città Della Salute e Della Scienza, Turin, Italy. micardi@cittadellasalute.to.it

Rosella SPADI. Department of Oncology, Medical Oncology, 1, Città Della Salute e Della Scienza, Turin, Italy. rspadi@cittadellasalute.to.it

Paola BRUSA. Department of Drug Science and Technology, University of Turin, Turin, Italy. paola.brusa@unito.it

INTRODUCTION

Accounting for approximately one in six deaths, it is well known that cancer is one of the leading causes of death worldwide.^{1,2} A quarter of the world's cases of cancer occur in Europe although only a tenth of the world's population lives there.³ The most commonly diagnosed types of cancer are skin, breast, lung, colon and rectum, prostate, and stomach.^{2,4} In Italy, 1,000 new cases of cancer are diagnosed every day, and it is estimated that one in two men and one in three women will contract cancer throughout their lifetimes and this probability increases with increasing age.^{5,6}

Up to half of cancer deaths can be prevented by changes in behaviour, the avoidance of some risk factors and improvements in screening strategies. The best known impacting factors are smoking, a poor or bad diet, HPV or hepatitis infections, air pollution, radiation exposure, alcohol use and being overweight. Early diagnosis and the correct management of oncological patients can also reduce cancer burden.^{2,7-15}

Cancer may be treated in different ways including via surgery, radiation, chemotherapy hormone therapy, targeted therapy and immunotherapy. Treatment almost always result in some Adverse Drug Reactions (ADRs), which can vary from hair loss to nausea and vomiting, from fatigue to urinary problems, from sleep problems to skin and nail changes and many others.¹⁶ For these reasons, living with cancer can strongly impact upon the quality of life of oncological patients.



Cancer is almost completely managed at a centralized level. In Italy, oncological patients usually receive their diagnosis and therapy as well as follow-up visits in hospitals. However, also community pharmacies can certainly be counted among the places in a territory where these patients may be helped. Indeed, community pharmacies are very much widespread; it is estimated that every European citizen can reach their nearest pharmacy within 30 minutes and almost 60% within 5 minutes.¹⁷ Moreover, community pharmacies have very long opening hours that can meet almost everyone's needs and customers do not need appointments. Community pharmacies can also offer qualified advice and a range of different services and products. In Italy, oncological patients can get some anticancer drugs in community pharmacies. Furthermore, pharmacists can play a role in the pharmacovigilance of those medicines. They can also provide, if adequately trained, counselling on ADR management, and on small precautions related, for example, to nutrition or lifestyle habits that can improve the person's quality of life. Furthermore, they can also recommend medical or cosmetic products to reduce the impact of the ADRs of therapies, for example on the skin (creams, lotions, cleansers) as well as cosmetic products to hide defects in the skin, hair and nails (face powder, eyebrow pencils).

We have carried out a survey to investigate the role of community pharmacists in the therapeutic process of oncological patients and to assess these patients' state of acceptance of their disease and their relationship with their therapies. Furthermore, we aim to investigate the characteristics of oncological patients that attend clinics and the usefulness of self-administered questionnaires to collect this type of information.

METHODS

The survey was carried out in a three months' period by means of a questionnaire. The questionnaire was administered on paper to oncological patients that attended 5 oncological clinics in Turin (north-west of Italy). Every patient was informed, by a nurse, of the aims of the study and invited to participate. The questionnaire was self-administered.

The questionnaire was written thanks to cooperation between psychologists, pharmacists, clinicians and academics.

It was composed of 18 closed-ended questions and one half-open question. It was divided into two sections, with the first being called "Demographic / Clinical Data" and the second "Data on medicines taken".

