

Galaxy Publication

How Irrational Beliefs Shape Risk Perception in Medical and Psychological-Pedagogical Students

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ABSTRACT

One's attitude towards risk is the most important measure of their ability to regulate their environment. This requires awareness of threats and decisions about proper or inappropriate responses in dangerous situations. However, numerous factors affect people's attitudes towards danger. The impact of irrational beliefs on the types of attitudes towards hazards among students with a medical and psychological-pedagogical profile was examined in this study. Participants included 438 future medical students and educational psychologists (121 men and 317 women) from three Russian higher education institutions, between the ages of 17 to 40 years (average age: 19.5 \pm 2.8 years). The author's questionnaires were used to determine sensitivity to the dangers and people's preferred responses in dangerous situations, as well as a list of Beck and Freeman's illogical views. Using the angular transformation of Fisher and the correlation coefficient of Pearson dichotomous, the criteria of ϕ^* was used to perform mathematical processing. As a result, several relationships between illogical beliefs and the different types of students' attitudes toward threats were discovered, whether positive or negative. For example, obsessivecompulsive beliefs in men and avoidant beliefs in women determine the exaggeration of threats, whereas antisocial, passive-aggressive, and histrionic beliefs in men and women, determine the disregard for dangers, respectively. These findings can be applied to medical and psychological pedagogy student instruction, as well as the activities of the university psychological services activities that try to rectify students' insufficient attitudes towards risks.

Keywords: Attitude to dangers, Type of attitude to dangers, Sensitivity to threats, Ways to respond in situations of danger, Irrational beliefs, Students

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Introduction

At first, the odds of survival are roughly equal for all living things, including humans. Both a drop and an increase in one direction are possible for these adjustments. They rely on accidents, living things' behavior, and both internal and exterior causes. A person can lead a happy, long life if they behave sensibly and have favorable internal and external circumstances [1]. Health, psychological, and social issues are more likely to arise if these factors are unfavorable. Every living thing faces risks throughout its life, and how it handles these risks will determine how long it lives [2, 3]. The concept of "danger" is difficult to describe because it is heavily influenced by the subject's perception of risk and his prior experience [4]. For instance, the water in a river or the sea won't be particularly dangerous for someone who can swim, but it will be the most terrifying for someone who can't. As a result, danger is typically defined broadly as something that can injure or damage a living (or, in certain situations, inanimate) entity. A threat is defined as a risk with a specific probability of occurrence. A risk is an individual's estimation of the likelihood of a positive or negative result in the course of events or activities. Research in security psychology and risk psychology focuses on these three components: dangers, decision-making, and reactions to hazards and risks [5]. People start treating the same things differently, recognizing or not recognizing them as threats, which dictates the kind of response they have because the perception of hazards is highly subjective and dependent on numerous aspects.

The most essential markers of people's attitudes towards risk are their sensitivity to threats and their choice of responses to them, which are established based on the individual's personal experience, notions about danger and safety, and psychological features.

"Cognitive, affective, and behavioral reactions to repulsive stimuli that indicate threat" [6] are known as threat sensitivity. The foundation of threat sensitivity is vigilance, which is defined as "... the state of readiness to detect and respond to certain specified small changes occurring at random intervals in the external environment" [7].

The capacity of an individual to sustain his attention on a particular type of stimulus for an extended duration is a sign of vigilance [8, 9]. Threat sensitivity is a crucial component of sentinel behavior, or protective behavior [10]. "Fight, Flight, Freezing" is a unique physiological system that is at the core of an individual's decision-making over how to react to dangerous situations [11]. The behavioral activation system (BAS) and the behavioral inhibition system (BIS) are two brain systems whose processes of operation were defined by Gray [12], who is credited with their discovery. This finding allowed for the explanation of human behavior in perilous circumstances. It has been demonstrated that both animal and human behavior have many similarities in basic reactions to risk [13]. Specifically, Mobbs *et al.* [14] have discovered five survival techniques that animals and humans employed to defend themselves against both novel and recurrent dangers: 1) Predicting; 2) Concentrating on the threat; 3) Ignoring or relying on threat assessment; 4) Monitoring stimuli, assessing the threat, and looking for protection; and 5) The actual defensive response, such as flight or resistance.

