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STATISTICAL ANALYSIS OF MEDICAL DATA AND PROCESSING IN MS EXCEL

Bahramov Rustam Rakhmatullaevich
Assistant teacher of Samarkand State Medical University
Mirzayev Makhammadi Jonuzokovich
Teacher of the academic lyceum of the Samarkand State Medical University
Abdig'aniyeva Sevich Nuriddin qizi
Mahmudov Qodirjon Nosir o'g'li
Abdurahmonova Sevinch Abdusalom qizi
Student of Samarkand State Medical University, faculty of Treatment
(Samarkand, Uzbekistan)

Abstract: The article covers the issues of mathematical analysis, the theory of sets, graphs, sequences and series, as well as the theory of probability and mathematical statistics in medicine. In medicine, medical data is statistically analyzed using mathematical statistics and probability theory.

Keywords: Mathematical statistics, randomization, placebo, medicine.

INTRODUCTION

In medicine, mathematics certainly helps in the analysis of medical data and finding solutions, with the help of mathematical methods, modern methods of diagnosis and treatment with high accuracy appear. In medicine, the concept of evidence-based medicine is currently actively developing. These clinical trials provide data on the safety and efficacy of data and suggest prioritization of treatments. Among these, clinical randomized placebo-controlled trials have the highest level of certainty. Randomization means the random selection and random allocation of patients to treatment groups in clinical trials conducted in order to reduce uncertainty, error and increase the reliability of the results; thus, randomized trials are studies in which patients are assigned to treatment groups based on randomization. A more precise definition of randomization is probability sampling or random sampling. For example, it is said that all outpatient medical records in a family clinic are selected randomly from them. We have already mentioned the concept of placebo above, a placebo is a drug that is similar in structure, smell and taste, but does not have the same effect as a special drug. This helps highlight the specific effect of the drug. Patients given placebo had postoperative pain in one third. When patients with high arterial blood pressure were injected with normal physiological fluid as a hypotonic drug, their AD actually decreased by several units. Researchers are more interested in determining specific efficacy than practitioners and accept placebo efficacy as the basis for measuring specific efficacy.

In addition to clinical research, methods of mathematical statistics are widely used in other types of medicine, because any research must be systematic and consist of experimental results. Otherwise, the data may be inaccurate. Tasks of mathematical statistics in planning research activities: ensuring the representativeness of the sample of the entire general population (in terms of structure and number); correct the data to eliminate and act on possible sources of systematic error; characteristics of the analyzed data and the choice of appropriate methods of information processing. Conducting any scientific research, including medical research, must begin with the identification of the main stages of work. This allows you to determine the required amount of work at each stage and establish the results, the receipt of which will allow you to move on to the next stage. Any medical and statistical research consists of the following stages.

1. Determining the goals and objectives of the study based on a working hypothesis or hypothesis, drawing up a plan and research program.
2. Organizing and conducting the collection of the necessary information, grouping the materials received.
3. Statistical data processing.
4. Analysis of the obtained results, conclusions.

The heart rate of 10 athletes who came to the therapy department was measured. 75,72,77,80,81,70,71,75,69,66 and heart rate changes after they did light exercise. We determine the change in athletes' pulses according to mathematical statistics.

Arithmetic mean index of variational series is determined by the following formula:

$$M = \sum_{i=1}^{n} v_i /N$$

Here v_i -are variants (each number is a variant), N-is the number of variants (observations).

M=(75+72+77+80+81+70+71+75+69+66)/10=73,6

The formula for determining the mean squared deviation is determined by the following formula.

$$G = \sqrt{\frac{\sum_{i=1}^{n} d_i^2}{n-1}}$$

$d_i = v_i - M$ The difference from the average arithmetic index of each option.

v	75	72	77	80	81	70	71	75	69	66
d	1,4	-1,6	3,4	6,4	7,4	-3,6	-2,6	1,4	-4,6	-7,6
d^2	1,96	2,56	11,56	40,96	54,76	12,96	6,76	1,96	21,16	57,76

