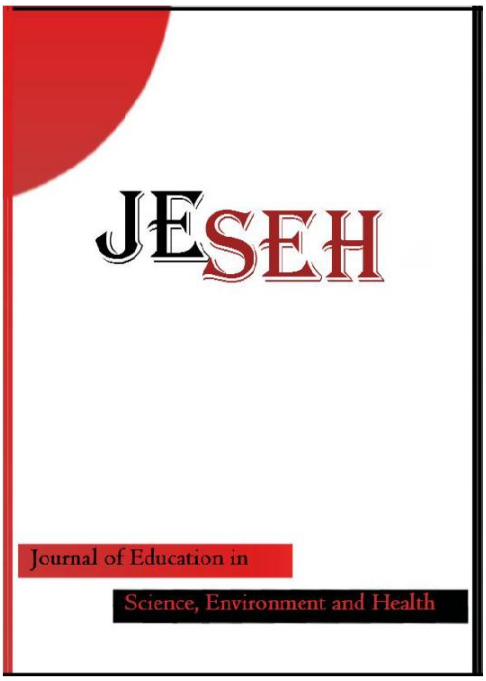

ISSN: 2149-214X

Journal of Education in Science, Environment and Health

www.jeseh.net

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To cite this article:

Tekin, M., Yurdal, M.O., Uysal, I., Aytug-Kosan, A.M. & Toraman, C. (2022). The effect of medical students' problem-solving perceptions and achievement on clinical reasoning levels. *Journal of Education in Science, Environment and Health (JESEH), 8*(3), 200-211. https://doi.org/10.55549/jeseh.1158500

JESEH
Journal of Education in Science, Environment and Health
Volume 8, Issue 3, 2022
https://doi.org/10.55549/jeseh.1158500

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Article Info

Article History

Published:
01 July 2022

Received:
30 January 2022

Accepted:
28 June 2022

Keywords

Medical Student
Problem-Solving
Achievement
Clinical Reasoning

Abstract

Clinical reasoning is important in medical education in terms of achieving the purpose of clinical practice. 3 cases in which clinical reasoning prepared by relevant experts from 3 different departments were applied to Year-5 students. As an indicator of academic success, the final grade of the internship and the general success average were taken. Problem solving perception scale was applied. This research aimed to examine the relationships between the problem solving, clinical reasoning and academic achievement levels of medical students. It was observed that clinical case evaluations showed a positive correlation with each other, a positive correlation was found between clinical case evaluations and problem solving perception, and the final grade of internship and GPA did not correlate with both clinical case assessment and problem solving perception. It is necessary to determine whether the clinical reasoning processes are used adequately by the students in medical education and the education programs should be reviewed and arranged accordingly.

Introduction

Clinical reasoning refers to repetitive and dynamic thinking processes in which nurses or doctors collect evidence, process information, understand patient problems, plan or apply treatment, evaluate results, and reflect the learning process (Kuiper, 2013). For this reason, it has been described as the main cognitive skill -the backbone- in terms of achieving the purpose of clinical practice, or in other words, the realization of the practice (Higgs et al., 2019; Mattingly, 1991; Young et al., 2020). Higgs (1993) counts clinical reasoning as the central component of clinical competence. Therefore, it is also considered the essential component of being a health professional (Higgs et al., 2019). As the presence of clinical reasoning is at a key point for the education of healthcare professionals, as mentioned, it has been included in certain educational stages and assessment-evaluation frameworks of medical education (Young et al., 2019). When the literature is examined, it is seen that clinical reasoning has many different definitions, terms and defined scopes. Such a situation can make it difficult to establish a common language for both medical learners and educators. According to Groves et al. (2002), clinical reasoning is the integration and synthesis of information obtained from a clinical case with the knowledge and experience of the physician/student, and its use in diagnosing the patient's problem and in the management of the patient. According to some researchers, clinical reasoning has been considered as the cognitive process underlying clinical practice and is generally expressed as problem solving (Maudsley & Strivens, 2000; Round, 2001). The common point that researchers have determined about clinical reasoning is that decision-making processes must be evidence-based in order to see the existence of clinical reasoning (Higgs et al., 2019; Mattingly, 1991; Young et al., 2019; Young et al., 2020). In terms of skill, clinical reasoning is defined as a skill, process, or outcome in which healthcare professionals or clinicians observe, collect, and interpret data to diagnose and treat patients (Gruppen & Frohna, 2002; Gruppen, 2017). According to Daniel et al. (2019), the components of clinical reasoning are information gathering, hypothesis generation, problem representation, differential diagnosis, selecting a leading or working diagnosis, providing diagnostic rationale, and developing a management or treatment plan, can be defined. Novice learners tend to have little and scattered knowledge, while with increasing experience knowledge is organized and placed into more complex structures and schemes. Studies in the field of clinical reasoning show that clinical reasoning is the critical component of clinical competence; structuring medical education in a way that enables specialization in clinical reasoning and creating appropriate learning environments where novices and specialists use different clinical reasoning reveals the necessity of monitoring and evaluating the development of clinical reasoning with appropriate assessment and evaluation tools during the education.

