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Study of the physiotherapist – patient relationship

Studiu privind relaţia fizioterapeut – pacient

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Abstract

Background. Research on communication and interaction in physiotherapy highlights the importance of focusing on the patient and adapting the rehabilitation program, taking into account professional ethical issues. In rehabilitation institutions, whether private or public, the objectives, training of the staff and their approach to patients should be similar.

Aims. This paper aims to record the differences between the opinions of physiotherapists and patients regarding occupational standards and professional deontology, as well as the level of their satisfaction with communication and interaction.

Methods. The study was conducted over a period of six weeks (11 June – 20 July 2018) in 7 private rehabilitation institutions in Târgu Mureş, Romania, on a total of 130 patients and 13 physiotherapists, to whom a 28 item questionnaire was applied.

Results. Concerning the comparative analysis of the differences between the negative and positive responses given by physiotherapists and patients, a statistically significant difference can be seen, "t" = 3.042 and R^2 = 0.159. Furthermore, the difference between negative and neutral responses is statistically significant, "t" = 2.42 and R^2 = 0.1336. On the other hand, the difference between positive and neutral responses is statistically insignificant, "t" = 0.2859 and R^2 = 0.002146.

Conclusions. After investigating, interpreting and analyzing the recorded results, it can be observed that certain aspects of daily practice, mentioned in the national occupational standards, are not applied.

Keywords: communication, interaction, physiotherapy, private practice

Rezumat

Premize. Cercetările privind comunicarea și relaționarea în fizioterapie subliniază importanța centrării pe pacient și adaptării programului recuperator, ținându-se cont de aspectele deontologice profesionale. Fie că este vorba de instituții recuperatorii private sau de stat, obiectivele, pregătirea personalului și aplecarea acestuia spre pacient sunt similare.

Obiective. Această lucrare urmărește înregistrarea diferențelor dintre opiniile fizioterapeuților și ale pacienților, vizând standardele ocupaționale și deontologia profesională, dar și satisfacția acestora privind comunicarea și relaționarea în cadrul procesului recuperator.

Metode. Studiul a fost realizat pe o perioadă de șase săptămâni (11 iunie - 20 iulie 2018) la un număr total de 7 instituții recuperatorii din Târgu Mureș, România, pe un lot total de 130 de pacienți și 13 fizioterapeuți, cărora li s-a aplicat un chestionar cu 28 de itemi.

Rezultate. În ceea ce privește analiza comparativă a semnificației diferențelor dintre răspunsurile negative și cele pozitive date de fizioterapeuți și pacienți, putem observa o diferență puternic semnificativă din punct de vedere statistic, „t" fiind 3,042 și R^2 = 0,1958. Mai mult de atât, diferența dintre răspunsurile negative și cele neutre este puternic semnificativă din punct de vedere statistic, valoarea „t" fiind 2,42 și R^2 = 0,1336. Pe de altă parte, diferența dintre răspunsurile pozitive și cele neutre este nesemnificativă din punct de vedere statistic, valoarea „t" fiind 0,2859 și R^2 = 0,002146.

Concluzii. În urma investigării, interpretării și analizei rezultatelor înregistrate, observăm că anumite aspecte concrete ale practicii de zi cu zi, menționate în standardele ocupaționale naționale, nu sunt îndeplinite.

Cuvinte cheie: comunicare, relaționare, fizioterapie, sistem privat

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Introduction

A freshly graduated physiotherapist, at the beginning of his/her career, can see this profession as one exclusively focused on precise measurements, rigorous objectives and strictly performed treatments. This perception of medical rehabilitation is the result of intensive training and courses oriented towards this direction (Parry & Brown, 2009; Lattanzi & Pechak, 2012). The multitude of information to which we have access during university is predominantly aimed at building the knowledge required for therapy and is less centered on aspects involving communication and interaction with patients in rehabilitation institutions (Włoszczak-Szubzda et al., 2013; Odebiyi et al., 2008).

The way we communicate and interact with our patients deeply influences the quality of medical rehabilitation sessions for both the patient/client and the physiotherapist (Woodward-Kron et al., 2012; Ajjawi & Higgs, 2012). Medical research regarding the interaction with the patient highlights the importance of a patient oriented approach (Parry et al., 2004; Pinto et al., 2012; Lonsdale et al., 2012).