The issue of how to respond appropriately to hazards becomes a major concern when examining people's attitudes toward them. Depending on the circumstances, this response is carried out utilizing socially constructed techniques for dealing with threats and dangers. In addition to a proper response, a person may overstate the importance of threats while underestimating them. As a result, while "flight" is one of the fundamental reactions to dangers [15], it may be an appropriate response in some situations and a blatant exaggeration of the danger in others (there is no threat, but you must flee anyhow); in the third, when a flight is substituted with a fight, for instance, with a superior foe, there is an overestimation of their strengths and capabilities and danger is ignored (recklessness).

Eight categories of people's attitudes towards hazards can be identified by combining their sensitivity to threats and their response choices in dangerous situations: inadequately sensitive, inadequately sensitive, anxiously sensitive, anxiously with reduced sensitivity, ignoring sensitivity, ignoring with reduced sensitivity, and indefinitely reduced sensitivity [16]. It should be acknowledged that an adequate sensitive type is ideal. This includes those who can recognize threats early and react appropriately, employing socially constructed behavioral patterns in risky situations.

According to studies, people's sensitivity to threats and choice of how to respond to dangerous situations is heavily influenced by their gender and age, as well as many personal factors such as the need for danger and safety, motivation for success and avoiding failure, proclivity to take risks, level of anxiety, general and social intelligence, etc. [17]. This research has led to the belief that some underlying factors can alter people's attitudes towards dangers. The so-called illogical beliefs are among these determinants.

The framework of rational emotional-behavioral and cognitive psychotherapy was used to introduce and thoroughly examine the idea of "irrational beliefs" or "irrational attitudes" [18, 19]. A person with rational beliefs is adaptable, reasonable, and does not make terrible decisions: "I did not pass the exam, it is unpleasant, of course, but okay, there is an opportunity to correct the situation - to retake the exam." illogical convictions, nevertheless, severe, disastrous, and nonsensical: "I failed the test, I will be kicked out of the university, and this is a catastrophe." The majority of researchers hold the view that illogical beliefs cause many pathological illnesses, maladaptive behaviors, and harmful emotions. However, it has also been demonstrated that irrational beliefs are linked to proper psychological functioning and desire for action, in addition to a variety of human dysfunctions [20].

Modern science is actively researching irrational ideas in a variety of fields, including psychology and medicine [21], education [22], sports [23], and more. There is only evidence linking irrational attitudes and anxiety, which

frequently results in the urge to exaggerate threats, to the impact of irrational beliefs on people's attitudes towards dangers [24]. Much less research has been done on the impact of selecting appropriate reaction strategies or minimizing danger, which has prompted the idea to plan and carry out a unique investigation. The selection of students who will become doctors and students who will become professionals in the fields of psychology and education as study subjects depends on how important it is for these professions to have a suitable attitude towards risks.

There can be unintended and even detrimental repercussions when a doctor or psychologist exaggerates the threat or, more specifically, ignores it. In that scenario, the issue of determining the elements that contribute to the development of a certain attitude towards risks—a unique position that irrational beliefs may occupy—becomes particularly pertinent.

The study's goal was to determine how students who would eventually become doctors and educational psychologists' attitudes toward risks were impacted by illogical beliefs.

The hypothesis was that irrational beliefs can influence the sort of attitude toward danger. Specifically, the beliefs of the avoidant, dependent, and histrionic types should cause them to exaggerate the risks, while the beliefs of the passive-aggressive and antisocial types should cause them to minimize or dismiss the risks.

Materials and Methods

The study used a complex of theoretical (analysis, comparison, generalization) and empirical (special questionnaires) methods: the author's questionnaire of sensitivity to threats, the author's questionnaire for identifying ways of responding to situations of danger, and a list of irrational beliefs by Beck and Freeman.

The threat sensitivity questionnaire [25] consists of 12 question tasks simulating real typical situations. Each task of the questionnaire includes the wording of a statement and four options for an answer. The scores received for all questions are summed up. As a result, we get the final score, which characterizes the level of a person's sensitivity to dangers. A scale for translating "raw" points into wall points has been developed.

The questionnaire on identifying ways of responding to hazardous situations [26] consists of 17 question statements simulating human behavior in real standard situations that can pose a threat. For each question, 4 variants of answers are offered. They correspond to 4 types of personality behavior: adequate, exaggerating the danger, ignoring them, and indefinite. For each type of response, a total score is found, after that the "raw" scores, as in the previous case, are converted to wall scores.