One of the definitions of clinical reasoning is problem solving as stated above. Pesen (2008) defined the problem as a situation where the way to reach a solution is not clear and requires students to use their current knowledge and reasoning skills. According to Krulik and Rudnick (1987), a problem is a situation that is numerical or non-numeric, does not have a specific meaning in reaching the solution as an individual or group, or the solution is not clear and may require resolving. Problem solving is defined as a person's ability to deal with a problem. It is also defined as "the process in which the difference between the desired situation and the current situation must be overcome in a situation affected by previously encountered or unencountered variables" (Huitt, 1992). Considering the daily routines of health professionals, it can be said that they encounter many different problems. So, for healthcare professionals, problem solving may require structuring knowledge to cope with difficulties and using some strategies to eliminate undesirable situations. The problem-solving process includes the re-representation or visualization of the problem in the mind (Mayer, 1992; Mayer & Wittrock, 2006), and this situation constitutes one of the clinical reasoning process skills as stated above. Finally, problem solving is an intellectual process of the brain that searches for an explanation of a particular problem or discovers a technique to understand a given goal (Wang & Chiew, 2010).

Success is seen as an expression of skills or knowledge gained, which is determined by grades, test scores, or both, developed in the lessons taught at school and appreciated by teachers, that is, as academic success. Academic success is "the level of proficiency that the student shows regarding the objectives of the program as a result of a certain program" (Cevizci, 2010; Demirel, 2019; Schunk, 2012). Academic achievement is the level of performance during training (Jarvis, 2004), a level of achievement measured by a knowledge or skill test (Spafford at al., 1998), or grades, degrees, and other certification or public may be reflected in the forms of consent. It is also defined as the attainment of knowledge, competence, and senior status (Collins & O'Brien, 2011). Individuals with high academic success are responsible, disciplined, success-oriented, analytical and independent, and have unusual thinking skills (Sığrı & Gürbüz, 2011). In addition, these individuals know that the behaviors they have learned will not remain constant, they can update to new situations and use self-regulated learning strategies (Zimmerman & Martinez-Pons, 1990). Grade point average (GPA) is generally accepted as an indicator of academic ability, academic performance and academic success (Bean, 2005). McGrath and Braunstein (McGrath & Braunstein, 1997) hypothesize that GPA is one of the most influential variables that show the persistence of behavior. This research aimed to examine the relationships between the problem solving, clinical reasoning and academic achievement levels of medical students.

Method

This research is a correlational study examining the relationships between problem solving perception, achievement and clinical reasoning level.

Participant

This research was conducted with Year 5 students of Çanakkale Onsekiz Mart University. Participation in the research was based on voluntary participation. In this respect, purposive sample was used in the research. When using purposeful sampling, researchers determine the characteristics of the people who will form the research universe and reach people who fit these characteristics. Based on the researcher's knowledge of the universe, it is ensured that the people (subjects) who can give the best information for the purpose of the research are selected (Christensen et al., 2014; McMillan & Schumacher, 2014). There were 112 Year 5 students who voluntarily participated in the research. Of these students, 66 (58.9%) are female and 46 (41.1%) are male.

Data Collection Tools

In this study, data were obtained from three sources. These are: Clinical reasoning form, problem-solving inventory, and achievement.

Clinical Reasoning Form

The form used in the study to obtain information about the clinical reasoning levels of Year 5 students was created by the researchers. The form included three findings, each of which required a conclusion by interpreting the information, signs and symptoms, which were given in two stages. The first of the cases is about

a case that concerns the department of emergency medicine, the second is about a case that is related to the department of cardiology, and the third is about a case that is related to the department of internal medicine (see Appendix 1). A total of 300 points can be obtained from three cases.