It can be said that physiotherapy involves other aspects in addition to the relationship between the therapist and the patient (Øien et al., 2011), while other health professionals (nutritionists, psychologists, physicians, speech therapists, etc.), the families and legal tutors participate in this process (Paşca, 2012). Physiotherapeutic treatment should include an adequate periodic evaluation of the patient's functional state (taking into consideration medical history and examination), the implementation of the rehabilitation program, patient counseling and, not least, a correct and objective presentation of the evaluation results and the functional state at the end of the program concerned (Schoeb et al., 2014; Talvitie & Reunanen, 2002).

Although this profession is a specific one across the globe, the initial training of physiotherapists and a number of aspects related to daily practice in rehabilitation services vary from one country to another depending on the social, economic and political context (Muhammad et al., 2015; Moffat, 2012). National occupational standards are also different. The position of physiotherapists in society is well known due to their education and experience, elements that give them self-confidence, entailing the responsibility to comply with conduct and behavior standards. The principles and values of the physiotherapist's activity are established by the deontological code and mentioned in occupational standards (Praestegaard, 2012). Thus, for the appropriate functioning of physiotherapeutic services, a series of requirements have been formulated which guide the entire rehabilitation process (Adam et al., 2012). These requirements refer to the presence of an individual patient file, obtaining an informed consent, respecting the patient's privacy, conducting history taking and the initial interview under optimal conditions, the confidentiality of the recorded data, the physiotherapist's transparency, the presentation of therapeutic options, objectives and effects, etc.

When patients present to physiotherapy services, they are most frequently deeply affected, scared and skeptical about the procedures to be performed (Albu et al., 2012). The key to therapeutic success is the behavior of the physiotherapist, who must understand the patient, the patient's family and the situations they face. It is desirable for the patient to meet an open-minded person, with a kind, understanding and good-humored attitude, which influences the patient's willingness to communicate various personal aspects, without feeling embarrassed.

Training of the staff and their approach to patients and to solving their different deficiencies are similar (Hiller et al., 2015). In Romania, private and public systems coexist to such a degree that it is difficult to draw a line between them. The state reimburses part of the procedures of private rehabilitation institutions, and some physiotherapists work in both the public and private sector.

Hypothesis

This study aims to compare the results recorded based on questionnaires administered to patients and physiotherapists. The main hypothesis from which we started in this study is that the results obtained from the patients' questionnaires are in full agreement with the results obtained from physiotherapists in terms of quality of the provided services and satisfaction with interaction and communication in private rehabilitation institutions.

Material and methods

The study was carried out over a period of six weeks (11 June - 20 July 2018) in 7 private rehabilitation institutions in Târgu Mureş, Romania, on a group of 130 patients and 13 physiotherapists.

All subjects included in this study were informed about the purpose of this research and gave their consent for the use of their personal data, while they remained anonymous. Data regarding age, sex, experience as a physiotherapist were recorded (Table I). Also, in the case of patients, the number of rehabilitation sessions performed, their age and sex were taken into consideration (Table II).

Table I

The physiotherapists included in the study and their distribution depending on age, sex and experience

Number of physio-therapists	Mean age (years)	Experience as a physiotherapist (years)	Women (no)	Men (no)
13	30.5	7.7	6 ↓ 46.15%	7 ↓ 53.85%

Table II

The patients included in the study and their distribution depending on age, sex and the sessions performed

Number of patients	Mean age (years)	Number of sessions performed	Women (no)	Men (no)
130	42.3	43.1	80 ↓ 61.54%	50 ↓ 38.46%

The study was conducted using two questionnaires, one for physiotherapists and the other for patients, with items evaluating the same aspects for patients and physiotherapists. The questionnaires comprised 28 items, each having three answer variants. Depending on the

responses provided for each item, these were grouped into three categories: negative, neutral and positive responses. Following a preliminary analysis, it was found that for some items, the answers were not statistically relevant. Consequently, 8 of the 28 items were eliminated. This exclusion was aimed at orienting the research towards its analytical qualitative and statistically validated component, to the detriment of quantitative aspects, with a sometimes lower significance level.

Results

The aspects assessed by the 20 items applied to patients and physiotherapists and the distribution of the recorded answers are presented in Table III.