The first section included questions about sex, age, oncological diagnosis, time of diagnosis and treatment type. Furthermore, patients were asked about their attitude to diagnosis, about how much this has interfered with everyday social and work activities, and in what phase of reaction to diagnosis they were.¹⁸

The second section included questions about the patient's perception of the utility of medicines before and after diagnosis. The questionnaire also investigated whether the

patient was able to adhere to the therapies as he expected. Furthermore, some questions were about the topic of "community pharmacies". In particular, the patients were asked whether they felt it was important that their pharmacist was aware of their condition in order to receive information about the drugs taken and how to use them, to ask questions about their health status and the effects of the drugs taken, and to have a trusted pharmacy. Patients were asked whether they felt it was preferable to always change the pharmacies and how often and why they go to their pharmacy. The last questions were on the topic of "oncological cosmetology" and whether the patient had skin problems that were caused by drugs and how they dealt with the issue. We investigated the answers to the last questions in a prior letter to the Editor of the Italian Journal of Dermatology and Venereology.¹⁹

Statistical analysis was carried out using STATA®14 (StataCorp. 2015. Stata Statistical Software: Release 14. College Station, TX, USA: StataCorp LP). Descriptive statistics were performed. The comparison between the proportions was performed using the Pearson's chi-square test. A p-value less of than 0.05 was considered statistically significant.

RESULTS

Clinical characteristics and treatment received

266 patients filled out the questionnaire. The complete responses to the questionnaire are shown in Table 1.

62% patients were women and half were over 60 years of age. 40% of the interviewees were affected by breast cancer, whereas almost 10% were affected by colon and/or rectum cancer, melanoma and lung cancer.

Lung cancer was more frequently reported by men.

Breast cancer was more frequently reported by female patients over 40 years old, whereas pancreatic cancer by patients between 50 and 80 years old.

Almost half of the patients (45%) had been diagnosed more than 1 year prior to the questionnaire. About 30% had been diagnosed between 6-to-12 months earlier and about 20% less than 6 months earlier. Very few patients affected by pancreatic or lung cancer had been diagnosed more than 1 year earlier.

More than half of the respondents were in combined treatment. Single intravenous therapy is more frequent in older patients, whereas single oral therapy is more frequent in younger patients. Single treatment was more frequently used for more recently diagnosed patients, whereas there is a tendency to add more types of treatment as the pathology progresses.

Cancer reported impact on daily life

More than half of patients reported that their cancer diagnosis interfered with normal life very much or extremely. Only 5% reported that diagnosis did not interfere at all. The cancer that seemed to impact upon everyday life the least was melanoma. Almost 70% of patients reported that they were accepting of



Table 1. Answers to questions			
Variable		Subjects (%)	Not responding
Gender	Women	93 (38%)	20
	Men	150 (62%)	
Age	<40 years old	16 (6%)	7
	41-50 years old	41 (16%)	
	51-60 years old	59 (23%)	
	61-70 years old	66 (25%)	
	71-80 years old	67 (26%)	
	>81 years old	10 (4%)	
Main oncological diagnosis	Breast cancer	106 (40%)	4
	Lung cancer	21 (8%)	
	Colon and/or rectum cancer	24 (9%)	
	Prostate cancer	12 (4.5%)	
	Lymphoma	7 (3%)	
	Leukaemia	4 (1.5%)	
	Pancreas cancer	17 (6%)	
	Melanoma	23 (9%)	
Other answers	50 (19%)		
Time since diagnosis	0-3 months	18 (7%)	3
	3-6 months	46 (17%)	
	6-9 months	26 (10%)	
	9-12 months	55 (21%)	
	More than 12 months	118 (45%)	
Treatment	Intravenous	48 (18%)	1
	Surgical	37 (14%)	
	Oral	27 (11%)	
	Radiotherapy	4 (1%)	
	A combination of both / all four	149 (56%)	
Since your diagnosis, how much have your physical health and / or emotional state interfered with your normal daily, social and work activities and your relationships with your family and friends?	Not at all	13 (5%)	4
	Slightly	36 (14%)	
	Moderately	59 (22%)	
	Very much	99 (38%)	
	Extremely	55 (21%)	
When thinking of your diagnosis...	«It's not possible, it's not me, there must be an error in the analysis.»	9 (4%)	12
	«So it's really true, it's happening to me, but why me?»	23 (9%)	
	«Why now?» ...I would just need to be able to... (e.g., do something particular, get to a certain goal, attend a certain event...)	20 (8%)	
	«I find it hard to find the strength to fight.»	26 (10%)	
	«I accept what happened to me and try to fight back.»	176 (69%)	
Utility of drugs (after the diagnosis)	Essential	215 (82%)	2
	Quite important	46 (17%)	
	Useless	3 (1%)	
Utility of drugs (before the diagnosis)	Essential	161 (62%)	8
	Quite important	88 (35%)	
	Useless	9 (3%)	