While determining the departments (emergency medicine, cardiology and internal diseases) from which the cases were selected, the statistics most frequently seen by a general practitioner who graduated from a six-year medical faculties according to the data of the Ministry of Health were taken into consideration. The cases were created by the researchers with the support of the faculty members of the relevant department. Each case created was presented to the opinion of a group of 7 experts from the relevant field. The consistency of the expert opinions was tested with the Krippendorff Alpha coefficient and a value of 0.84 was obtained (Krippendorff, 2004). As the obtained value showed consistency between raters, necessary corrections were made in the cases in line with expert opinions and their final form was given.

Problem-Solving Inventory (PSI)

In the study, the Problem-Solving Inventory (PSI) was developed by Heppner and Peterson in 1982 and adapted to Turkish Culture by Sahin, Sahin and Heppner (1993). In the adaptation study of the inventory to Turkish culture, the Cronbach alpha consistency coefficient was found to be 0.88. The PSI consists of 35 items and is 6-point Likert-type (“I always act like this”, “I usually act like this”, “I often act like this”, “I sometimes act like this”, “I rarely act like this” and “I never act like this."). Scoring in the inventory is done over 32 items. Items 1, 2, 3, 4, 11, 13, 14, 15, 17, 21, 25, 26, 30 and 34 are reverse scored. The range of points that can be obtained from the inventory is 32-192. Items 9, 22 and 29 are excluded from scoring (Uysal & Manavoğlu, 2019).

Achievement

Researchers thought it would be appropriate to compare medical students' clinical reasoning levels with four types of achievement scores. The first of the cases in the clinical reasoning form was related to emergency medicine, the second to cardiology, and the third to internal medicine. For this reason, the students' general success scores were obtained at the end of their internship in these three departments. In addition, the overall success average of the students as of July of the 2021-2022 academic year was taken. These scores, which give an idea about success, were obtained from the student affairs of the faculty.

Data Analysis

For the purpose of the research, it is necessary to examine the relationships between problem solving perception, academic achievement and clinical reasoning. Again, for the purpose of the research, the effect of problem-solving perception and academic achievement on clinical reasoning should be modeled with regression analysis. In the analysis, the normal distribution of the variables was examined for parametric or nonparametric method preference, and it was determined that the normal distribution was provided. Due to the normal distribution of the data, Pearson was preferred in the relationship analysis and multiple linear regression analysis was preferred in the regression analysis. Multiple linear regression models are in the parametric analysis group. In order to apply multiple linear regression modeling; a) the dependent (result, output) variable in the model should have a normal distribution, b) the independent (explanatory, predictive) variables should not be multicollinearity (variance influence factor-VIF analysis) (Cohen et al., 2002; DeMaris, 2004). In the regression analysis, multicollinearity analysis was performed between predictors. The obtained Variance Inflation Factor (VIF) values were very close to 1. Therefore, it was decided that there was no autocorrelation between predictors (DeMaris, 2004; Pedhazur, 1997).

Ethical Consideration

This research was carried out with the decision of the Clinical Research Ethics Committee of Çanakkale Onsekiz Mart University, dated 09.12.2020 and numbered 14.

Results and Discussion

Pearson correlation analysis was used to test the relationships between the PSI scores of Year 5 medical students, the achievement levels of emergency medicine, cardiology, internal diseases at the end of their internship, the general success average, and the clinical reasoning cases (case). The results are presented in Table 1.

Table 1. Relationships between problem solving perception, achievement, and clinical reasoning

	1	2	3	4	5	6	7	8
1. Case (Cardiology)	1							
2. Case (Internal Diseases)	0.694**	1						
3. Case (Emergency Medicine)	0.454**	0.652**	1					
4. Clinical Reasoning (Total Score)	0.848**	0.946**	0.758**	1				
5. PSI	0.592**	0.675**	0.624**	0.729**	1			
6. Cardiology Achievement	0.022	-0.017	0.076	0.018	-0.090	1		
7. Internal Diseases Achievement	0.070	0.071	0.001	0.064	-0.075	0.169	1	
8. Emergency Medicine Achievement	0.057	0.043	0.031	0.052	-0.116	0.237*	0.504**	1
9. GPA	0.163	0.073	0.107	0.125	0.049	0.209*	0.261**	0.262**