The comparative analysis, statistically processed using the *GraphPad Prism 6* software, of the statistical significance of the differences between the *negative and positive responses* given by physiotherapists and patients to the 20 items and the calculation of the *"t" test* show the following:

At a probability threshold of $P < 0.05$, the difference between the two rows of data is *highly statistically significant*, the calculated value of *"t"* being *3.042* and that of $R^2 = 0.1958$, with a 95% confidence interval ranging between *3.830* and *19.22* (Table IV).

Table IV

Comparative analysis of negative and positive responses given by physiotherapists and patients

Statistical indicators	Values
Significantly different?	Yes
t, df	t=3.042 df=38
Mean ± SEM of column A	9.808 ± 2.430, n=20
Mean ± SEM of column B	21.35 ± 2.912, n=20
Difference between means	11.54 ± 3.793
95% confidence interval	3.860 to 19.22
R squared	0.1958

The comparative analysis, statistically processed using the *GraphPad Prism 6* software, of the statistical significance of the differences between the *negative and neutral responses* given by physiotherapists and patients to the 20 items and the calculation of the *"t" test* evidence the following:

At a probability threshold of $P < 0.05$, the difference between the two rows of data is *highly statistically significant*, the calculated value of *"t"* being *2.42* and that of $R^2 = 0.1336$, with a 95% confidence interval ranging between *1.676* and *18.81* (Table V).

Table III

Distribution of responses to the 20 questions

n	Item	Negative responses			Neutral responses			Positive responses		
		F %	P %	Δ R_F-R_P	F %	P %	Δ R_F-R_P	F %	P %	Δ R_F-R_P
1	Interest in the physiotherapist's identity	30.77	3.85	**26.92**	30.77	28.46	**2.31**	38.46	67.69	**29.23**
2	History taking by the physiotherapist	15.38	10.77	**4.61**	15.38	26.15	**10.77**	69.23	63.08	**6.15**
3	Environmental privacy during history taking and the initial interview	30.77	37.69	**6.92**	53.85	32.31	**21.54**	15.38	30.00	**14.62**
4	The patient's or the family's informed consent regarding the rehabilitation procedures	69.23	26.92	**42.31**	30.77	55.38	**24.61**	0.00	17.69	**17.69**
5	Informing the patient about the possibility of rejecting some components of the rehabilitation program	23.08	28.46	**5.38**	30.77	10.00	**20.77**	46.15	61.54	**15.39**
6	Patient consent regarding the presence of student practitioners in the rehabilitation room	30.77	33.08	**2.31**	23.08	19.23	**3.85**	46.15	47.69	**1.54**
7	Explaining the objectives and procedures of the rehabilitation program	7.69	0.77	**6.92**	33.77	17.69	**16.08**	61.54	81.54	**20.00**
8	The answers given by the physiotherapist were clarifying	0.00	0.77	**0.77**	46.15	6.92	**39.23**	53.85	92.31	**38.46**
9	Continuity of the rehabilitation program, number of physiotherapists involved in the rehabilitation of a patient	7.69	15.38	**7.69**	76.92	37.38	**39.54**	15.38	46.92	**31.54**
10	Respect for the patient	0.00	0.00	**0.00**	30.77	3.85	**26.92**	69.23	96.15	**26.92**
11	Satisfaction with patient-physiotherapist communication	7.69	0.00	**7.69**	23.08	6.15	**16.93**	69.23	93.85	**24.62**
12	Presence of a multidisciplinary team	15.38	16.92	**1.54**	53.85	25.38	**28.47**	30.77	57.69	**26.92**
13	Communication difficulties because of the language (Hungarian)	7.69	4.62	**3.07**	53.85	11.54	**42.31**	38.46	83.85	**45.39**
14	Facing uncomfortable situations regarding the communication of various personal aspects	0.00	4.62	**4.62**	69.23	10.77	**58.46**	30.77	65.38	**34.61**
15	Supporting the patients at moments of sadness and mental depression	0.00	8.46	**8.46**	30.77	18.46	**12.31**	69.23	73.08	**3.85**
16	Motivation of the patients	15.38	44.62	**29.24**	15.38	19.23	**3.85**	69.23	36.15	**33.08**
17	Bias regarding the quality of private institutions compared to public institutions	69.23	74.62	**5.39**	23.08	16.15	**6.93**	7.69	9.23	**1.54**
18	Continuous evaluation and the patient's individual file	30.77	18.46	**12.31**	38.46	20.77	**17.69**	30.77	60.77	**30.00**
19	Influence of giving small gifts to the physiotherapist (chocolate, flowers, etc.)	7.69	2.31	**5.38**	7.69	9.23	**1.54**	84.62	88.46	**3.84**
20	Influence of the limited time of the rehabilitation session on the quality of communication and interaction	23.08	8.46	**14.62**	23.08	16.15	**6.93**	53.85	75.38	**21.53**
	Mean	-	-	**9.81**	-	-	**20.05**	-	-	**21.35**