Difficulty in adhering to therapies	A lot harder than I thought	35 (14%)	6
	A little harder than I thought	80 (31%)	
	As difficult as I expected	52 (20%)	
	A little easier than I thought	53 (20%)	
	Much easier than I thought	40 (15%)	
Importance of the pharmacist knowing about your health status	Very important	91 (35%)	3
	Important	78 (30%)	
	Quite important	32 (12%)	
	Not very important	37 (14%)	
	Definitely unimportant	25 (9%)	
Importance of receiving information in the pharmacy about the medicines purchased and how to use them	Very important	105 (40%)	6
	Important	83 (32%)	
	Quite important	31 (12%)	
	Not very important	29 (11%)	
	Definitely unimportant	12 (5%)	
Importance of being able to ask the pharmacy about health and effects of medication taken	Very important	89 (34%)	7
	Important	85 (33%)	
	Quite important	30 (12%)	
	Not very important	37 (14%)	
	Definitely unimportant	18 (7%)	
Importance of having a trusted pharmacy	Very important	110 (43%)	8
	Important	84 (32%)	
	Quite important	26 (10%)	
	Not very important	26 (10%)	
	Definitely unimportant	12 (5%)	
Importance of continually changing pharmacies in order not to be recognized	Very important	9 (3%)	12
	Important	15 (6%)	
	Quite important	10 (4%)	
	Not very important	81 (32%)	
	Definitely unimportant	139 (55%)	
Frequency of visits to the pharmacy	More than once a week	59 (23%)	5
	More than once a month	123 (47%)	
	I don't know	44 (17%)	
	Almost never, because I delegate	35 (13%)	
Reason for going to the pharmacy	To buy only what has been prescribed to me	166 (64%)	6
	To ask the pharmacist for advice on my health status, on the symptoms experienced and on the ADRs of the medicines I take	41 (16%)	
	To buy other products with the aim of improving general «wellbeing» (physical and/or mental)	36 (14%)	
	To buy only what has been prescribed to me + To ask the pharmacist for advice on my health status, on the symptoms experienced and on the ADRs of the medicines I take	4 (1%)	
	To buy only what has been prescribed to me + To buy other products with the aim of improving the general «wellbeing» (physical and/or mental)	3 (1%)	
	To ask the pharmacist for advice on my health status, on the symptoms experienced and on the ADRs of the medicines I take + To buy other products with the aim of improving general «wellbeing» (physical and/or mental)	7 (3%)	
	To buy only what has been prescribed to me + To ask the pharmacist for advice on my health status, on the symptoms experienced and on the ADRs of the medicines I take + To buy other products with the aim of improving general «wellbeing» (physical and/or mental)	3 (1%)	



Skin reactions due to medicines	Yes	82 (32%)	8
	No	175 (68%)	
How you deal with skin trouble	My oncologist recommended a topical product to apply	61 (65,5%)	
	My oncologist prescribed a specialist visit with a dermatologist	10 (11%)	
	I went to the pharmacy and my pharmacist recommended a topical product	20 (21,5%)	
	My oncologist recommended a topical product to apply + I went to the pharmacy and my pharmacist recommended a topical product	1 (1%)	
	I went to the pharmacy and my pharmacist recommended a topical product + My oncologist prescribed a specialist visit with a dermatologist	1 (1%)	

what happened and were trying to fight back.