By using two questionnaires, we obtain information on four parameters, assessed on a ten-point scale: sensitivity to threats, adequate response, alarming response (exaggeration of dangers), and ignorant response (underestimation of dangers). Points from 7 to 10 were taken for a relatively high level of the trait's severity, and the rest - for a relatively low level of trait severity. As a result, 8 types of students' attitudes to dangers were identified: adequate-sensitive and with reduced sensitivity, anxious-sensitive and with reduced sensitivity, ignoring-sensitive and with reduced sensitivity, indefinite-sensitive and with reduced sensitivity.

List of Irrational Beliefs by Beck and Freeman [27]. The list includes 126 beliefs, summarized in nine groups. There are 14 judgments in each group: 1) Avoidant personality disorder, 2) Addictive disorder, 3) Passive-aggressive disorder, 4) Obsessive-compulsive disorder, 5) Antisocial disorder, 6) Narcissistic disorder, 7) Histrionic disorder, 8) Schizoid disorder, and 9) Paranoid disorder. In the general list presented to students, the name of the groups of judgments was omitted, only the group number was present. Students were asked to read the list carefully, and then select from these 126 beliefs only those that most characterize their personality. It was recommended to choose from 3 to 5 judgments. If the test person believed that none of the judgments suited him, he did not choose at all.

In total, 438 students (121 men and 317 women) of future physicians and educational psychologists from three higher educational institutions in Russia: Ivanovo State Medical Academy (Ivanovo, Russia), Moscow Humanitarian University (Moscow, Russia), and Cherepovets State University (Cherepovets, Vologda Region, Russia) between the ages of 17 and 40 years (mean age 19.5 ± 2.8 years) have taken part in the research. The sample was formed in random order. The gender disparity is caused by the fact that in Russia the professions of a doctor, a teacher, and or a psychologist are mainly female professions. Irrational beliefs among 319 people (89 men and 230 women) of this number were studied.

The processing of the results was carried out using the methods of mathematical statistics, the ϕ * criterion was used - Fisher's angular transformation, as well as correlation analysis using ϕ - Pearson's dichotomous correlation coefficient.

Results and Discussion

Now let's address the analysis of the study's primary findings. First and foremost, let us categorize the test population based on two parameters: types of attitudes toward danger and types of irrational beliefs. **Table 1** shows the distribution of pupils by kind of attitude towards dangers, accounting for gender.

№	Types of attitudes towards dangers	Students in general		Men		Women		Statistical significance of the differenc (φ criterion* – Fischer angular	
		n	%	n	%	n	%	transformation)	
1	Adequate sensitive	126	28.77	34	28.10	92	29.02	$\phi^* = 0.19$, Negligible	
2	Adequate with reduced sensitivity	64	14.61	21	17.36	43	13.57	$\varphi^* = 0.99$, Negligible	
3	Anxious sensitive	39	8.90	6	4.96	33	10.41	$\varphi^* = 1.93, P \le 0.05$	
4	Anxious with reduced sensitivity	51	11.64	2	1.65	49	15.46	$\phi^* = 5.12, P \le 0.001$	
5	Ignoring sensitive	13	2.97	7	5.79	6	1.89	$\varphi^* = 1.96, P \le 0.05$	
6	Ignoring with reduced sensitivity	47	10.73	19	15.70	28	8.83	$\phi^* = 1.99, P \le 0.05$	
7	Vague sensitive	33	7.53	13	10.74	20	6.31	$\phi^* = 1.49$, Negligible	
8	Uncertain with reduced sensitivity	65	14.85	19	15.7	46	14.51	$\varphi^* = 0.33$, Negligible	
	Total	438	100	121	100	317	100		

The difference between males (28.10%) and women (29.02%) was not statistically significant ($\varphi * = 0.19$ minimal), as **Table 1** shows that 28.77% of students (126 individuals) adhere to a sufficient sensitive kind of attitude to dangers, which corresponds to the ideal type. This group comprises individuals who can recognize and promptly identify warning signs of danger and appropriately respond to them by adhering to established standards and regulations. The percentage of individuals with reduced sensitivity and adequate type was 14.61% (64 participants), which was roughly equal for males (17.36%) and women (13.57%). This group of students comprises those who are not particularly sensitive to danger, but who are capable of responding appropriately when it begins.

