Meta-analysis and systematic review of counselling on surgery

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Background: It was to examine the influence of preoperative doctor-patient communication (D-PC) on surgery, and to improve the postoperative recovery effect of patients via meta-analysis.

Methods: Meta-analysis was performed to study the influence of preoperative D-PC on surgery and improve the postoperative recovery effect of patients. Boolean logic search method was adopted, and “Preoperative communication”, “psychological counseling”, “Surgical effect”, and “D-PC” were set as search terms. Literature retrieval of PubMed, Medline, and CNKI from the establishment to the present was conducted. Literatures that performed comparative studies and set group without preoperative communication between doctors and patients as a control were screened. Review Manager (RevMan) was adopted to carry out meta-analysis.

Results: Fifteen papers were selected in this analysis, most of which were of low-risk bias (medium or high quality). Meta-analysis revealed that there was no statistical heterogeneity in postoperative speech function between control and experimental groups ($\text{Chi}^2 = 1.04$, $I^2 = 0\%$, $P = 0.96$), and postoperative speech function of experimental group was remarkably better in contrast to control group ($Z = 4.09$, $P < 0.00001$). No statistical heterogeneity was found in the Asiatic aphasia test (AAT) results between two groups ($\text{Chi}^2 = 3.77$, $I^2 = 0\%$, $P = 0.44$), and there was no considerable difference in AAT test results between groups ($Z = 1.37$, $P = 0.17$). There was statistical heterogeneity in the postoperative quality of life scores between different groups ($\text{Chi}^2 = 115.99$, $I^2 = 97\%$, $P < 0.00001$), and postoperative quality of life scores of patients in experimental group were greatly superior to the control ($Z = 1.98$, $P = 0.05$). There was statistical heterogeneity in daily communication ability between groups ($\text{Chi}^2 = 14.60$, $I^2 = 73\%$, $P = 0.006$), and daily communication ability of patients in experimental group was substantially stronger in contrast to the control ($Z = 7.40$, $P < 0.00001$).

Discussion: Through meta-analysis methods, it was found that preoperative D-PC can effectively improve the postoperative speech function and daily communication ability recovery of patients, the postoperative quality of life, and the postoperative recovery of patients.

Keywords: Doctor-patient communication (D-PC); low-risk bias; Asiatic aphasia test (AAT)

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Introduction

Doctor-patient communication (D-PC) refers to the topics of injury, diagnosis, treatment, and health between doctors and patients in medicine and health care. Taking

the medical side as the leading factor, through a variety of characteristic and comprehensive information exchanges via multiple channels, it scientifically guides the diagnosis and treatment of patients' injuries. Moreover, it enables doctors and patients to reach consensus and establish a

trusting and cooperative relationship, to maintain human health and promote medical and social progress. D-P C is a basic skill that medical staffs must master in practice, and it is also an important foundation for building a harmonious doctor-patient relationship (1,2). It not only forms cooperation of patients with medical activities, but also makes doctors get comprehensive understanding of the patient's entire medical history, thereby making accurate diagnosis and providing timely treatment. As a result, patients will have satisfactory services. In addition, it also has a certain impact on the recovery effect of patients after surgery (3,4). Data has shown that medical conflicts caused by insufficient communication between doctors and patients accounted for 49% (5,6). In the process of clinical diagnosis, treatment, and nursing, only when D-PC skills are mastered can medical safety be ensured and medical risks are reduced (7,8). Before doctor-patient information exchange, understanding the needs and suggestions of patients, providing the information that patients need, and communicating in a form that they are willing to accept is the key to improving the level and satisfaction of doctor-patient information exchange. D-PC is a requirement of medical diagnosis. The prerequisite for diagnosis is to know the cause and process of the disease (9,10). It is also necessary for clinical treatment, and medical activities are between doctors and patients (11,12).

With the development of modern surgery, D-PC before surgery becomes of positive significance for improving the clinical efficacy of patients undergoing surgery and reducing the incidence of complications (13,14). Therefore, it has always been valued in surgical treatment. D-PC and operating room nursing have developed from the initial auxiliary work of assisting surgeons to comprehensive nursing interventions involving both medicine and nursing (15,16). Meta-analysis was performed to study the impact of preoperative D-PC on surgery. We present the following article in accordance with the PRISMA reporting checklist (available at <http://dx.doi.org/10.21037/apm-21-1058>).