Older patients seemed to more readily accept their situation than younger ones.

Patients perception of utility of medicines

Almost all of the patients involved answered that they considered medicines to be useful (82% essential and 17% quite important). When comparing answers on the utility of medicines before and after diagnosis, we can see that opinions were different before diagnosis; 62% thought that medicines were essential, 35% quite important and 3% useless. More than half of patients reported that it is more difficult to adhere to therapy than they initially thought.

Pharmacists and community pharmacies

As shown in figure 1, 65% of patients answered that it is important or very important that pharmacists are aware of their health status. People that thought that medicines are useless are less likely to give importance to their pharmacists being aware of their health status.

About 3 out of 4 patients thought that pharmacists giving information on medicines purchased and on how to use them is important or very important. Around the same proportion of patients thought that it is important to receive information concerning health and the effects of medication taken. Only 15% of the people involved thought that it is not important to have a single trusted pharmacy. Almost all of the patients answered

that it is not important to continually change pharmacies in order not to be recognized as having a physical condition that can generate shame/ discomfort. Subjects who are in the phase of accepting their disease are those who consider it to be less important to have the possibility to change their pharmacy so as not to be recognised.

Almost half of the patients declared that they go to a pharmacy more than once a month. A quarter of the subjects, on the other hand, go to the pharmacy more than once a week. Patients that more frequently go to community pharmacies are the ones that considered it to be important that pharmacists are aware of their health status, that it is important to receive information from pharmacists about the medicines purchased and how to use them, that it is important to ask questions to pharmacists and that it is important to have a trusted pharmacy to go to.

More than half of the patients (64%) go to the pharmacy to buy what their physician has prescribed. 16% go to the pharmacy and ask the pharmacist for advice on health status, the symptoms experienced and the ADRs of the medicines taken. 14%, however, go to the pharmacy to buy other products with the aim of improving their general “wellbeing” (physical and/or mental).

Around 30% declared that they have suffered from skin reactions due to cancer therapy. The majority of these people (65.5%) dealt with it by buying a topical product that was

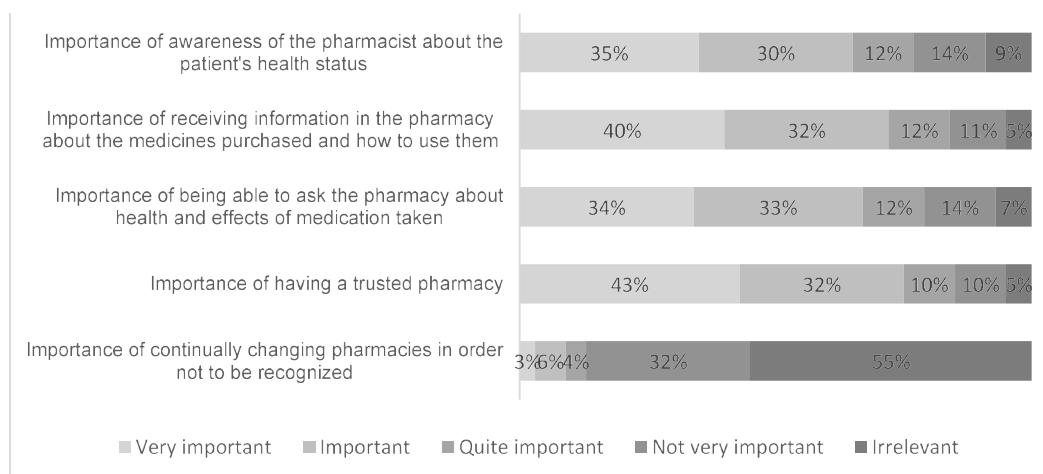


Figure 1. Patient interaction with community pharmacies



recommended by an oncologist. Some of the patients (21.5% of those with skin reactions) turned to pharmacists for advice on a topical product.