N=112, *p<.05, **p<.01

According to the results of the relationship analysis;

- A positive and significant (p<.05) correlation was found between the clinical reasoning case related to the cardiology department and the scores obtained from the cases belonging to the other two departments (internal medicine and emergency medicine).
- A positive and significant (p<.05) correlation was found between the clinical reasoning case related to the cardiology department and the total score obtained from the clinical reasoning cases.
- A positive and significant (p<.05) correlation was found between the clinical reasoning phenomenon related to the cardiology department and the problem-solving inventory scores.
- No significant correlation was found between the clinical reasoning case related to the cardiology department and the cardiology internship success score and overall success average (p>.05).

The high positive correlation between the scores obtained from the cases prepared by the researchers and used for clinical reasoning can be interpreted as the cases tending to measure the same behavior consistently. It was considered as an interesting situation that the cases were not related to the end-of-internship success scores and general success average of the department they were related to. Success would be expected to correlate with the level of clinical reasoning. It is generally accepted that grade point average is an indicator of academic ability, academic performance and academic success (Bean, 2005). The fact that the scores obtained from the cases used for clinical reasoning were not correlated with the post-practice achievement scores and GPA raised some questions. The training program may have insufficient content to provide clinical reasoning processes. There may be problems in the assessment and evaluation processes. When we saw that the end-of-internship success scores and the overall success grade were positively correlated with each other, it was thought that standardization was achieved in measurement and evaluation. According to these results, students perform clinical reasoning independently of the internship final grade and success grade. In other words, students focus on short-term goals, work towards passing the exam, and the fact-based clinical reasoning processes are not sufficiently developed. According to the view supported by Muller's report (1984) and Nuefeld (1989); In classical curricula, short-term goals such as passing exams are directed instead of deep understanding and learning. According to our findings, it was interpreted that the students were oriented towards short-term goals and therefore there was no correlation between success scores and clinical reasoning levels. On the other hand (Ajjawi & Higgs, 2008) they argued that clinical reasoning is not a skill that can be simply explained, understood and remembered because of its fast-growing, complex and often subconscious natural functioning, and that there are difficulties in reflecting it. In addition, as mentioned above, it can be said that in addition to the content of the program in the faculty where the students of the faculty whose clinical reasoning skills are questioned, educational activities are not used in terms of learning-teaching processes, or there are deficiencies in providing environments where they can reflect these skills. Ryan and Higgs (2008) also suggested that the development or teaching of clinical reasoning is related to the context of the learning environment and the nature of practice settings. For example, although learning-teaching processes have been developed to develop clinical reasoning and to solve cases and clinical problems in the relevant education program, the lack of adequate and appropriate application areas where these skills can be reflected, and the lack of sufficient number

and variety of patients starting from the preclinical period are also the reasons for these results in the Faculty where the study was conducted may be the cause of its occurrence. Some researchers claimed that the development of clinical reasoning skills of medical students depends on their success in basic science courses that mark the preclinical period (Coderre et al., 2009; Smith et al., 2009). Barrows and Feltovich (1987) warned that studies on clinical reasoning conducted with patient problem simulations with low validity in settings different from the clinical context cannot provide sufficient clues about clinical reasoning skills, and this can be counted as one of the limitations of this study.

The fact that the perception of problem solving was related to the level of clinical reasoning was interpreted as that the perception of problem solving could support clinical reasoning. Some other researchers have stated that clinical reasoning is a problem-solving process designed to adapt to the need to obtain more information to resolve an already initially uncertain diagnostic situation and to work towards a gradual increase in knowledge over time (Barrows & Feltovich, 1987). In addition, Elstein et al. (1978) stated that the differences among clinicians are more about understanding the problem and how they visualize the problem (representatively) than the clinical reasoning strategies. However, the lack of a relationship between the perception of problem solving and success was another striking finding. The lack of correlation between the perception of problem solving and success was interpreted as students tending towards short-term goals and working towards passing the exam.

The Effect of Problem-Solving Perception, Cardiology Achievement and GPA on Cardiology Case

The effects of Year 5 medical students' PSI scores, their post-cardiology internship achievements and general success averages, and the clinical reasoning case score related to the cardiology field were modeled with multiple regression. The results are presented in Table 2.