Legend : F = physiotherapists; P = patients; R_F = responses from physiotherapists; R_P = responses from patients; Δ = difference

Table V
Comparative analysis of negative and neutral responses given by physiotherapists and patients

Statistical indicators	Values
Significantly different?	Yes
t, df	t=2.420 df=38
Mean ± SEM of column A	9.808 ± 2.430, n=20
Mean ± SEM of column B	20.05 ± 3.466, n=20
Difference between means	10.24 ± 4.233
95% confidence interval	1.676 to 18.81
R squared	0.1336

The comparative analysis, statistically processed using the *GraphPad Prism 6* software, of the statistical significance of the differences between the *positive and neutral responses* given by physiotherapists and patients to the 20 items and the calculation of the *"t" test* evidence the following:

At a probability threshold of $P < 0.05$, the difference between the two rows of data is *statistically insignificant*, the calculated value of *"t"* being *0.2859* and that of $R^2 = 0.002146$, with a 95% confidence interval ranging between *-10.46* and *7.870* (Table VI).

Table VI
Comparative analysis of positive and neutral responses given by physiotherapists and patients

Statistical indicators	Values
Significantly different?	No
t, df	t=0.2859 df=38
Mean ± SEM of column A	21.35 ± 2.912, n=20
Mean ± SEM of column B	20.05 ± 3.466, n=20
Difference between means	-1.294 ± 4.527
95% confidence interval	-10.46 to 7.870
R squared	0.002146

In order to extend the qualitative and the statistical validity components, we detected 10 items, defined by us as *great contrariness* items – great differences between the responses of physiotherapists and those of patients – (ΔR_F-R_P = 13.08 ↔ 42.32) and *small contrariness* items – small differences between the responses of physiotherapists and those of patients – (ΔR_F-R_P = 0.77 ↔ 10.01).

The comparative analysis, using the *GraphPad Prism 6* software, of the differences between the *negative and positive responses* given by physiotherapists and patients to the 10 items with *great contrariness* answers (items 4,5,7,8,9,10,11,12,13,14) and the 10 items with *small contrariness* (items 1,2,3,6,15,16,17,18,19,20) shows the following:

Regarding the *great contrariness* responses, at a probability threshold of $P < 0.05$, the difference between the two rows of data is *highly statistically significant*, the calculated value of "*t"* being *4.086* and that of $R^2 = 0.4812$, with a 95% confidence interval ranging between *9.791* and *30.52* (Table VII).

Concerning the *small contrariness* responses, at a probability threshold of $P < 0.05$, the difference between the two rows of data is *statistically insignificant*, the calculated value of *"t"* being *0.58* and that of $R^2 = 0.01835$, with a 95% confidence interval ranging between *-7.662* and *13.51* (Table VII).

Table VII
Comparative analysis of positive and negative responses with great and small contrariness

Statistical indicators	Great contrariness responses	Small contrariness responses
Significantly different?	Yes	No
t, df	t=4.086 df=18	t=0.58 df=18
Mean ± SEM of column A	7.999 ± 3.915, n=10	11.62 ± 2.981, n=10
Mean ± SEM of column B	28.15 ± 3.002, n=10	14.54 ± 4.061, n=10
Difference between means	20.16 ± 4.933	2.922 ± 5.038
95% confidence interval	9.791 to 30.52	-7.662 to 13.51
R squared (eta squared)	0.4812	0.01835

Discussions

The comparative analysis of the differences between the *negative and positive responses* given by physiotherapists and patients shows that at a probability threshold of $P < 0.05$, there is a *highly statistically significant difference*, the calculated value of *"t"* being *3.042* and that of $R^2 = 0.1958$, with a 95% confidence interval ranging between *3.830* and *19.22*. Furthermore, the difference between *negative and neutral responses* is highly statistically significant, the calculated value of *"t"* being *2.42* and that of $R^2 = 0.1336$, with a 95% confidence interval ranging between 1.676 and 18.81, at a probability threshold of $P < 0.05$**.** On the other hand, the difference between positive and neutral responses is statistically insignificant, the calculated value of *"t"* being *0.2859* and that of $R^2 = 0.002146$, with a 95% confidence interval ranging between -10.46 and 7.870.