DISCUSSION

In this paper, we have collected answers from oncological patients about their disease and treatment, their state of acceptance of the disease, the presence of possible skin reactions, the way they have dealt with them and their relationship with the pharmacy.

Although the sample was not very large, the sample characteristics seem to reflect general-population features. Indeed, a higher prevalence of females were found in the breast cancer population. Lung cancer, on the other hand, has been found to be more common among men than women, as confirmed by the literature.⁴ In our survey, breast cancer was found to be more frequent in those over 40 years of age, whereas pancreatic cancer was more frequent in those between 50 and 80 years old. These data are compliant with general-population features.^{20,21} Respondents that reported having been diagnosed the longest time ago have similar cancer to post-diagnosis survival data to the general population: low survival for patients with pancreatic cancer (7% at 5 years) and lung cancer (15% at 5 years) and higher for those with breast, colon and/or rectal cancer and melanoma.⁶

Regarding the consequences of the disease on everyday life, almost all of the patients declared that the disease has interfered significantly. As can be seen, there is considerable scope for action to improve the quality of life in these individuals and thus there are actions that healthcare services (included community pharmacies) can potentially take.

As regards patient reactions, it is important to relate the answers to the five stages of grief, as conceptualised by the psychiatrist Kubler-Ross: Denial, Anger, Bargaining, Depression, Acceptance. She described these phases as stages through which a terminally ill person commonly goes. They can occur at the same time, they can progress linearly or not, and they can be skipped or not. In the Denial stage, the patient refuses their condition. In the Anger phase, the patient does not accept the diagnosis and faces the issue with anger and fear. In the Bargaining phase, the patient tries to put off the change or find a way out of the situation. In the Depression stage, the patient realises the situation and feels beaten. In the Acceptance phase, the patient is fully aware of their situation and what it will happen.¹⁸ The survey seems to indicate that the majority of the patients involved are in the Acceptance stage. Older patients in the survey seem to accept the diagnosis more, whereas younger ones feel that they lack the time to do the things they wanted. The Acceptance phase is certainly a phase in which help from external parties (such as the community pharmacist) is accepted. That may be difficult in other phases of reaction to the diagnosis such as Denial, Anger and Depression.

For many patients, their diagnosis has radically changed their

opinion on the usefulness of medicine; 20% more patients believe that medicines are necessary.

More than half of patients stated that adherence to therapy is difficult.

Adherence to therapy can be defined as the degree to which a person's behaviour - in taking medication, following a diet and/or making lifestyle changes - corresponds to the recommendations agreed upon with health-care providers.^{22,23} It has often been rated higher in cancer patients than in other chronic therapies. Indeed, it has always been thought that cancer patients were more adherent to treatment because the lethality of the disease was more of a concern than the possible ADRs of medication.²⁴ Some more recent studies (although there are still only a few studies that have addressed these issues) have shown that adherence is not high even in this population.²⁵ For example, a study found that only 14% of patients with chronic myeloid leukaemia were fully adherent to therapy, 78% had taken a lower dose than prescribed, and 15% a higher dose.²⁶ In another study carried out in Poland, around 40% of oncological patients declared a high level of medication adherence, whereas moderate and low adherence levels were declared by 32% and 28%, respectively.²⁷ Other studies investigated factors related to poor adherence in oncological patients (such as depression, race/ethnicity, type of endocrine therapy, time on therapy, side effects, medication cost, suboptimal patient-physician communication, and lack of social support).²⁸⁻³⁰

Non-adherence in these patients is undoubtedly very serious, as it may lead to a poor response to treatment, deterioration of the general condition and a worsening of the prognosis.²⁴