Table 2. The effect of problem-solving perception, cardiology achievement and GPA on cardiology case

Model	B	Std. Error	t	p	VIF	F	p	R^2
PSI	0.466	0.061	7.677	<0.0001	1.013			
Cardiology Achievement	0.120	0.188	0.636	0.526	1.057	21.177	<0.0001	0.370
GPA	0.516	0.326	1.582	0.117	1.051			

The established model is significant ($F=21.177$, $p<.05$). In this case, the interpretation of the model is appropriate. Variance Influence Factor (VIF) statistic is around "1". In this case, it was decided that there was no variance bloat and the estimations were examined. Problem-solving perception is a significant positive predictor ($p<.05$) of the clinical reasoning phenomenon asked about the cardiology field. However, cardiology internship success and overall academic average are not significant predictors for the case asked about cardiology field ($p>.05$). The overall explanatory rate of the model is 37% ($R^2=0.370$). In this case, it can be said that the predictor variables included in the model explain 37% of the variance in the clinical reasoning case related to the field of cardiology.

Problem solving perception can be interpreted as the positive predictor of the scores obtained from the Cardiology phenomenon used for clinical reasoning, as the problem solving perception supports the clinical reasoning processes. It was considered as an interesting situation that the cardiology internship success score and the overall success average were not positive predictors of the scores obtained from the Cardiology clinical reasoning case. The situation that the problem solving perception level is not the predictor of the students' final grade of internship and general success grade; It was interpreted that the students were working towards short-term goals, namely the exam, were not oriented towards deep learning, or that the processes for clinical reasoning and problem solving were insufficiently used while determining the final grade of internship and general success grade.

The Effect of Problem-Solving Perception, Internal Diseases Achievement and GPA on Internal Diseases Case

The effects of Year 5 medical students' PSI scores, their post-internship achievements in internal diseases and their general success averages, and the clinical reasoning case score related to the field of internal medicine were modeled with multiple regression. The results are presented in Table 3.

Table 3. The effect of problem-solving perception, internal diseases achievement and GPA on internal diseases case

Model	B	Std. Error	t	p	VIF	F	p	R^2
PSI	0.779	0.080	9.704	<0.0001	1.011			
Internal Diseases Achievement	0.331	0.201	1.645	0.103	1.082	31.947	<0.0001	0.470
GPA	0.050	0.438	0.114	0.910	1.079			

The established model is significant (F=31.947, p<.05). In this case, the interpretation of the model is appropriate. The VIF statistic is around "1". In this case, it was decided that there was no variance bloat and the estimations were examined. Problem-solving perception is a significant positive predictor (p<.05) of the clinical reasoning phenomenon asked about the field of internal medicine. However, internal diseases internship success and general academic average are not significant predictors for the case asked about internal diseases (p>.05). The overall explanatory rate of the model is 47% (R^2=0.470). In this case, it can be said that the predictor variables included in the model explain 47% of the variance in the clinical reasoning phenomenon related to the field of internal medicine.

The problem solving perception can be interpreted as being a positive predictor of the scores obtained from the internal medicine case used for clinical reasoning and that the problem solving perception supports the clinical reasoning processes. It was considered as an interesting situation that the internal diseases internship success score and the general success average were not positive predictors of the scores obtained from the Internal Diseases clinical reasoning phenomenon. The situation that the problem solving perception level is not the predictor of the students' final grade of internship and general success grade; It was interpreted that the students were working towards short-term goals, namely the exam, were not oriented towards deep learning, or that the processes for clinical reasoning and problem solving were insufficiently used while determining the final grade of internship and general success grade.

The Effect of Problem-Solving Perception, Emergency Achievement and GPA on Emergency Case

The effects of the PSI scores of the Year 5 medical students, their achievements at the end of their emergency medicine internship and general success averages, and the clinical reasoning case score related to the emergency medicine field were modeled with multiple regression. The results are presented in Table 4.