A rather tiny portion of the population—8.90%, or 39 people—had an apprehensive sensitive attitude towards dangers, which comprised those who were sensitive to threats and inflated the significance of danger. Men accounted for only 4.96%, while women accounted for 10.41% ($\varphi * = 1.93$, P < 0.05). The differences are statistically significant. The examination of the anxious type with lesser sensitivity yields approximately the same results.

This group, which exaggerated the value by 11.64% (51 persons), was composed of students who were not sensitive to threats but were likely to react emotionally to them if the likelihood of their happening increased. It was only 1.65% for men and 15.46% for women ($\phi * = 5.12$, P < 0.001). The differences are statistically significant.

The ignoring sensitive kind represented a modest percentage of the population - 2.97% (13 people). Additionally, it was 5.79% for men and 1.89% for women ($\varphi * = 1.96$, P < 0.05). The differences are statistically significant. Note that this type is more common in adolescents than in students, when a person acknowledges a warning sign as harmful but chooses to ignore it, showing courage and satiating a need for self-affirmation. The analysis of the ignoring type with lower sensitivity, which already amounted to 10.73% (47 people), presents a slightly different picture. It is made up of pupils who disregard risks for a variety of reasons and are insensitive to hazards. As anticipated, it was higher among men (15.70%) than among women (8.83%) ($\varphi * = 1.99$, P < 0.05). The differences are statistically significant. Finally, the two groups were 7.53 % (33 persons) and 14.85 % (65 persons), respectively, which were classified as endlessly sensitive and indefinite with reduced sensitivity.

Additionally, men were slightly more likely than women to be of the undetermined sensitive type (10.74%), although the differences were not statistically significant ($\varphi * = 1.49$, insignificant). Men and women are roughly equally represented in the indeterminate type with low sensitivity (15.70% and 15.51%, respectively). The existence of undefined forms of danger response can be explained in two ways. First of all, this encompasses those

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who have not yet evolved a unique response to threats. Second, there are others who, in contrast, respond to risk in different ways based on their circumstances, their background, and their unique personality. This has allowed the study to identify a wide range of student perceptions of risks. The majority of students respond adequately to hazards, although some inflate their importance while others underestimate it. It was discovered that women are more inclined than males to exaggerate the threats, while men tend to dismiss them, which completely supports the facts available in psychology [16].

Similarly, let us analyze the representation of the types of irrational beliefs among students. The results are shown in **Table 2**.

		Table 2. Types of in Students in general			Men		omen	Statistical significance of the	
N⁰		n	%	n	%	n	%	difference (φ Criterion* – Fischer angular transformation)	
1	Avoidant beliefs	64	20.06	19	21.35	45	19.57	$\varphi^* = 0.36$, Negligible	
2	Dependent type beliefs	75	23.51	20	22.47	55	23.91	$\phi^* = 0.27$, Negligible	
3	Passive-aggressive beliefs	118	36.99	33	37.08	85	36.96	$\phi^* = 0.02$, Negligible	
4	Obsessive-compulsive (obsessive) beliefs	172	53.92	41	46.07	131	56.96	$\phi^* = 1.74, p \le 0.05$	
5	Anti-social beliefs	58	18.18	16	17.98	42	18.26	$\phi^* = 0.06$, Negligible	
6	Narcissistic beliefs	33	10.34	7	7.87	26	11.30	$\phi^* = 0.93$, Negligible	
7	Histrionic (demonstrative) beliefs	92	28.84	21	23.6	71	30.87	$\phi^* = 1.31$, Negligible	
8	Schizoid-type beliefs	111	34.80	37	41.57	74	32.17	$\varphi^* = 1.56$, Negligible	
9	Paranoid-type beliefs	41	12.85	13	14.61	28	12.17	$\phi^* = 0.56$, Negligible	

Table 2	Types of	irrational	heliefs	among	students*
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* Note: The sum of the percentages is not 100%, since the same subject may have different irrational beliefs.