All aspects need to be considered when supporting cancer patients in their adherence to therapy, starting with lifestyle and cultural background. One should consider that cancer patients usually know about their disease and how to manage it, but the progression of the disease may lead to a decrease in independence, and dependence on others may decrease adherence. It is also necessary to bear in mind that taking more than one medicine per day is known to decrease adherence to therapy, as does taking medicines with a bad taste/smell. These are both conditions that can occur in antineoplastic therapies. Therefore, a multidisciplinary approach must be implemented to provide efficient, effective and personalized support, especially concerning the patient's knowledge of their therapy; there is a strong association between knowledge of the therapy and adherence to therapy.²⁴

The results did not show a great difference in difficulty in adhering to therapy between men and women and between those under and over 60. This is in contrast to literature data, which indicates that the elderly tend to have more difficulty in correctly following drug therapy due to problems that can range from memory disorders to cognitive disorders, from the complexity of polytherapy to practical problems such as having difficulty simply opening the secondary packaging of a drug.²² This difference from general-population data may be due to



the fact that cancer patients are more closely followed than elderly non-oncology patients.

Generally positive views of pharmacies have emerged from the oncological patients interviewed in this survey. For most of them, it is important that their pharmacist is aware of their state of health, that pharmacists provide information about the medicines that they have purchased and how to use them, that they can ask pharmacists questions about their state of health and the effects of the medicines they are taking, and that they have a trusted pharmacy, where they feel recognized and listened to. In addition, many people think that it is not important to constantly change pharmacies so as not to be recognized and seen with a physical condition that can generate shame/ discomfort. All of this underlines how a pharmacy is a place where patients, in this case cancer patients, feel safe to share even uncomfortable personal health conditions and where they receive clear guidance for the management of their disease. In particular, pharmacists can provide information on how to use cancer medicines that can be dispensed in community pharmacies and their ADRs. Furthermore, pharmacies may have a role in supplying products to help patients with skin reactions that are caused by oncological therapies. Indeed, some of the interviewed patients answered that they often ask pharmacies for advice on topical products, other than topical products to mitigate skin troubles, pharmacists can also recommend cosmetics to hide some external defects that are caused by oncological therapies.

While we agree with the essential role played by hospitals and specialized physicians in such an important disease, we wish to underline the role of territorial health units in the management of oncological patients. In fact, we believe that it is important that patients be allowed a certain degree of freedom in order for them to live with their illness as well as possible.

Limitations

The limitations of this study may have affected the results. Firstly, only 5 oncological clinics participated in the programme and they are all located in a single city. Consequently, the sample of oncological patients involved may not be considered representative of the whole population of Piedmont, and, even less, of Italy.

Another limit is the use of information that has been self-reported by patients, in that it prevents us from obtaining an objective view of the situation. Furthermore, the questionnaire was self-administered meaning that questions could not be explained and that there was no way to verify that questions were answered in the order that they were written.

A recall bias may have occurred in the question on patient opinion of the usefulness of the medicines before diagnosis. Indeed, a recall bias is a systematic error due to differences in accuracy or completeness of recall memory of past events or experiences.³¹

Some important information was not collected, and this includes the medicines taken by patients.

Regarding the question on adherence, it would have been more effective to assess adherence in relation to the type of therapy administration so as to analyse difficulties of every kind. This was not possible in depth because most of the patients answered that they were treated with a combination of treatments without specifying which one.

We did not ask about the patients' stage of cancer progression and its possible consequences on the life of the patient.

CONCLUSION

In conclusion, our study therefore underlines the role of territorial health units in the management of oncological patients. It can be said that the community pharmacy is certainly a channel of election, not only in cancer prevention (as a point of information on healthy lifestyles and a place where certain types of screening can be carried out), but also in the management of those patients who have already been diagnosed with cancer. The role of the pharmacist is therefore to offer support to improve the quality of life of these "fragile" individuals. Indeed, a large proportion of patients indicated that they have great trust in their community pharmacy and a need to feel "taken care of", not only by other health figures (such as the oncologist, general practitioner or dermatologist) but also by their pharmacist.

