Quarterly Journal Fides et Ratio
Issue 2(50)2022, ISSN 2082-7067, Pages 117-122

Inter-professional and patient communication as part of the personalized treatment process. A patient – doctor – pharmacist – pharmaceutical plant relationship model

Komunikacja międzyzawodowa i z pacjentem jako element procesu leczenia spersonalizowanego. Model relacji pacjent – lekarz – farmaceuta – zakład farmaceutyczny[1]

https://doi.org/10.34766/fetr.v50i2.1069

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Abstract: This article presents the issue of communication with the patient, as well as the professional relationship between a doctor, pharmacist and the employees of a pharmaceutical plant who are involved in the process of personalized treatment. The current literature on the subject recognizes the potential of personalized medicine, but focuses on its medical characteristics, analyzing, to a small extent, the importance of proper communication between entities involved in the treatment process. The transition from the traditional model of treatment to individualized therapy requires the expansion of the classic model of doctor-patient communication into a broader communication model which takes into account the relationship between the patient, doctor, clinic staff, pharmacist and pharmaceutical plant. The article presents the current state of development of personalized medicine and the potential of inter-professional communication in patient treatment. As a consequence, a model of the patient – doctor – pharmacist – pharmaceutical plant relationship has been proposed, taking into consideration potential opportunities and areas for development.
Keywords: personalized medicine, doctor–patient communication, doctor – patient – pharmacist – pharmaceutical plant communication.

Abstrakt: Niniejszy artykuł przedstawia zagadnienie komunikacji z pacjentem oraz współpracy interdyscyplinarnej pomiędzy lekarzem, farmaceutą i pracownikami zakładu farmaceutycznego w procesie leczenia personalizowanego. Aktualna literatura przedmiotu dostrzega potencjał medycyny personalizowanej, jednakże koncentruje się na jej medycznych charakterystykach, w niewielkim stopniu analizując znaczenie właściwej komunikacji pomiędzy podmiotami zaangażowanymi w proces leczenia. Przejście z tradycyjnego modelu leczenia w zindywidualizowaną terapię wymaga rozbudowania klasycznego modelu komunikacji lekarz-pacjent na szerszy model komunikacji uwzględniający relację pomiędzy pacjentem, lekarzem, personelem przychodni, farmaceutą, a zakładem farmaceutycznym. W artykule przedstawiono aktualny stan rozwoju medycyny personalizowanej oraz potencjał współpracy zespołu interdyscyplinarnego w leczeniu pacjenta. W konsekwencji zaproponowano model relacji pacjent – lekarz – farmaceuta – zakład farmaceutyczny, rozważając potencjalne możliwości i obszary do rozwoju.
Słowa kluczowe: medycyna personalizowana, komunikacja lekarz – pacjent, komunikacja lekarz – pacjent – farmaceuta – zakład farmaceutyczny.

1. Personalized medicine

In the treatment of the patient, not only is the effectiveness of the therapy important, but also awareness of the potential risk of complications. Modern clinical observations have led to the conclusion that the average drug works in 40-60% of patients, and another 15% experience side effects. Therefore, an important stage of medical therapy should be take into account the individual properties of the patient's organism, including their genetic predisposition (Gaciong, 2016; Jain, 2002). The process of optimizing and individualizing therapy, as well as adapting a drug to the needs of a specific patient is defined as personalized medicine (Gaciong, 2009;

1 Artykuł w języku polskim: https://www.stowarzyszeniefidesetratio.pl/fer/2022-2Barlog.pdf

2016, Kaleta, 2016; Wysocki, Handschuh, Mackiewicz, 2009). The idea of individualized therapy presented finds supporters in oncological treatment (Łaczmańska et al., 2021; Wysocki, Handschuh, Mackiewicz, 2009), but there are more and more considerations regarding the adaptation of the method in other areas of medicine, e.g. in the treatment of infertility (Goetz, Schork, 2018). Currently, researchers focus on the promotion of personalized medicine, the presentation of advantages and identification ofpotential difficulties. The literature considers ways to optimize the personalized treatment process, and the main topics of discussion are the issues of diagnosis, methods of genetic testing, protection of sensitive data (Chan, Ginsburg, 2011; Hamburg, Collins, 2010, Gaciong, 2016; Schork, 2015), the use of new technology (Abul-Husn, Kenny, 2019), or data analysis–- so-called big data (Cirillo, Valencia, 2019; Suwinski, Ong, Ling, Poh, Khan, Ong, 2019; Senn, 2018). As personalized therapy is a fairly new idea in medicine, researchers face many scientific, economic and organizational challenges (Mathur, Sutton, 2017). Despite the difficulties, the great potential of the method is noted, which in the future may allow for better prophylaxis (hence, the prevalence of genetic tests will enable a broad analysis of the risk of developing the disease), increasing the effectiveness of treatment (through the correct selection of drugs and reducing side effects) and reduction of costs related to, among others, the shortening of the time of treatment or inhibiting the development of the disease (Gaciong, 2016; Mathur, Sutton, 2017).