Methods

Literature searches

Compound and Boolean logic retrieval were used to select relevant papers. "Preoperative communication", "psychological counseling", "surgical effect", and "D-PC" were used as search terms. PubMed, Medline, Embase, Chinese Biomedical Literature Database, CNKI database,

WanFang database, VIP database, and Google Academic database were searched. All the included literature and the reference lists of published reviews were traced to find papers that were not indexed by the database from establishment to October 30, 2020. According to RevMan 5.2 provided by the Cochrane system, the quality of the literature was evaluated. All of the search words were combined freely. After literature was searched many times, search engines were used to track down the literature. Contact was made with researchers in related field to keep up to date with the latest research progress.

Inclusion and exclusion criteria

The included literature met all the following criteria: (I) subjects were patients diagnosed as undergoing surgery; (II) intervention measures for patients included preoperative D-PC and psychological counseling for patients in experimental group; (III) control group did not receive psychological and communication intervention; (IV) study types included randomized clinical trial, prospective cohort study, and case-control study.

Those met any of the following criteria were excluded: (I) the included subjects had serious infectious diseases or neurological diseases; (II) there were no randomized controlled trials; (III) no effective data or lack of information; (IV) overlap of research objects or data; (V) republished literature and literature with too few selected experimental samples.

The abstracts and main texts of these articles were screened by two experts independently, and three pre-tests were required. A consensus conclusion should be reached or a third party would arbitrate them if there were inconsistent opinions.

Quality assessment

Newcastle-Ottawa Scale (NOS) of the Cochrane Collaboration was utilized to assess pathologic control studies in meta-analysis. The star system (full score was 9 stars) was adopted to evaluate the results of subjects, case and inter-group comparisons. Article with no less than 7 stars was deemed as high quality, that was, low risk bias. That with 1 star or no star was deemed as low quality, i.e., high risk bias. Article with 2–6 stars was deemed as medium quality, i.e., medium risk bias.

Literature quality was evaluated by 2 experts independently, and 3 pre-tests were done before the evaluation. If the

Figure 1 Screening flow charts.

2 experts disagreed, the outcome was determined after a discussion, or a third party arbitrate it.

Data extraction

A unified Excel table was used by two experts to extract data independently. Before which, three preliminary experiments were requested. A consensus would be made or a third party would arbitrate if there were inconsistent opinions. Extracted data for the included research were as follows: (I) the first author and publication year; (II) number of subjects in both groups; (III) grouping and interventions used by experimental and control group; (IV) patient's surgery and postoperative recovery indicators, such as language function test score, daily communication ability, and quality of life.

Statistical analysis

RevMan 5.3 was employed to perform meta-analysis. For the continuous variables, MD (mean difference) or SMD (standard mean difference) and 95% confidence interval (CI) were used as the efficacy analysis statistics. First, the included literatures were tested for heterogeneity (Q test). RevMan's risk of bias assessment chart was utilized to illustrate risk of bias of the publications included. Each

effect was illustrated as 95% CI. If heterogeneity test showed that $P > 0.1$ and $I^2 < 50\%$, fixed effects model (FEM) was utilized. If heterogeneity test showed that $P < 0.1$ and $I^2 > 50\%$, random effects model (REM) was utilized.

Results

Document collection results and NOS rating

In *Figure 1*, 250 papers were obtained, 140 were removed because of the abstracts and titles, 95 were removed because of full text, and 15 were finally selected for meta-analysis. The excluded literature mainly included the following issues: (I) subjects had primary acute and chronic cardiopulmonary dysfunction, diabetes, and mental illnesses (46 articles); (II) the research involved animal experiments (21 articles); (III) the research objects were repeated (35 articles); (IV) research related information could not be extracted (66 articles); (V) research indicators included non-surgical postoperative rehabilitation effects (48 articles); (VI) research results lacked original data (21 articles). *Table 1* presents the basic information of the included works. The publication year years covered 2001–2017. *Figure 2* shows the results of the NOS scale rating. There were 6 papers with 7 stars and above, 9 papers with 2–6 stars, and 0 papers had below 2 stars, all of which were medium and high-quality literature.