More comprehensive and specific pharmacist training than ever before is absolutely necessary for the management of this type of patient. Furthermore, it is necessary to improve the awareness of this issue in community pharmacists at the local and national level by creating a network of qualified pharmacies. The future therefore lies in ensuring that pharmacists can act to support adherence to prescribed cancer therapies, to support the management of ADRs on the skin and adnexa, and to support oncologists and dermatologists in recommending topical products, as an "educator" in the field of oncological cosmetology.³² All this must be developed in collaboration with oncologists, GPs, dermatologists, psychologists and cosmetics companies.

It is necessary that further studies with larger samples are carried out to confirm the results of this study.

ETHICS STATEMENT

The subjects participated in the study on a voluntary basis, and they were orally informed on the characteristics and the purpose of the study. The questionnaire was anonymous. Personal data were not collected and there is no way to trace back the answers to a specific responder. Enrolled subjects expressed their consent to participate in the study orally. No written consent has been produced to ensure anonymity for the participants. No medical interventions were performed on the interviewed patients. Therefore, according to Italian legislation³³ on the protection of personal data no ethical approval was required.



DISCLOSURE

The author reports no conflicts of interest in this work.

FUNDING

The study received an unconditional support by Pierre Fabre Italia S.p.A. and Unifarma Distribuzione S.p.A.

