SMOKING IS HARMFUL FOR THE HUMAN BODY UNDER THE ANALYSIS IN MATHEMATICAL STATISTICS

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ANNOTATION
This article is illustrated that smoking is harmful for human organism. However, smoking is determined after COVID – 19, mainly its occurring problems by circumstances and preventing. We evaluate using mathematical statistics formulas to analyze smoking is harmful for human health.

Keywords: Nicotine, lung cancer, heart attack, mathematical statistics, MS Excel program.

INTRODUCTION
Nowadays, smoking kills more than 8 million people every year. By contrast non-smokers than smokers have a more severe case of COVID-19 after evidence emerged that the risk of quitting was high, millions of people decided to quit smoking. 20 minutes after stopping smoking, the frequency of heart contractions decreases, within 12 hours, the level of carbon monoxide in the blood decreases to normal. Within 2-12 weeks, blood circulation will improve and lung function will normalize - it is stated on the website of the World Health Organization. "Coughing and shortness of breath will decrease within 1-9 months. Within 5-15 years, the risk of stroke will decrease to the level of a non-smoker. In 10 years, people dying from lung cancer is reduced by two fold compared to high-risk smokers. Within 15 years, the risk of cardiovascular disease is reduced to the level of a non-smoker. According to The World Health Organization there some reasons.

LITERATURE ANALYSIS AND METHODOLOGY
There are thousands of chemicals component in the tobacco "mixture"! More than a hundred of them are very toxic for the human body, at least 70 of them belong to the category of carcinogens. Tobacco products are separated into three substances:

Nicotine affects the brain within seconds, raising blood pressure and heart rate. It is nicotine that is "guilty" of strong addiction to tobacco!

Carbon monoxide replaces oxygen when carried through the bloodstream, thereby reducing the amount of oxygen needed by tissues and organs to function properly.

Blackberry narrows the small airways in the lungs and prevents oxygen supply. In addition, it accumulates in the bronchioles and over time causes "smoker's cough" and contributes to the development of many lung infections. Considering all of the above, it is not surprising that smoking is the main cause of the following diseases:

- lung cancer;
- ischemic heart disease;
- chronic obstructive pulmonary disease.

In addition, smoking significantly contributes to:

- atherosclerosis;
- cerebrovascular diseases, including stroke;
- more than 20 types of diseases of malignancy tumors (in the oral cavity, larynx, esophagus, stomach, bladder, cervix);
- acute respiratory diseases;
- asthma / whooping cough (as well as its exacerbation!);

23% of all men and 1% of women in Uzbekistan are smokers, every year about 30,000 people die from smoking-related diseases in the country.

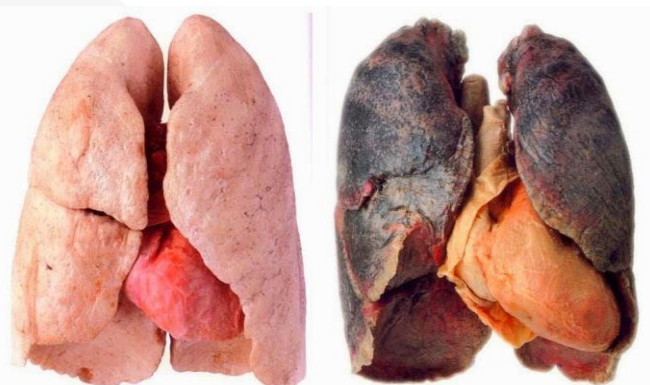
Figure 1. Electronic sigaret lungs

Figure 2. Before and after healthy

We also make a statistical assessment of smokers from these data in the MS Excel program. For information, respiratory status in 1 minute in 10 smokers, 20,22,19,22,20,24,21,19,23,21

RESULTS:

Arithmetic average indicator M of this variation series is determined by the following formula.

$$M = \frac{\sum_{i=1}^{N} v_i}{N} \qquad (1)$$

In this v_i – variants (each number is a variant), N-number of variants (observations).

The arithmetic mean is found as follows:

M = (20+22+19+22+20+24+21+19+23+21)/10 = 211/10 = 21,1

The formula for determining the mean square G deviation is expressed as follows.

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

Here is $d = v_i - M$ the difference of each option from the arithmetic average. **n** is the number of observations (options).

Average value of the arithmetic index: **21,1**

v	20	22	19	22	20	24	21	19	23	21
d	-1,1	0,9	-2,1	0,9	-1,1	2,9	-0,1	-2,3	1,9	-0,1
d²	1,21	0,81	4,41	0,81	1,21	8,41	0,01	4,41	3,61	0,01

$\sum d^2 = 24{,}9$

$G = \sqrt{24{,}9/9} = 1{,}66$

So, the relative amount of the measured object can vary between $21{,}1 \pm 1{,}66$

Now, using G, we have the opportunity to accurately express the average arithmetic index. For this, the average error of the average arithmetic indicator is determined using the following formula:

$$m = \frac{G}{\sqrt{n}}, \text{ When } \mathbf{n} \text{ is more than 30} \qquad (3)$$

$$m = \frac{G}{\sqrt{n-1}}, \text{ when } \mathbf{n} \text{ is less than 30} \qquad (4)$$

In our example, n is less than 30

So: $m = \frac{1{,}66}{\sqrt{9}} = \frac{1{,}66}{3} = 0{,}55$

So: $M \pm m = 21{,}1 \pm 0{,}55$

It is known that in medical and biological research, this accuracy is considered sufficient if the error is no more than 5% of the average arithmetic index.