Table 4. The effect of problem-solving perception, emergency achievement and GPA on emergency case

Model	B	Std. Error	t	Sig.	VIF	F	p	R^2
PSI	0.331	0.039	8.411	<0.0001	1.021			
Emergency Achievement	0.127	0.109	1.164	0.247	1.093	24.274	<0.0001	0.403
GPA	0.144	0.214	0.676	0.500	1.081			

The established model is significant (F=24.274, p<.05). In this case, the interpretation of the model is appropriate. The VIF statistic is around "1". In this case, it was decided that there was no variance bloat and the estimations were examined. Problem-solving perception is a significant positive predictor of clinical reasoning asked about emergency medicine (p<.05). However, the success of the emergency medicine internship and the overall academic average are not significant predictors for the case asked about the field of emergency medicine (p>.05). The overall explanatory rate of the model is 40% (R^2=0.403). In this case, it can be said that the predictor variables included in the model explain 40% of the variance in clinical reasoning in the field of emergency medicine.

The problem solving perception being a positive predictor of the scores obtained from the Emergency Medicine case used for clinical reasoning can be interpreted as supporting the clinical reasoning processes of the problem solving perception. It was considered interesting that the Emergency Medicine final success score and the overall success average were not positive predictors of the scores obtained from the Emergency Medicine clinical reasoning case. The situation that the problem solving perception level is not the predictor of the students' final grade of internship and general success grade; It was interpreted that the students were working towards short-term goals, namely the exam, were not oriented towards deep learning, or that the processes for clinical reasoning and problem solving were insufficiently used while determining the final grade of internship and general success grade.

Conclusion

The total scores of Medical Faculty Year-5 students from clinical case evaluations of 3 different departments showed a positive correlation both with each other and with the scores they got from the problem-solving perception scale. That is, the case assessments were consistent. Consistency of problem solving perception and cases was an expected result in Medical Education. However, it was surprising that the students' final grades of internship and general success grades did not show a correlation with both clinical case assessments and problem solving perceptions. Since it is very important to develop clinical reasoning processes in Medical Education, it is necessary to review and develop clinical reasoning-based practices in the education process.

Recommendations

In Medical Education, it is necessary to give importance to clinical reasoning in the process of raising medical doctors (health professionals). Students are required to use clinical reasoning processes. It should be evaluated whether the clinical reasoning processes are used adequately, and the training program should be reviewed and adjusted when necessary. More work is needed to define what influences the development of clinical reasoning. Such research will provide a holistic approach to clinical reasoning, including the basic cognitive processes related to teaching and applying clinical problem solving skills, as well as communication skills that are thought to affect clinical reasoning, and basic social processes that potentially affect the doctor-patient relationship.

Scientific Ethics Declaration

The authors declare that the scientific ethical and legal responsibility of this article published in JESEH journal belongs to the authors.

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Appendix

Case 1
Part 1 (Duration: 10 minutes)

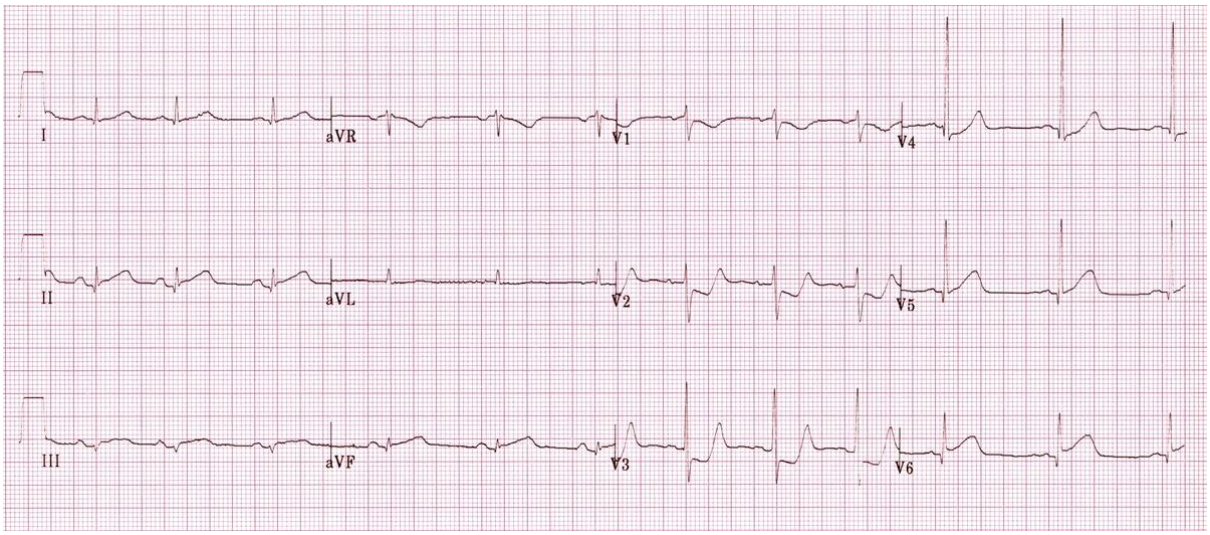
A 40-year-old female patient applied to the emergency department with the complaint of severe chest pain. Retrosternal, pressing, squeezing, burning pain radiated to both arms, forearms, shoulders, neck, jaw, and back. It was learned that the pain started with stomach pain and dyspnea after dinner and spread to the back. The pain did not go away with rest. It was learned from the patient's history that she had been treated for hypertension, did not smoke, did not enter menopause, did not use oral contraceptives, and did not have any other chronic disease. She said in your ongoing anamnesis that she did not have any allergies, she ate the same things with her husband at dinner, and she had not undergone any surgery.