Table 1 General information of the included works

Author	Year	Number of patients (control group)	Number of patients (experimental group)	Control group	Experimental group	Parameters	Intervention time (hours/day)
Wilssens	2015	5	4	No intervention	Standardized D-PC	Speech function measurement	2–3
Szaflarski	2015	14	10	No intervention	Standardized D-PC	Speech function measurement and daily communication skills	4
Nenert	2017	11	8	No intervention	Standardized D-PC	Speech function measurement and daily communication skills	4
Shi	2006	10	10	No intervention	Standardized D-PC	Speech function measurement	–
Zhou	2014	10	10	Conventional treatment	Standardized D-PC	Speech function measurement and daily communication skills	1
Xie	2014	15	15	Traditional language communication	Standardized D-PC	Speech function measurement and daily communication skills	3
Sickert	2013	50	50	Traditional treatment	Standardized D-PC	AAT and daily communication skills	–
Stahl	2016	9	9	Traditional treatment	Standardized D-PC	AAT	–
Pulvermüller	2001	10	7	Traditional treatment	Standardized D-PC	AAT	2
Woldag	2016	20	20	Traditional treatment	Standardized D-PC	AAT and daily communication skills	3
Qi	2007	40	42	No intervention	Standardized D-PC	Quality-of-life score	–
Hoffman	2012	103	111	No intervention	Standardized D-PC	Quality-of-life score	–
Napoles	2015	76	75	No intervention	Standardized D-PC	Quality-of-life score	–
Yoo	2005	30	30	No intervention	Standardized D-PC	Quality-of-life score	–
Li	2015	32	31	No intervention	Standardized D-PC	Quality-of-life score	–

D-PC, doctor-patient communication.

Evaluation results of literature risk bias

Figures 3 and 4 show the results of multiple risk bias of literature assessed by RevMan. For each methodological feature of the included literature, the results assessed were analyzed to generate a bias risk plot. The random

sequence generation (selection bias), allocation concealment (selection bias), and blinding method of results evaluation (measurement bias) were obviously low-risk bias, so did incomplete data [follow-up bias, selective reporting (reporting bias)]. In addition, blinding (implementation bias) and other low-risk bias evaluations of subjects and

researchers were also around 50%. Except for the literature of Napoles [2015] and Pulvermuiler [2001], the risk bias of the rest of the literature was at a significantly low risk.

Comparison of postoperative speech function

Figure 5 presents the comparison of postoperative speech function. The results of Xie [2014] accounted for the highest percentage among final combined results (79.5%), followed by those of Shi [2006] (11.8%) and Zhou [2014] (8.4%). Horizontal line (HL) of 95% CI of massive literature fell on the right of invalid vertical line (IVL), and HL crossed IVL. HL of 95% CI of a few papers fell on the left side of IVL. Fifty seven patients were in control group, and 65 were in experimental group in the 15 included studies. There was no statistical heterogeneity in postoperative speech function between groups ($\text{Chi}^2 = 1.04$, $I^2 = 0\%$, $P = 0.96$). Furthermore, combined effect size, which

Figure 2 Newcastle-Ottawa scale (NOS) for quality grading.

was represented by diamond block in the results below, was on the right of IVL, OR was 1.23, and 95% CI = (0.64, 1.82). FEM was adopted. It was indicated that the postoperative speech function of experimental group was remarkably superior to control group ($Z = 4.09$, $P < 0.00001$).

Figure 6 is a funnel plot of the comparison of postoperative speech function between two groups. Evidently, the circles of some articles were in the top, and the research accuracy was high. There were circles of the included articles on both sides of midline, which weren't symmetrical, suggesting publication bias of these published works.

Asiatic aphasia test (AAT) test results

Figure 7 shows the comparison results of the AAT test between control group and experimental group. Woldag's [2016] research results accounted for the highest percentage (87.5%), followed by Pulvermuiler's [2001] (11.4%). HL of 95% CI of most literature crossed IVL. HL of 95% CI of a few papers fell on IVL's right. There was a total of 90 patients in control group and 94 in experimental group. No statistical heterogeneity in the AAT test results was suggested between different groups ($\text{Chi}^2 = 3.77$, $I^2 = 0\%$, $P = 0.44$). Diamond block crossed IVL, OR was -0.52 , and 95% CI was $(-1.27, 0.22)$. FEM was utilized, and there was no considerable difference between two groups in AAT test results ($Z = 1.37$, $P = 0.17$).