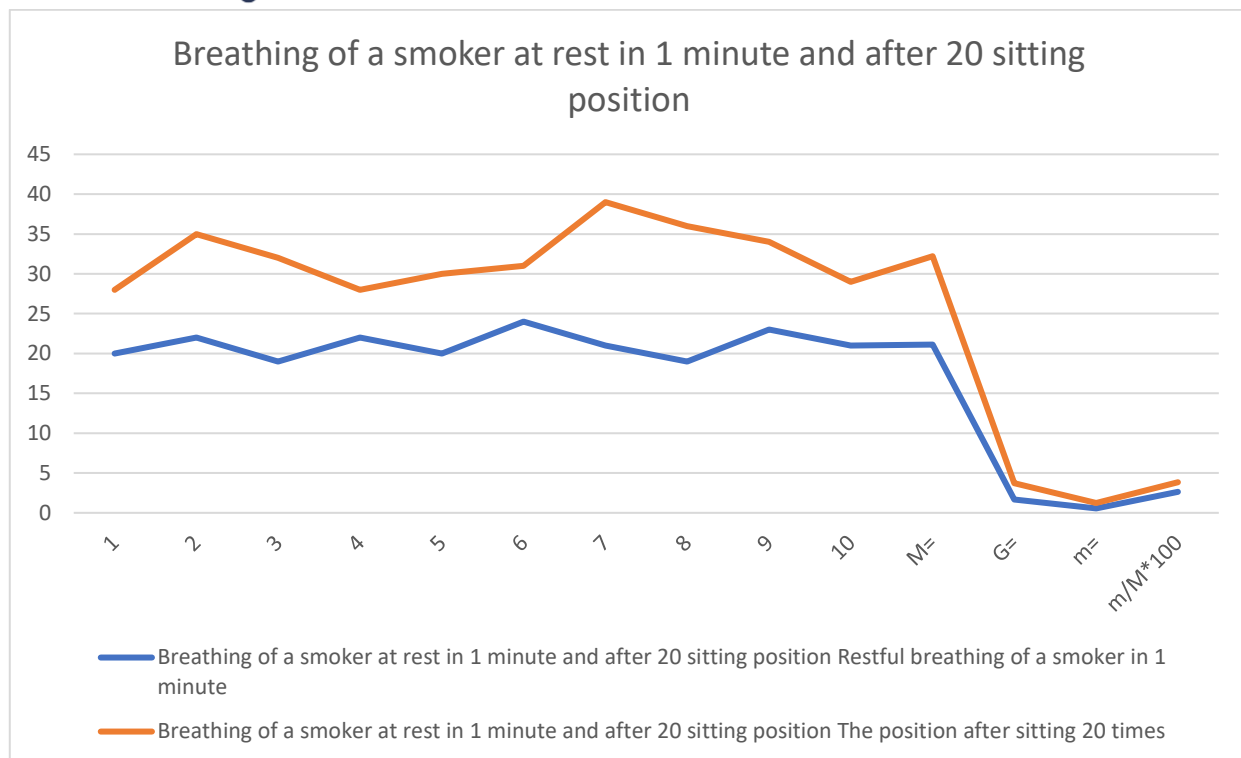$$\frac{m}{M} \cdot 100 \leq 5\% \qquad (5)$$

For example: $\frac{0{,}55}{21{,}1} \cdot 100 = \frac{55}{21{,}1} = 2{,}6\%.$

In this case, the amount of comparison of the object is calculated with sufficient accuracy, since the error is much less than 5%.

Using the above, we use MS Excel to calculate the reliability of the data.

RESULT:

C32		f_x	=СРЗНАЧ(C22:C31)

	A	B	C	D	E
19					
20			Breathing of a smoker at rest in 1 minute and after 20 sitting position		
21		№	Restful breathing of a smoker in 1 minute	The position after sitting 20 times	
22		1	20	28	
23		2	22	35	
24		3	19	32	
25		4	22	28	
26		5	20	30	
27		6	24	31	
28		7	21	39	
29		8	19	36	
30		9	23	34	
31		10	21	29	
32		M=	21,1	32,2	
33		G=	1,66	3,71	
34		m=	0,55	1,24	
35		m/M*100	2,6	3,8	
36					

Breathing of a smoker at rest in 1 minute and after 20 sitting position

Conclusion:

It has been several years since measles has become such an integral part of everyday life that despite the fight against it under the leadership of the World Health Organization and many other international organizations, it is not possible to completely eliminate this disease. Despite the fact that it has already been proven that it is extremely dangerous for human health, the evil that humanity still cannot give up is smoking, in other words, smoking. We also considered in our article that smoking is harmful to the human body and proved it using mathematical statistics formulas. We want everyone to take care of their health.

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