All 9 categories of irrational beliefs among students were identified by the study. Obsessive-compulsive (obsessive-compulsive) beliefs are the most prevalent. They were discovered in 172 individuals (53.92%) of the total. This type was 56.96% in the female sample and 46.07% in the male sample; the numbers are statistically significant ($\varphi * = 1.74$, P < 0.05). According to convictions, the following types are held: dependent type: 23.51% (75 persons), avoidant type: 20.06% (64 persons), schizoid type: 34.80% (111 persons), histrionic (demonstrative) type: 28.84% (92 persons), passive-aggressive type: 36.99% (118 persons), and antisocial type: 18.18% (58 persons). Beliefs of the paranoid type (12.85%; 41 participants) and the narcissistic type (10.34 percent; 33 persons) occupy the final two positions in terms of representation in the sample. No statistically significant differences between men and women were seen outside of the obsessive-compulsive form of persuasion. Now let's address the study's primary goal, which was to determine the correlation between the different kinds of illogical beliefs and the attitudes that students have towards risks. Let's use "1" for each of the danger-related attitude categories and "0" for the others for the sake of this discussion. Similarly, "1" represents each kind of illogical belief, whereas "0" represents the others. Consequently, all of the data collected for the study is transformed into a dichotomous scale, allowing for the use of φ , or Pearson's dichotomous correlation coefficient, to do a correlation analysis.

The correlation study is conducted independently for the male and female samples of people since some disparities in opinions regarding the risks faced by men and women were demonstrated. 319 students—89 men and 230 women—participated in the study. The findings are displayed in **Figures 1 and 2**.



Figure 1. The interrelation of irrational beliefs and types of attitudes towards hazards in a male sample of persons (n = 89) *



Figure 2. The relationship of irrational beliefs and types of attitudes towards hazards in the female sample of persons (n = 230) *

*Note: Categorisation of attitude types regarding hazards: Ad-nS stands for adequate with reduced sensitivity; Ad-S stands for adequate sensitivity; Dis-S: sensitive to anxiety Unc-S is for undefined sensitive; Unc-S for undefined with reduced sensitivity; Ig-S for ignoring sensitive; and Dis-S for anxious with decreased sensitivity.

Types of illogical beliefs and their classification: I: Avoidant type beliefs; II: Dependent type beliefs; III: Passiveaggressive type beliefs; IV: Obsessive-compulsive type beliefs; V: Antisocial type beliefs; VI: Narcissistic type beliefs; VII: Histrionic type beliefs; VIII: Schizoid type beliefs; and IX: Paranoid type beliefs. A positive relationship; a negative one.

Types of attitudes towards hazards and types of illogical beliefs were shown to have both common and dissimilar links between men and women, as shown in **Figures 1 and 2**. Although the investigation did not provide extremely high correlation coefficients overall, it did uncover a large number of statistical correlations that were significant at the 5% level. This suggests that the more strongly this or that person holds this or that irrational idea, the more likely it is that he or she will adopt a particular attitude towards risk when faced with a threat.

In men, the beliefs of the passive-aggressive ($\varphi = -0.19$, P ≤ 0.05) and histrionic ($\varphi = -0.22$, P ≤ 0.05) types are adversely correlated with an adequate sensitive type attitude towards hazards (Ad-S). This suggests that male pupils who exhibit flamboyant behavior and strong passive-aggressive attitudes will be more likely to react to danger in any way other than a sufficiently sensitive way. The female sample presents a distinct image. Obsessive-compulsive beliefs and a sufficiently sensitive kind of attitude toward hazards were shown to be positively

correlated ($\varphi = 0.14$, P ≤ 0.05) and negatively correlated with avoidant beliefs ($\varphi = -0.15$, P ≤ 0.05). Therefore, if female students are held to high-performance standards and are not simultaneously prone to avoidance strategies, they will be sensitive to threats and react appropriately to them. An adequate attitude to hazards (Ad-nS) with a reduced sensitivity type was positively correlated with schizoid-type beliefs in both men and women (men - $\varphi = 0.24$, P ≤ 0.05 ; women - $\varphi = 0.13$, P < 0.05). Attitudes like "I need order, systems, and rules to do the job properly" and "I have to rely on myself to make sure everything is done" are characteristics of schizoid-type representatives. It is therefore not unexpected that they exhibit poor sensitivity to hazards, yet they respond largely appropriately when they are recognized.

Men with an anxiously sensitive attitude towards hazards (Dis-S) have a positive correlation with obsessivecompulsive attitudes ($\phi = 0.26$, P ≤ 0.05) and a negative correlation with schizoid attitudes ($\phi = -0.21$, P ≤ 0.05). Therefore, if obsessive-compulsive disorder in women dictates a suitable reaction, then in men, when combined with a lack of schizoid-type attitudes, it results in a desire to exaggerate the risks.