$\sum d^2 = 212,4$ $G=\sqrt{212,4/9}=4,86$

$m = \frac{G}{\sqrt{n-1}}$ when n = less than 30

In our example, n = less than 30 So: $m = \frac{4,86}{\sqrt{9}} = \frac{4,86}{3} = 1,62$

Pulse at rest state	Pulse after physical exercises
75	87
72	86
77	85
80	91
81	93
70	79
71	82
75	84
69	77
66	76

Results:

Pulse at rest state	Pulse after physical exercises
M_1=73,6	M_2=84,0
G_1=4,86	G_2=5,64
m_1=1,62	m_2=1,8

We define reliability coefficient as follow:

$$t = \frac{|M_1 - M_2|}{\sqrt{m_1^2 + m_2^2}} = \frac{|73,6 - 84,0|}{\sqrt{1,62^2 + 1,88^2}} = \frac{10,4}{\sqrt{2,62 + 3,53}} = \frac{10,4}{\sqrt{6,16}} = \frac{10,4}{2,48} = 4,192$$

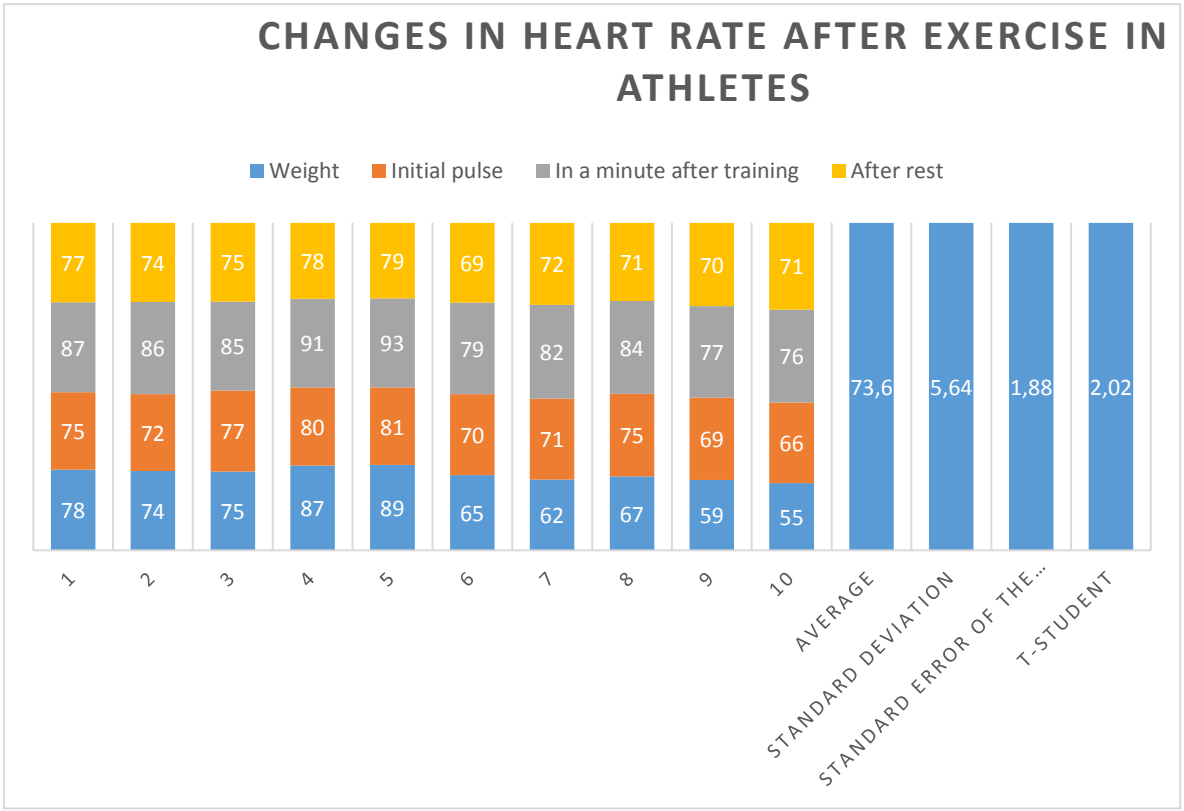
The goal of most medical research is to determine the impact of various controllable factors on human health. A controllable factor refers to various internal or external causes that affect the health of the population and are measured by research. Factors may include living conditions, diet, concentration of harmful substances, electromagnetic radiation, medicinal substances, etc.