References

1. World Health Organization. Cancer: Overview. 2022. Accessed April 4, 2022. https://www.who.int/health-topics/cancer#tab=tab_1
2. World Health Organization. Cancer: key facts. 2022. Accessed April 4, 2022. <https://www.who.int/news-room/fact-sheets/detail/cancer>
3. European Commission. 2021 Communication from the Commission to the European Parliament and the Council. Europe's Beating Cancer Plan. March 3, 2021. Accessed April 4, 2022. <https://eur-lex.europa.eu/legal-content/en/TXT/?uri=COM%3A2021%3A44%3AFIN>
4. International Agency for research on Cancer. Cancer Today 2020. Accessed April 4, 2022. <https://gco.iarc.fr/today/home>
5. Fondazione AIRC per la Ricerca sul Cancro. Le statistiche del cancro. 2021. Accessed April 4, 2022. <https://www.airc.it/cancro/informazioni-tumori/cose-il-cancro/numeri-delcancro#:~:text=L%27incidenza%20dei%20tumori%20in%20Italia%20Si%20stima%20che,una%20donna%20su%203%20si%20ammaler%C3%A0%20di%20tumore>
6. Associazione Italiana di Oncologia Medica. I numeri del cancro in italia. 2021. Accessed April 4, 2022 https://www.aiom.it/wp-content/uploads/2021/10/2021_NumeriCancro_web.pdf
7. World Health Organization. Cancer: Prevention. 2022. Accessed April 4, 2022. https://www.who.int/health-topics/cancer#tab=tab_2
8. Lewandowska AM, Rudzki M, Rudzki S, et al. Environmental risk factors for cancer - review paper. *Ann Agric Environ Med*. 2019;26(1):1-7. <https://doi.org/10.26444/aaem/94299>
9. Kerr J, Anderson C, Lippman SM. Physical activity, sedentary behaviour, diet, and cancer: an update and emerging new evidence. *Lancet Oncol*. 2017;18(8):e457-e471. [https://doi.org/10.1016/S1470-2045\(17\)30411-4](https://doi.org/10.1016/S1470-2045(17)30411-4)
10. Marur S, D'Souza G, Westra WH, et al. HPV-associated head and neck cancer: a virus-related cancer epidemic. *Lancet Oncol*. 2010;11(8):781-789. [https://doi.org/10.1016/S1470-2045\(10\)70017-6](https://doi.org/10.1016/S1470-2045(10)70017-6)
11. Vieira AR, Abar L, Chan DSM, et al. Foods and beverages and colorectal cancer risk: a systematic review and meta-analysis of cohort studies, an update of the evidence of the WCRF-AICR Continuous Update Project. *Ann Oncol*. 2017;28(8):1788-1802. <https://doi.org/10.1093/annonc/mdx171>
12. Vieira AR, Abar L, Vingeliene S, et al. Fruits, vegetables and lung cancer risk: a systematic review and meta-analysis. *Ann Oncol*. 2016;27(1):81-96. <https://doi.org/10.1093/annonc/mdv381>
13. Modenese A, Korpinen L, Gobba F. Solar Radiation Exposure and Outdoor Work: An Underestimated Occupational Risk. *Int J Environ Res Public Health*. 2018;15(10):2063. Published 2018 Sep 20. <https://doi.org/10.3390/ijerph15102063>
14. Wogan GN, Kensler TW, Groopman JD. Present and future directions of translational research on aflatoxin and hepatocellular carcinoma. A review. *Food Addit Contam Part a Chem Anal Control Expo Risk Assess*. 2012;29(2):249-257. <https://doi.org/10.1080/19440049.2011.563370>
15. Berrino F. Life style prevention of cancer recurrence: the yin and the yang. *Cancer Treat Res*. 2014;159:341-351. https://doi.org/10.1007/978-3-642-38007-5_20
16. U.S. Department of Health and Human Services, National Cancer Institute. Side Effects of Cancer Treatment. 2022. Accessed April 4, 2022. <https://www.cancer.gov/about-cancer/treatment/side-effects>
17. Pharmaceutical Group of the European Union. Annual report 2017. Measuring health outcomes in community pharmacy. 2017. Accessed April 4, 2022. <https://www.pgeu.eu/wp-content/uploads/2019/04/PGEU-AR-2017-WEB.pdf>
18. Kübler-Ross E. On death and dying. Macmillan Company; 1969.
19. Pignata I, Vicenzi G, Ravetto Enri L, et al. The importance of a multidisciplinary care: community pharmacies as a hub to support oncologic patients with cutaneous reactions due to treatments. *Ital J Dermatol Venerol*. 2021;156(6):79-80. <https://doi.org/10.23736/S2784-8671.19.06418-6>
20. Fondazione AIRC per la Ricerca sul Cancro. Tumore del seno. 2021. Accessed April 4, 2022. <https://www.airc.it/cancro/informazioni-tumori/guida-ai-tumori/tumore-del-seno>
21. Fondazione AIRC per la Ricerca sul Cancro. Tumore del pancreas. 2018. Accessed April 4, 2022. <https://www.airc.it/cancro/informazioni-tumori/guida-ai-tumori/tumore-del-pancreas>
22. World Health Organization. Adherence to long term therapies: evidence for action. Edited by Eduardo Sabaté; 2003.
23. Haynes RB, Montague P, Oliver T, et al. Interventions for helping patients to follow prescriptions for medications. *Cochrane Database Syst Rev*. 2000;(2):CD000011. <https://doi.org/10.1002/14651858.CD000011>
24. Fliedner M, Kellerhals SD, Aerts E. Aderenza alle terapie farmacologiche anti-tumorali per via orale. European group for blood and marrow transplantation. Swiss working group. 2013. Accessed April 4, 2022. <https://www.ebmt.org/sites/default/files/>



Baratta F, Pignata I, Vicenzi G, Enri LR, Quaglino P, Comandone A, Ala A, Icardi M, Spadi R, Brusa P. Oncological patient management on the territory: the results of a survey in the north-west of Italy. *Pharmacy Practice* 2022 Oct-Dec;20(4):2716.

<https://doi.org/10.18549/PharmPract.2022.4.2716>

[migration_legacy_files/document/Practical%20Guide%20for%20Nurses_Adherence%20to%20Oral%20Anti-tumour%20Therapies_Italian.pdf](#)

25. Wood L. A review on adherence management in patients on oral cancer therapies. *Eur J Oncol Nurs*. 2012;16(4):432-438.