Antisocial type views are inversely correlated with both anxious sensitivity and anxiousness with reduced sensitivity (Dis-nS) in the female population ($\phi = -0.13$, P ≤ 0.05 and $\phi = -0.16$, P ≤ 0.05). Additionally, the less sensitive anxious type has a negative correlation with histrionic type beliefs and a positive correlation with avoidant type beliefs ($\phi = 0.25$, P < 0.05). As a result, female students who tend to stay out of trouble, don't break social norms and standards, and don't act out will overstate their significance when they are in danger.

The issue of students neglecting risks received special focus in the study. The findings demonstrated that in the male sample, beliefs of the antisocial type are directly correlated with the attitude to danger (Ig-nS) that ignores reduced sensitivity ($\varphi = 0.20$, P ≤ 0.05). In particular, the attitude is significant: "If I want something, I must do everything to get it," which results in the desire to ignore the dangers. Disregard for risk in the female sample is caused by passive-aggressive beliefs ($\varphi = 0.15$, P ≤ 0.05) and histrionic-type beliefs ($\varphi = 0.16$, P ≤ 0.05), such as "I am an interesting, attractive person" ($\varphi = -0.13$, P ≤ 0.05), as well as a desire to demonstrate their independence. In men, the indefinite type with decreased sensitivity was negatively correlated with antisocial beliefs ($\varphi = -0.21$, P ≤ 0.05) and positively correlated with dependent type beliefs ($\varphi = 0.19$, P ≤ 0.05), while the indeterminate sensitive and indeterminate with reduced sensitivity types (Unc-S and Unc-nS) among women did not show statistically significant associations with irrational beliefs. This enables us to conclude that young children prefer to focus on important individuals who they instinctively believe to be their defenders when determining whether a situation is dangerous or safe.

In contemporary science, there is a lot of discussion about the issue of how irrational ideas affect how people behave and exhibit their traits. The association between illogical beliefs and depressed states [28, 29], irrational beliefs and unpleasant emotions [30], and irrational beliefs and perfectionism has been established in the classic writings of the pioneers of these fields [31]. A subsequent study has demonstrated how illogical beliefs impact the development of communication style and the incidence of painful moods [32], rage, and a propensity for coercion and aggression [33, 34].

Exaggeration or minimization of threats is the first of numerous intriguing studies that shed insight into the factors that influence people's attitudes toward hazards. It has been discovered that those who are concerned with a heightened sense of anxiety are more inclined to overstate the hazards [35]. This is linked to parents' erroneous shaping of their children's attitude towards threats [36] and the failure to teach those with elevated anxiety ineffective methods to react to danger [37]. The underestimation or ignoring of threats is caused by an increased predisposition to take risks [38, 39]. High impulsivity combined with inadequate emotional stability also has a significant influence [40], which can result in irresponsible behaviors. Specifically, a study by Hanawi *et al.* [41] demonstrated that stress, anxiety, and depression are increased when students disregard healthy lifestyles due to ignorance of the risks. The findings of this study greatly advance contemporary psychology's knowledge of the internal factors that influence people's attitudes toward risks—in this case, students. A particular attitude towards hazards is more likely to develop whether or not certain irrational ideas are present.

It was determined that except for female students, who are more likely to have obsessive-compulsive beliefs, an adequate sensitive attitude towards threats is essentially not positively correlated with irrational beliefs. The desire to be the best, accomplish noteworthy outcomes, and receive recognition and praise all depend on providing an adequate response with heightened sensitivity to threats. This can only be accomplished by closely adhering to the rules and regulations, which entails providing an adequate response to a real or potential threat.

The choice of an acceptable, but less sensitive, attitude to hazards is determined by schizoid attitudes in both men and women. This is a result of the schizoid type's pedantry, which is the desire to do everything perfectly while avoiding closeness, maintaining a safe distance, and failing to recognize potential dangers.

Compared to males, women are more likely to feel the need to exaggerate the risks. Only six males were determined to be of the anxious sensitive type, which is founded on obsessive-compulsive beliefs and is dominated by attitudes related to the need to be the best and only produce meaningful outcomes. This is linked to heightened awareness of dangers and a propensity to overstate their importance.