Some important aspects of the rehabilitation process are interpreted differently by patients and physiotherapists, with a major contrariness between their opinions. Following statistical analysis it was found that for some items, the answers showed a *highly statistically significant difference*, the calculated value of *"t"* being *4.086* and that of $R^2 = 0.4812$, with a 95% confidence interval ranging between *9.791* and *30.52*, at a probability threshold of $P < 0.05$. Thus, the following results are emphasized:

- Item no. 4. By interpreting the results regarding the request for the patient's or the family's informed consent, the difference between the negative responses of physiotherapists and patients is ΔR_F-R_P = 42.31, while the difference between positive responses is ΔR_F-R_P = 17.69;
- Item no. 5. With respect to informing the patient about the possibility of rejecting some components of the rehabilitation program, the difference between the negative responses of physiotherapists and patients is ΔR_F-R_P = 5.38, while the difference between positive responses is ΔR_F-R_P = 15.39;
- Item no. 7. Concerning the explanation of the objectives and procedures of the rehabilitation program, there is a difference between the negative responses of physiotherapists and patients of ΔR_F-R_P = 6.92, while the difference between positive responses is ΔR_F-R_P = 20.00;
- Item no. 8. By interpreting the results regarding the clarity of the answers provided by physiotherapists, the difference between the negative responses of physiotherapists and patients is ΔR_F-R_P = 0.77, while the difference between positive responses is ΔR_F-R_P = 38.46;
- Item no. 9. Regarding the number of physiotherapists involved in the rehabilitation of a patient and the continuity of the rehabilitation program, the difference between the negative responses of physiotherapists and patients is ΔR_F-

R_P = 7.69, while the difference between positive responses is ΔR_F-R_P = 31.54;

- Item no. 10. When it comes to respect for the patient, there is a difference between the negative responses of physiotherapists and patients of ΔR_F-R_P = 0.00, while the difference between positive responses is ΔR_F-R_P = 26.92;

- Item no. 11. In terms of satisfaction with patient-physiotherapist communication, the difference between the negative responses of physiotherapists and patients is ΔR_F-R_P = 7.69, while the difference between positive responses is ΔR_F-R_P = 24.62;

- Item no. 12. The existence of a multidisciplinary team is controversial, the difference between the negative responses of physiotherapists and patients being ΔR_F-R_P = 1.54, while the difference between positive responses is ΔR_F-R_P = 26.92;

- Item no. 13. Regarding communication difficulties because of the Hungarian language, there is a difference between the negative responses of physiotherapists and patients of ΔR_F-R_P = 3.07, while the difference between positive responses is ΔR_F-R_P = 45.39;

- Item no. 14. By interpreting the results of facing uncomfortable situations related to the communication of various personal aspects, the difference between the negative responses of physiotherapists and patients is ΔR_F-R_P = 4.62, while the difference between positive responses is ΔR_F-R_P = 34.61.

Conclusions

1. Following the investigation, interpretation and statistical analysis of the results, it can be said that the hypothesis was rejected. The results recorded using the patients' questionnaires do not correspond to the results obtained from physiotherapists in terms of quality of the provided services and satisfaction with interaction and communication in the private rehabilitation institutions.

2. Aspects such as the presence of an individual patient file, obtaining the informed consent, respecting the patient's privacy, conducting history taking and the initial interview under optimal conditions, etc. were identified to be interpreted differently by physiotherapists and patients, which led to the conclusion that certain aspects of daily practice mentioned in national occupational standards are not fulfilled.

3. We consider it imperative that physiotherapy services be provided at higher education and practice standards, so that we wish the results presented in this study to represent a red flag. The area of action of physiotherapy is not limited to treating the patient and involves a number of factors that we attempted to highlight in this paper.

Conflicts of interest

No conflict to declare.