Write down your possible pre-diagnosis for this patient, the reasons that led you to this pre-diagnosis, the anamnesis information that will confirm this pre-diagnosis and distinguish it from other diagnoses in the table below(In this section, 6 pre-diagnoses and reasons should be written, and the highest score that can be obtained is 50.)

Part 2 (Duration: 10 minutes)

Her general appearance is cold, pale, clammy skin, restlessness, irritability, and distress. The lips and nail beds were cyanotic in the patient with orthopnea. On auscultation, you hear rhythmic early beats in heart sounds, you hear S4 distinct heart sounds and wheezing in breathing sounds. T.A: 120/70 mmHg; heart rate: 90/min; Respiration Rate: 24/min; SPO2: 92%; Blood Sugar: 70 g/dl; Body Temperature: 36^{0}C

In the blood test you requested, the patient's white blood cell count is 16.3 mg/dl, hemoglobin 13 mg/dl, platelet count 481.000 ″u/L, Troponin I 0.658 ng/ml (N:0-0.2). The ECG of the patient is as shown in the figure.



In line with these new findings and information, have there been any changes in the preliminary diagnoses you thought for the patient? Which has become a priority? Why is that? Write what you think first in the table with justification (In this section, the conversion of a pre-diagnosis to the main diagnosis, its rationale and treatment recommendation should be presented, and the highest score that can be obtained is 50.).

Case 2
Part 1 (Duration: 10 minutes)

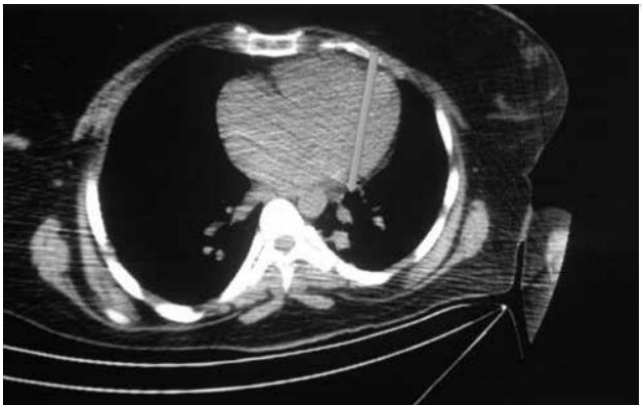
Thirty-year-old patient, who was operated for an ovarian cyst ten days ago, presents to the emergency room with the feeling of faintness and fainting. In the anamnesis, it is stated that she does not have any known ailments, except her body mass index is around 30. In the emergency department, she is conscious, cooperative, hypotensive, and tachycardic (TA: 80/40 mmHg, HR: 150/min). Cardiac and respiratory arrest, cardiopulmonary arrest (CPA) develops during the examination and blood collection procedures, and she is

immediately ortracheal intubated. The procedure could not be completed, as the patient, who responded to three minutes of resuscitation, underwent CPA 3 more times during the imaging procedures.

Write in the table below what your possible preliminary diagnoses are for this patient, the reasons leading you to this preliminary diagnosis, the anamnesis, physical examination and examination information that will confirm this preliminary diagnosis and distinguish it from other diagnoses. (In this section, 5 preliminary diagnoses and justifications should be written, and the highest score that can be obtained is 50.)