Since there are just two students, we did not take into account the apprehensive type of approach towards hazards with lowered sensitivity. Exaggerated threats were linked to avoidant attitudes in the female group. "Their main strategy is to avoid situations in which they can be judged," as A. Beck and A. Freeman observe. This group of people avoids attention and tends to remain distant in social situations. They shy away from advancements and new tasks at work out of concern for failure and the retaliation they might face from others [27, 38]. Therefore, exaggerating risks serves as a particular approach for putting the avoidance strategy into practice.

Disregarding the risks also revealed associations with other illogical ideas, with data collected for male and female students differing. If antisocial attitudes are the cause of students' disregard for dangers and decreased sensitivity, then passive-aggressive and histrionic (demonstrative) attitudes are the cause of these attitudes among female students. Ignoring the risks is linked to the need for self-assertion in the first instance (among men), where they protect their independence by saying, "If I adhere to the rules, I lose my freedom of action." This is the second (among women): "It is unbearable to be under the control of others," "I must do everything on my own," and "I deserve to be commended for everything I have done." These statements reflect the idea that women have exceptional personalities that should be recognized by others, and they want to act in their own way, avoid control, and earn only their approval.

The ambiguous response is caused by one of two factors: either a non-established kind of response in dangerous situations or a selective response, making it impossible to discuss a specific stable type. Simultaneously, it was discovered in the male sample that some men choose to behave like the model when they are in danger, just like the person they believe to be their defender.

Conclusion

Therefore, numerous inferences can be made based on the research that was conducted. Eight categories of students' attitudes towards danger were found, varying in the degree of threat awareness and the selection of appropriate or insufficient responses to dangerous circumstances. The remaining students had an indefinite type of attitude towards dangers, with over 40% of them being adequate (sensitive and with reduced sensitivity), 20% being inclined to exaggerate the significance of the dangers, and more women than men. Of the main people with reduced sensitivity, 14% are inclined to ignore dangers; among men, this type is more common than among women.

It was discovered that students hold a very broad variety of illogical beliefs that are not pathological and do not point to psychological plan violations, but they do have an impact on student's behavior, especially how they perceive hazards, and they vary by gender.

Men's beliefs in the passive-aggressive and histrionic types are negatively connected with an adequate sensitive attitude toward dangers, while women's beliefs in the avoidant and obsessive-compulsive types are positively connected with this attitude. The prevalence of schizoid-type attitudes is mostly responsible for both men and women having an adequate attitude towards hazards with decreased sensitivity.

Men who have an anxiously sensitive attitude towards hazards have a negative correlation with schizoid attitudes and a positive correlation with obsessive-compulsive attitudes. In women, antisocial type beliefs are adversely correlated with both anxious sensitivity and anxiety with low sensitivity types. Additionally, avoidant type beliefs and histrionic type beliefs are favorably correlated with the anxious with low sensitivity type.

In the absence of dependent-type attitudes, men's less sensitive attitude towards threats is linked to antisocial beliefs, whereas women's views are linked to histrionic and passive-aggressive beliefs.

As a result, our hypothesis was only partially supported by the study, which found that irrational beliefs had a greater range of effects on students' attitudes toward risks and that these effects might vary by gender.

Generally, it is required to conclude that illogical beliefs, in conjunction with other psychological elements, play a key role in the development of a specific personality type's attitude toward hazards. The development of an adequate sensitive type, which is ideal for a person's interactions with the outside world and other people, can be Maralov et al., How Irrational Beliefs Shape Risk Perception in Medical and Psychological-Pedagogical Students

influenced by establishing conditions for overcoming certain irrational beliefs and substituting them with rational ones.

The study's shortcomings are evident in the fact that an individual may hold multiple ideas, which could affect his behavior in various ways, including how he views danger. As a result, the practical plane already shows the potential for future research in determining the part that irrational beliefs play in determining an individual's behavior and attitudes toward dangers.

The study's findings can be applied to medical and psychological-pedagogical students' professional training as well as university psychological services activities that aim to develop a sufficiently sensitive attitude towards risks by fostering an environment where students can overcome irrational beliefs and replace them with rational ones.