CONCLUSION

So, in medicine, it consists of compiling mathematical statistics of medical data, analyzing and processing data, evaluating the reliability of data based on probability theory based on the results obtained, comparing and predicting modern methods of treatment.

K6

	A	B	C	D	E	F
1		Changes in heart rate after exercise in athletes				
2		№	Weight	Initial pulse	In a minute after training	After rest
3		1	78	75	87	77
4		2	74	72	86	74
5		3	75	77	85	75
6		4	87	80	91	78
7		5	89	81	93	79
8		6	65	70	79	69
9		7	62	71	82	72
10		8	67	75	84	71
11		9	59	69	77	70
12		10	55	66	76	71
13		Average	73,6			
14		standard deviation	5,64			
15		Standard error of the mean	1,88			
16		t-Student	2,02			



REFERENCES

1. Петров И. Б. Математическое моделирование в медицине и биологии на основе моделей механики сплошных сред. ТРУДЫ МФТИ. 2009;
2. Маматқулов Б. Жамоат саломатлиги ва соғлиқни сақлашни бошқариш. Дарслик. – Т.: Илм Зиё ,2014.
3. Маматқулов Б., Касимова Д.А. Менежмент назарияси ва амалиёти. Дарслик Т.: -. 2015 Ворис- нашриёти.
4. Маматқулов Б., Адилова З., Мирзабаева С. Илмий текшириш ишларини амалиётда қўллаш (Далилларга асосланган тиббиѐт). Дарслик.- Т.: Ворис нашриёти, 2015 й.
5. Болаларда паразитларни аниқлашда функционал дифференциал тенгламадан фойдаланиш усули. Бахрамов Р.Р., Маликов М.Р. ACADEMIC RESEARCH IN EDUCATIONAL SCIENCES,2021.
6. THE METHOD OF USING THE FUNCTIONAL-DIFFERENTIAL EQUATION IN DETECTING PARASITES IN CHILDREN. R. Bakhramov, M. Malikov, A. Kubaev - Turkish Journal of Physiotherapy and Rehabilitation;32(3) 2021. P 136-140
7. Кубаев А.Э., Бахрамов Р.Р., Абдуллаева С.Б. “Тиббий тасвирларни тиббиётдаги аҳамияти” ACADEMIC RESEARCH IN EDUCATIONAL SCIENCES, 2022й. Стр. 872-877
8. Рустам Рахматуллаевич Бахрамов, Мурод Расулович Маликов БОЛАЛАРДА ПАРАЗИТЛАРНИ АНИҚЛАШДА ФУНКЦИОНАЛ ДИФФЕРЕНЦИАЛ ТЕНГЛАМАДАН ФОЙДАЛАНИШ УСУЛИ // Academic research in educational sciences. 2021. №3.
9. Бахрамов , Р. Р., Маликов , М. Р., & Абдурахмонов , Р. П. (2022). ЗАБОЛЕВАНИЯ ВЫЗВАННЫЕ ГЕЛЬМИНТАМИ У ДЕТЕЙ И ПРОГНОЗ РАЗВИТИЯ ЭТИХ ЗАБОЛЕВАНИЙ . *Eurasian Journal of Medical and Natural Sciences*, *2*(5), 58–62.
10. Рустам Рахматуллаевич Бахрамов, Рустам Паттаҳович Абдурахмонов, Мурод Расулович Маликов ДУНЁ МАМЛАКАТЛАРИ БОЛАЛАРИДА УЧРАЙДИГАН ГИЖЖАЛАР (ГИЛЬМЕНТ) КЕЛТИРИБ ЧИҚАРАДИГАН КАСАЛЛИКЛАР ВА УШБУ КАСАЛЛИКЛАР ПРОГНОЗИ // Academic research in educational sciences. 2022. №2.