Figure 8 is a funnel plot of the comparison results of the AAT test. It can be seen that on both sides of midline, the circles of the included papers can be observed and were

Figure 3 Literature risk bias evaluation results.

	Random sequence generation (selection bias)	Allocation concealment (selection bias)	Blinding of participants and personnel (performance bias)	Blinding of outcome assessment (detection bias)	Incomplete outcome data (attrition bias)	selective reporting (reporting bias)	Other bias
Hoffman 2012	?	?	+	+	+	+	+
Li 2015	?	+	?	?	+	+	+
Napoles 2015	?	?	+	?	+	+	+
Nenert 2017	?	+	+	+	+	+	?
Pulvermüller 2001	+	+	+	?	?	?	+
Qi 2007	+	+	?	?	+	?	?
Shi 2006	+	+	+	+	+	?	?
Sickert 2013	+	+	?	?	?	+	+
Stahl 2016	+	+	?	?	+	+	+
Szaflarski 2015	+	?	+	?	+	+	+
Wilssens 2015	?	?	+	?	+	+	+
Woldag 2016	+	+	+	?	?	?	?
Xie 2014	?	?	+	+	+	+	+
Yoo 2005	?	+	?	+	?	+	+
Zhou 2014	+	+	+	+	+	?	+

Figure 4 Literature risk bias evaluation results.

Figure 5 Comparison of postoperative speech function.

symmetrical, proving that the included literature did not have publication bias.

Comparison of postoperative quality of life scores

Figure 9 shows comparison results of the postoperative quality of life scores. The research results of Li [2015] had the highest percentage (20.7%), followed by Napoles [2015] (20.4%) and Hoffman [2012] (20.3%). HL of 95% CI of most articles fell on IVL's right, and HL crossed IVL. HL of 95% CI of a few papers fell on the left side of IVL. Among the 15 studies, there were 289 and 281 patients in control and experimental group, respectively. Statistical heterogeneity in the postoperative quality of life scores was revealed between different groups (Chi² = 115.99, I² = 97%, P < 0.00001). Diamond block was on IVL's right, OR was 12.76, and 95% CI = (0.13, 25.40). REM was used. The postoperative quality of life scores of experimental group were greatly superior to those of controls (Z = 1.98, P = 0.05).

Figure 10 is comparison of the probability of better prognostic function between groups. On both sides of the midline, the circles of the included papers were found but not symmetrical, which indicated certain publication bias.

Comparison of postoperative daily communication ability

Figure 11 shows the comparison of daily communication ability of two groups. Xie's [2014] research results accounted for the highest percentage (40.9%), followed by Woidag's [2016] (40.8%) and Sickert's [2013] (10.0%). HL of 95% CI of most studies fell on IVL's right, and HL crossed IVL. HL of 95% CI of a few papers fell on the left side of IVL. Among the 15 research, 96 subjects were in control group and 103 were in experimental group. There was statistical

Figure 6 Funnel plot of postoperative function of patients. [SE (MD): standard error; MD: effect size, and they indicate the same meanings for figures below].

Figure 7 Comparison of AAT test results. AAT, Asiatic aphasia test.

Figure 8 Funnel plot of AAT test results. AAT, Asiatic aphasia test.

Figure 9 Comparison of postoperative quality of life scores.

Figure 10 Funnel plot of postoperative quality of life scores.

Figure 11 Daily communication ability.

Figure 12 Funnel plot of daily communication ability.

heterogeneity in daily communication ability between two groups ($\chi^2 = 14.60$, $I^2 = 73\%$, $P = 0.006$). Diamond block was found on IVLs right, OR was 6.49, and 95% CI was (4.77, 8.21). REM was used. The daily communication ability of patients in experimental group was substantially stronger versus control group ($Z = 7.40$, $P < 0.00001$).

Figure 12 presents a funnel plot of the comparison of the daily communication ability. Evidently, on both sides of the midline, the circles of the included papers were observed, which weren't symmetrical, so publication bias were suggested.