Part 2 (Duration: 10 minutes)

BP: 60/40 mmHg, HR: 160/minute, peripheral circulation was impaired and cyanotic. Meanwhile, the ABG values measured: pH: 6.87, pCO2: 61 mmHg, pO2: 28 mmHg, BE: -27.7 mmol/L, HCO3: 5.9 mmol/L, Lactate: 19 mmol/L, coagulation values: PT: 18.39 sec, PT%: 47, INR: 1.59, APTT: 114.4, D-Dimer: >100000. With the preliminary diagnosis of PE and acute renal failure (ARF), anticoagulant treatment enoxaparin (Clexane 0.6 mL twice a day and coraspin 300 mg) and fluid resuscitation were started. When hemodynamics did not improve, norepinephrine infusion was added. However, when metabolic acidosis did not improve, heparinized hemodiafiltration was applied, and sedation was started for brain protection. After hemodynamic stabilization, CT-pulmonary angiography was performed.



Based on the information given in the second part, write down what you think primarily, your diagnosis and your treatment with justification in the table (In this section, the conversion of a pre-diagnosis to the main diagnosis, its rationale and treatment recommendation should be presented, and the highest score that can be obtained is 50.)

Case 3

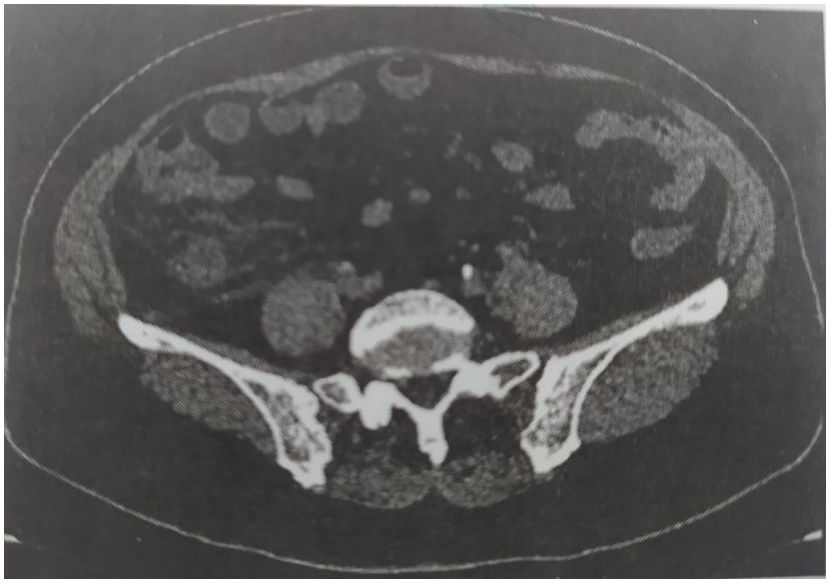
Part 1 (Duration: 10 minutes)

A 40-year-old male patient presented to the emergency department with complaints of loss of appetite and nausea. You detected widespread tenderness in the abdominal examination of the patient whose history was unremarkable. In the routine laboratory examinations of the patient, you saw that the AST, ALT, BUN and creatinine values were within normal limits. Hemogram was Hg: 12.8 mg/dl, plt: 200000 u/L, WBC: 11200 u/L. No pathological finding was found in the standing direct abdominal X-ray.

Write in the table below what your possible preliminary diagnoses are for this patient, the reasons leading you to this preliminary diagnosis, the anamnesis, physical examination and examination information that will confirm this preliminary diagnosis and distinguish it from other diagnoses. (In this section, 5 preliminary diagnoses and justifications should be written, and the highest score that can be obtained is 50.)

Part 2 (Duration: 10 minutes)

In the follow-up of the patient, pain and rebound positivity developed at the Mc Burny point in the right lower quadrant. Abdominal pain has shifted to the right lower quadrant, nausea-vomiting and loss of appetite continue. Abdominal CT without contrast is as follows.



In line with these new findings and information, have there been any changes in the preliminary diagnoses you thought for the patient? Which has become a priority? Why is that? Write what you think first in the table with justification (In this section, the conversion of a pre-diagnosis to the main diagnosis, its rationale and treatment recommendation should be presented, and the highest score that can be obtained is 50.).