In the treatment process, non-medical aspects are also important, such as the quality of the relationship between the patient and medics (Karkowski, Karkowska, Skoczylas, 2016; Nowina Konopka, 2016). As noted by Mathur and Sutton (2017), personalized treatment makes it possible to monitor the patient's compliance with medical recommendations, and individualized communication between the patient and specialists can build trust in the health care service. Although interpersonal relationships have proved to be essential in personalized therapy, the pioneers of this method do not pay much attention to them.

2. Interpersonal communication in personalized medicine

In personalized medicine, not only is the ability to interpret genetic data or medical analysis of the disease history important, but additionally the ability to build relationships with the patient, understanding their expectations and emotional needs (Małecki, 2018; Małecki, Nowina Konopka, 2018; Nowakowska et al., 2009). Karkowski, Karkowska and Skoczylas (2016) indicate the need to link personalized medicine with narrative medicine. Narrative medicine places emphasis on the free narrative of the patient, whose life history and the way of describing the disease are crucial for the effectiveness of the therapeutic process. The key here is the doctor's interpersonal skills and the quality of the relationship with the patient and appropriate environmental conditions, e.g. regarding the time of the visit (Karkowski, Karkowska, Skoczylas, 2016). Just as not every disease requires personalized treatment, the quality of the doctor-patient relationship may be related with the type of disease. There are four main communication types in the doctor-patient relationship: authoritarian, paternalistic, cooperative and partner-like (Nowina Konopka, 2016).

In the treatment of severe injuries (requiring surgery under anesthesia), the physician most often shows an authoritarian attitude, while, in chronic treatment (including personalized treatment), a relationship of mutual participation is desirable (Nowina Konopka, 2016; Szasz, Hollender, 1956). In the case of physician-dominated communication, the patient may adopt a passive attitude (characteristic of the authoritarian type of communication) or completely subordinate one (paternalistic type of communication). On the other hand, the type of cooperative communication is characterized by the fact that the doctor cooperates with the patient and, if necessary, with his family, maintaining an appropriate emotional distance. However, in the process of long-term treatment, the specialist, apart from focusing on physical health, should also take into account the emotional needs of the patient, as well as that of his family, adopting a partnership type of communication (Nowina Konopka, 2016). The ability to build this type of relationship may be

particularly important in increasing the effectiveness of individualized therapy. It seems, however, that not only the doctor-patient relationship is important in the treatment process, but also a wider support network whichincludes communication with the clinic's medical staff (Nowina Konopka, 2016) and a pharmacist (Burak, Andersz, Karpińska, Gąsior, and Fedorowicz, 2015; Chmielewska, Kostrzewa-Itrych, Kostrzewa, Hermanowski, 2017) as well as between a pharmacist and pharmaceutical plant that produces drug ingredients.

The pharmacist is an important subject of communication in the patient's treatment process. Some patients omit a visit to the doctor (undertaking self-diagnosis) and consult drug purchase with just the pharmacist (Waszyk-Nowaczyk, Simon, 2009). In turn, more than half of the patients after talking with the doctor, they does not remember the instructions, and only every fifth patient admits that the doctor asks about the level of understanding of the information presented (Zygadło, 2005; after: Chmielewska, Kostrzewa-Itrych, Kostrzewa, Hermanowski, 2017). The health system should not limit the pharmacist only to the obligation to issue drugs, but it could develop potential in the area of preventive activities, e.g., disseminating knowledge about a healthy lifestyle among pharmacy customers (Burak et al., 2015). In the United States, the role of the pharmacist in the personalized treatment process has been increasingly recognized for several years. Americans systematically develop a pharmacotherapy management program, i.e., they adjust pharmacological therapy to the individual predispositions of the patient. In this process, important competencies of a pharmacist (a side from specialist knowledge in the field of personalized medicines) are communication skills, i.e., the ability to consult the patient, including motivating and educating conversations, and the ability to build relationships with doctors (Piecuch, Makarewicz-Wujec, Kozłowska-Wojciechowska, 2014). Equally important for a clinical pharmacist is acquiring competencies in the area of making therapeutic decisions (clinical judgment), engaging in clinical interviews and optimizing care in selected clinical groups (Piecuch, Kozłowska-Wojciechowska, Jaszewska, Makarewicz-Wujec, 2014).