Discussion

With the gradual deepening of medical reforms, the contradiction between doctors and patients has become increasingly prominent, and the safety situation faced by hospitals has become increasingly complex. The communication between doctors and patients is different from general interpersonal communication, because patients are a special group. Patients see the doctor not only to solve the disease, but also to desire the doctor's care, sympathy, and recognition, which is more sensitive

to the language, voice, and facial expressions of medical staff. Therefore, D-PC skills are imperative in daily clinical practice. The research of Lim *et al.* [2011] (17) found that timely and effective communication between doctors and patients can create a harmonious medical atmosphere. It can also effectively improve the doctor-patient relationship, improve clinical diagnosis and treatment efficacy, and reduce accidents to a large extent. Szychta *et al.* [2012] (18) proposed that the focus of operating room nursing work was to solve the problems that occurred in a specific stage. Medical staff should promptly and effectively communicate with patients before performing surgery and should conduct a comprehensive analysis of the injury and adverse effects that the surgical process may cause to the patient. Then, appropriate anesthesia, diagnosis, and treatment methods should be selected for the patient, so as to reduce the adverse effects on the patient, reduce the patient's tension, and further improve the patient's surgical effect and postoperative recovery. Among the 15 papers included in this study, 14 used randomized controlled grouping, and 1 used retrospective analysis methods, which introduced bias. However, it had limited effect on the overall results. The study of single sample may be unreliable, but quantitatively synthesizing each included paper can avoid the differences between literature that may be caused by sampling of various populations. Moreover, the results are assigned different weights with respect to sample number, so as to strengthen credibility of the conclusion. Number of papers included in this study was limited due to the objective influence, and the sample size should be increased to prevent bias in the analysis.

In this work, compound logic retrieval and Boolean logic retrieval methods were adopted, which yielded 15 papers that conducted comparative studies without preoperative D-PC as the control for meta-analysis, so as to discuss the influence of preoperative D-PC on surgery. The results showed that there was no statistical heterogeneity in postoperative speech function between groups ($\text{Chi}^2 = 1.04$, $I^2=0\%$, $P=0.96$), and postoperative speech function of experimental group was remarkably better versus control group ($Z=4.09$, $P<0.00001$). This is in line with the research results of Guo *et al.* [2018] (19), verifying that preoperative communication and psychological counseling for surgical patients can effectively improve the postoperative speech function recovery of patients. There was statistical heterogeneity in the postoperative quality of life scores between groups ($\text{Chi}^2 = 115.99$, $I^2=97\%$, $P<0.00001$), and the postoperative quality of life scores of experimental

patients were greatly superior to those of controls ($Z=1.98$, $P=0.05$). Statistical heterogeneity in daily communication ability between control and experimental group was found ($\text{Chi}^2 = 14.60$, $I^2=73\%$, $P=0.006$), and that of patients in experimental group was substantially stronger versus the control ($Z=7.40$, $P<0.00001$). Such results were similar to the research results of Michalski *et al.* [2016] (20). It was proved that preoperative D-PC can effectively improve postoperative speech function and promote the recovery of daily communication ability of patients, and also improves the postoperative quality of life and postoperative recovery of patients.

Conclusions

In this work, compound logic retrieval and Boolean logic retrieval methods were adopted, which yielded 15 papers that conducted comparative studies without preoperative D-PC as the control for meta-analysis, so as to discuss the influence of preoperative D-PC on surgery. The results show that preoperative D-PC can effectively improve postoperative speech function and promote the recovery of daily communication ability of patients, which also improves the postoperative quality of life and postoperative recovery of patients. However, there are various confounding factors. The literatures included were case-controls, resulting in inherent survival bias. Moreover, giving that there are many types of surgical procedures and predisposing factors, many risk factors aren't considered, which greatly reduces the combined effect size. In the follow-up, we will consider increasing the follow-up analysis of patients undergoing surgery, to discuss the impact of preoperative D-PC on surgery. This work provides a theoretical reference and data support for improving the effect and postoperative recovery of patients undergoing surgery.