References

Adam K, Peters S, Chipchase L. Knowledge, skills and professional behaviours required by occupational therapist and physiotherapist beginning practitioners in work-related practice: a systematic review. Aust Occup Ther J. 2013;60(2):76-84. doi: 10.1111/1440-1630.12006.

Ajjawi R, Higgs, J. Core components of communication of clinical reasoning: a qualitative study with experienced Australian physiotherapists. Advances in Health Sci Educ 2012;17(1):107-119. doi: 10.1007/s10459-011-9302-7.

Albu C, Armbruster TL, Albu M. Kinetoterapie. Metodologia poziționării și mobilizării pacientului. Ed. Polirom Iași, 2012,11.

Hiller A, Guillemin M, Delany C. Exploring healthcare communication models in private physiotherapy practice. Patient Educ Couns. 2015;98(10):1222-1228. doi: 10.1016/j.pec.2015.07.029.

Lattanzi JB, Pechak C. Educating Globally Minded Physical Therapist Students: Curriculum Strategies to Equip the Next Generation. J Phys Ther Educ. 2012;26(1):55-60.

Lonsdale C, Hall AM, Williams GC, McDonough SM, Ntoumanis N, Murray A, Hurley DA. Communication style and exercise compliance in physiotherapy (CONNECT): a cluster randomized controlled trial to test a theory-based intervention to increase chronic low back pain patients' adherence to physiotherapists' recommendations: study rationale, design, and methods. BMC Musculoskelet Disord. 2012;13:104. doi: 10.1186/1471-2474-13-104.

Moffat M. A History of Physical Therapist Education around the World. J Phys Therapy Educ. 2012;26(1):13-23.

Muhammad TK, Muhammad FS, Muhammad HS, Muhammad S. Current Role of Physiotherapy in Response to Changing Healthcare Needs of the Society. Int J Educ Inform Technol. 2015;1(3):105-110.

Odebiyi DO, Omotunde AO, Aiyejusunle CB, Olalekan TA. Knowledge and perception of physiotherapy by final year medical students of a Nigerian university. Nig Q J Hosp Med. 2008;18(3):156-161.

Øien AM, Steihaug S, Iversen S, Råheim M. Communication as negotiation processes in long-term physiotherapy: a qualitative study. Scand J Caring Sci. 2011;25(1):53-61. doi: 10.1111/j.1471-6712.2010.00790.x.

Parry RH, Brown K. Teaching and learning communication skills in physiotherapy: What is done and how should it be done? Physiotherapy. 2009;95(4):294-301. doi: 10.1016/j.physio.2009.05.003.

Parry RH. Communication during goal-setting in physiotherapy treatment sessions. Clin Rehabil. 2004;18(6):668-682. doi:10.1191/0269215504cr745oa.

Pașca MD. Comunicarea în relația medic – pacient. Ed. University Press, Tîrgu Mureș, 2012, 231-232.

Pinto RZ, Ferreira ML, Oliveira VC, Franco MR, Adams R, Maher CG, Ferreira PH. Patient-centred communication is associated with positive therapeutic alliance: a systematic review. J Physiother. 2012;58(2):77-87. doi: 10.1016/S1836-9553(12)70087-5.

Praestegaard J, Gard G. Ethical issues in physiotherapy - reflected from the perspective of physiotherapists in private practice. Physiother Theory Pract. 2013;29(2):96-112. doi:10.3109/09593985.2012.700388.

Schoeb V, Staffoni L, Parry R, Pilnick A. "What do you expect from physiotherapy?": a detailed analysis of goal setting in physiotherapy. Disabil Rehabil. 2014;36(20):1679-1686. doi: 10.3109/09638288.2013.867369.

Talvitie U, Reunanen M. Interaction between physiotherapists and patients in stroke treatment. Physiotherapy. 2002;88(2):77-88. DOI:https://doi.org/10.1016/S0031-9406(05)60931-5.

Włoszczak-Szubzda A, Jarosz MJ. Professional communication competences of physiotherapists - Practice and educational perspectives. Ann Agric Environ Med. 2013;20(1):189-194.

Woodward-Kron R, van Die D, Webb G, Pill J, Elder C, McNamara T, Manias E. Perspectives from physiotherapy supervisors on student-patient communication. Int J Med Educ. 2012;3:166-174. doi: 10.5116/ijme.502f.6e18.