The literature on the subject regarding the issues of cooperation between doctors and pharmacists (interprofessional communication) points to a need to increase interaction between stakeholders. To this end, the pharmacist should develop the social competencies described above, and the doctor should acquire knowledge regarding the importance of cooperation with the pharmacist, recognize his role in the treatment process and understand that the pharmacist is not only a drug seller, but also an important partner in the process of helping the patient (Piecuch, Makarewicz-Wujec, Kozłowska-Wojciechowska, 2014). Bradley, Ashcroft and Noyce (2012)on the basis of qualitative research conducted among doctors and pharmacists, they highlighted several factors important for the quality of cooperation, they are: location, service provision, trust, knowledge, communication, professional role and professional respect (Piecuch et al., 2014). It is worth emphasizing that only the first two factors do not concern interpersonal competencies, and the remaining ones are related to communication, noticing the importance of a partner's professional role, showing respect or trust. Although in other European countries, specialists are beginning to notice the need to strengthen cooperation between doctors and pharmacists, in the case of Poland, there is no such interaction that would be extremely beneficial for the patient (Piecuch et al., 2014).

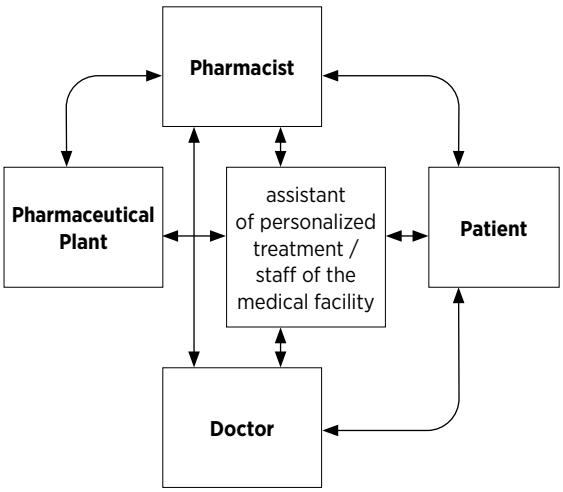
In the perspective of personalized medicine, communication is also very important with a pharmaceutical company. Pharmaceutical companies, having a detailed knowledge of the patient and his or her genetic predispositions, will be able to produce ingredients of preparations, which will consequently increase the effectiveness of treatment, compared to the effectiveness of traditional methods (Nowakowska et al., 2009). Pharmaceutical companies have begun to notice the need to develop in the area of personalized medicine (Hermanowski, Drozdowska, 2013), however, improving the quality of communication between medical entities and pharmaceutical companies requires the development of innovation and the introduction of new technological tools (Kołomecka-Kochańska, 2012).

The patient's attitude towards the diagnosis and the proposed therapy is equally important in the personalized treatment process, and might even include the patient's personality. Chapman, Roberts, and Duberstein (2011) suggest the use of personality tests as a diagnostic hint for doctors, facilitating the process of communication with the patient. Personality is important, inter alia, for the effectiveness of coping with stress (Ogińska-Bulik, Juczyński, 2010). The patient's life story, which is important in narrative medicine (Karkowski, Karkowska, Skoczylas, 2016), shapes his patterns of information processing (Aronson, Wilson, & Akert, 2006), Consequently, it matters what information the patient remembers. Perseverance, i.e. a temperamental tendency to experience events for a long time (Strelau, 1998), may be related to the effect of self-fulfilling prophecy (Aronson, Wilson, & Akert, 2006), which in this case will manifest itself in skipping medical appointments and not undertaking treatment, the source of which there is a lack of faith in recovery. On the one hand, the patient's predispositions and his involvement in the treatment process and faith in the effectiveness of the methods used are important, and on the other hand, the doctor's communication skills are equally important to that of the pharmacist's, as well as the knowledge of how to react to patients with different individual predispositions.