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Footnote

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Ethical Statement: The authors are accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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References

1. Pulvermüller F, Neininger B, Elbert T, et al. Constraint-induced therapy of chronic aphasia after stroke. *Stroke* 2001;32:1621-6.
2. Nenert R, Allendorfer JB, Martin AM, et al. Neuroimaging Correlates of Post-Stroke Aphasia Rehabilitation in a Pilot Randomized Trial of Constraint-Induced Aphasia Therapy. *Med Sci Monit* 2017;23:3489-507.
3. Xie Y, Liu H, Wu C, et al. compulsory induced language therapy for post-stroke patients Observation on the effect of chronic aphasia. *Chinese Rehabilitation Theory and Practice* 2014;20:1011-3.
4. Stahl B, Mohr B, Dreyer FR, et al. Using language for social interaction: Communication mechanisms promote recovery from chronic non-fluent aphasia. *Cortex* 2016;85:90-9.
5. Szaflarski J, Allendorfer J, Ball A, et al. Randomized controlled trial of constraint-induced aphasia therapy in patients with chronic stroke. *Neurology* 2014;82.
6. Zhou Q, Cong F, Shen Y, et al. Compulsory induced speech therapy combined with low frequency repetition effect of transcranial magnetic stimulation on non-fluent aphasia. *Chinese Rehabilitation* 2014;29:325-7.
7. Shi S, Zhu H, Liu Z, et al. Compulsory induction treatment of aphasia after stroke treatment. *Chinese Rehabilitation* 2006;21:112.
8. Sickert A, Anders LC, Münte TF, et al. Constraint-induced aphasia therapy following sub-acute stroke: a single-blind, randomised clinical trial of a modified therapy schedule. *J Neurol Neurosurg Psychiatry* 2014;85:51-5.
9. Wilsens I, Vandenborre D, van Dun K, et al. Constraint-induced aphasia therapy versus intensive semantic treatment in fluent aphasia. *Am J Speech Lang Pathol* 2015;24:281-94.
10. Woldag H, Voigt N, Bley M, et al. Constraint-Induced Aphasia Therapy in the Acute Stage: What Is the Key Factor for Efficacy? A Randomized Controlled Study. *Neurorehabil Neural Repair* 2017;31:72-80.
11. Yoo HJ, Ahn SH, Kim SB, et al. Efficacy of progressive muscle relaxation training and guided imagery in reducing chemotherapy side effects in patients with breast cancer and in improving their quality of life. *Support Care Cancer* 2005;13:826-33.
12. Nápoles AM, Ortíz C, Santoyo-Olsson J, et al. Nuevo Amanecer: results of a randomized controlled trial of a community-based, peer-delivered stress management intervention to improve quality of life in Latinas with breast cancer. *Am J Public Health* 2015;105 Suppl 3:e55-63.
13. Hoffman CJ, Ersser SJ, Hopkinson JB, et al. Effectiveness of mindfulness-based stress reduction in mood, breast- and endocrine-related quality of life, and well-being in stage 0 to III breast cancer: a randomized, controlled trial. *J Clin Oncol* 2012;30:1335-42.
14. Qi G, Lu Q, Xu Q, et al. Influence of psychological intervention on emotion and quality of life of breast cancer patients. *Chinese Behavioral Medicine Science* 2007;16:51.
15. Li Q, He J, Long L, et al. Influence of psychological intervention on the quality of life of patients with depression after breast cancer surgery. *General Nursing* 2015;13:868-70.
16. Nikumb VB, Banerjee A, Kaur G, et al. Impact of doctor-patient communication on preoperative anxiety: Study at industrial township, Pimpri, Pune. *Ind Psychiatry J* 2009;18:19-21.
17. Lim L, Chow P, Wong CY, et al. Doctor-patient communication, knowledge, and question prompt lists in reducing preoperative anxiety: a randomized control study. *Asian J Surg* 2011;34:175-80.
18. Szycha P, Zieliński T, Rykała J, et al. Role of the internet in communication between patient and surgeon before rhinoplasty. *J Plast Surg Hand Surg* 2012;46:248-51.
19. Guo HC, Wang Y, Dai J, et al. Application of 3D

printing in the surgical planning of hypertrophic obstructive cardiomyopathy and physician-patient communication: a preliminary study. *J Thorac Dis* 2018;10:867-73.

20. Michalski A, Stopa M, Miśkowiak B. Use of Multimedia

Technology in the Doctor-Patient Relationship for Obtaining Patient Informed Consent. *Med Sci Monit* 2016;22:3994-9.

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