3. Relationship model: patient – doctor – pharmacist – pharmaceutical plant

In implementing personalized medicine, it will be crucial to build a communication network between the patient, doctor, medical staff of a health care facility, pharmacist and pharmaceutical plant, because all these entities are important for the effectiveness of therapy. Figure 1 shows the theoretical model of the communicative relationship in the individualized treatment process.

In the process of the implementation of the presented model, it is worth discussing the need to introduce a new medical profession (assistant of personalized treatment), as is the case in other support areas, e.g. family assistant (Act of June 9, 2011 on supporting



Picture 1. The theoretical model presenting the communication relationship in the process of personalized treatment

the family and foster care system), personal assistant of person with disabilities (programs implemented under the Act of October 23, 2018 on the Solidarity Fund), or a recovery assistant (Announcement of the Minister of Health of November 3, 2020). In the communication model described, an assistant of personalized treatment could be employed as a member of the medical staff of a healthcare facility. The assistant would support the patient in the treatment process, being the first point of contact, helping to obtain additional information. The assistant could also be able to contact with other specialists, coordinating communication between them, e.g. by organizing meetings of the team developing the treatment plan, as well as by motivating the patient to implement the established assumptions. The doctor provides a diagnosis and selects an appropriate treatment strategy in consultation with other specialists. The medical staff supports the doctor's work, but also performs diagnostic tests, e.g. laboratory. The pharmacist is in touch with the patient, dispenses medications, explains issues that are incomprehensible to the patient when in contact with the doctor and the pharmacist can additionally allay any doubts that patients who need the assurances of other specialists might have, e.g.by ensuring that the diagnosis is correct. The pharmacist, together with the doctor and clinic staff, should create a communication network, remaining in regular contact. Another element of the model is the pharmaceutical

plant, which produces medicinal substances, ensuring the availability of raw materials for the pharmacist, but is also important for the final costs of treatment.

The presented theoretical model requires a research implication. An important question remains where the coordinator of the personalized treatment process is concerned, namely, if establishing a new profession is too expensive, who will organize the communication of the presented interdisciplinary team and moderate the information exchange process between specialists? Then it is worth considering how daily Communications between specialists can be improved. For example, in the context of communication between a doctor–medical staff–pharmacist, it is worth considering the modification of electronic prescriptions, for example, to allow for the addition of comments, which act as a guide for other specialists who participate in the treatment process. A useful solution could be to design an application which would coordinate the patient's treatment history together with a place

for the interaction between specialists to take place (i.e., via "chat"). However, the presented ideas would require research verification.

In addition to organizational issues, legal issues are equally important, e.g., regarding the transfer and processing of personal data and the sharing of sensitive data, in accordance with the principles of the GDPR (Regulation of the European Parliament and the EU Council 2016/679) between medical entities involved in the treatment process.

Summary

Classic theories of communication in the treatment process focus on selected subjects of the relationship (e.g. doctor-patient, doctor-pharmacist). Modern personalized medicine, which concentrates on highly individualized treatment, also requires adapting the patient-specialist communication process to the challenges of modern medicine. The article presents a theoretical model of communication that holistically captures the network of interpersonal relationships in the process of personalized treatment. The main assumptions and practical challenges of the presented model are:

1. **The individual predispositions of the patient**–in the process of personalized treatment, apart from the physical condition, the psychosocial competencies of the individual are equally important and individual predispositions (e.g. temperament, personality, life history). They are important for the approach adopted to treatment and for the assessment of relationships with individual specialists.
2. **Interprofessional communication**–the doctor coordinates the patient's treatment process, however, other medical specialists, clinic staff (who are the patient's first contact source, who conducts the ordered tests, for example blood tests), pharmacist and the pharmaceutical plant which supplies medicinal substances are of equal importance. These entities constitute a related network of experts.
3. **The communication skills of specialists**–individualized treatment requires high interpersonal skills of medical service employees, the ability to inform about the state of health, translate incomprehensible content, or to delegate tasks to the patient. Communication between specialists is also essential from the involved parties sacrificing time, understanding the meaning of cooperation and psychoeducation.
4. **The organization of the communication process** developing theoretical assumptions and taking into account the perspective of all entities of communication, it is necessary to introduce legal regulations, for example regarding the transmission of information in compliance with the GDPR, or the appointment of a coordinator of an interdisciplinary team created by a patient, doctor, pharmacist and a representative of a pharmaceutical company.

To sum up, the presented theoretical model organizes the issues of communication with the patient and inter-professional communication, important for the process of personalized treatment. However, it requires empirical verification, which should be the next step in increasing the effectiveness of treatment in the future.

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