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References

- 1. Ramezanli S, Jahani Z, Poorgholami F, Jahromi FF. The relationship between spiritual intelligence and happiness in cancer patients referring to selected hospitals of Tehran University of medical sciences. J Adv Pharm Educ Res. 2020;10(3):57-61.
- 2. Motlagh AR, Shojaeizadeh D, Azam K, Kaboli NE. Adolescent obese females and quality of lifestyle: an examination of anthropometric and socio-economic factors in Tehran-Iran. Entomol Appl Sci Let. 2020;7(4):66-70.
- 3. Ilali EA, Loleti HA, Charati JY, Khatir MA. The relationship between attachment styles and meaning in life in elders. Pharmacophore. 2019;10(5):37-44.
- 4. Simpson R. Neither clear nor present: the social construction of safety and danger. InSociological Forum 1996 Sep 1 (Vol. 11, No. 3, pp. 549-562). Kluwer Academic Publishers-Plenum Publishers.
- 5. Siegrist M, Árvai J. Risk perception: reflections on 40 years of research. Risk Anal. 2020;40(S1):2191-206.
- 6. Denefrio S, Dennis-Tiwary TA. Threat sensitivity. Encyclopedia of personality and individual differences. Cham: Springer; 2018.
- 7. Mackworth N. Vigilance. Nature. 1956;178(4547):1375-7.
- 8. Warm JS, Finomore VS, Vidulich MA, Funke ME. Vigilance: a perceptual challenge. In: Hoffman RR, Hancock PA, Scerbo MW, et al., eds. Cambridge handbooks in psychology. The Cambridge handbook of applied perception research. 2015. Vol. 1 (p. 241-283). Cambridge University Press.
- 9. Toor MN, Baig MT, Shaikh S, Shahid U, Huma A, Ibrahim S, et al. Pharmacovigilance as an essential component of pharmacotherapy at tertiary hospitals in rural areas of Pakistan. Pharmacophore. 2020;11(4):71-5.
- 10. Ein-Dor T. Facing danger: how do people behave in times of need? The case of adult attachment styles. Front Psychol. 2014;5:1452.
- 11. Donahue JJ. Fight-flight-freeze system. Encycl Personal Individ Differ. 2020:1590-5.
- 12. Gray JA. The neuropsychology of anxiety. Br J Psychol. 1978;69(4):417.
- 13. Blanchard DC, Hynd AL, Minke KA, Minemoto T, Blanchard RJ. Human defensive behaviors to threat scenarios show parallels to fear-and anxiety-related defense patterns of non-human mammals. Neurosci Biobehav Rev. 2001;25(7-8):761-70.
- 14. Mobbs D, Hagan CC, Dalgleish T, Silston B, Prévost C. The ecology of human fear: survival optimization and the nervous system. Front Neurosci. 2015;9:55.
- 15. O'Dea CJ, Bueno AM, Saucier DA. Fight or flight: perceptions of men who confront versus ignore threats to themselves and others. Personal Individ Differ. 2017;104:345-51.
- 16. Maralov VG, Gura AY, Tatlyev RD, Epanchintseva GA, Bukhtiyarova IN, Karavaev DM. Influence of the sex and age on people's attitude toward hazards. Astra Salvensis. 2019;(13):343-51.

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- 17. Maralov VG, Sitarov VA, Kudak MA, Maralova TP, Koryagin II. Phenomena of adequate response, exaggeration or understatement of dangers by people. Perspect Sci Educ. 2020;45(3):360-78.
- 18. Beck AT. Cognitive therapy and the emotional disorders. Penguin; 1979.
- 19. Ellis A. Reason and emotion in psychotherapy: revised and updated. New York: Birch Lane; 1994.
- 20. Sakakibara E. Irrationality and pathology of beliefs. Neuroethics. 2016;9(2):147-57.
- 21. David D, Cotet C, Matu S, Mogoase C, Stefan S. 50 years of rational-emotive and cognitive-behavioral therapy: a systematic review and meta-analysis. J Clin Psychol. 2018;74(3):304-18.
- 22. Ozer EA, Akgun OE. The effects of irrational beliefs on academic motivation and academic self-efficacy of candidate teachers of computer and instructional technologies education department. Procedia Soc Behav Sci. 2015;197:1287-92.
- 23. Turner MJ. Rational emotive behavior therapy (REBT), irrational and rational beliefs, and the mental health of athletes. Front Psychol. 2016;7:1423.
- 24. Jibeen T. Personality dimensions and emotional problems: the mediating role of irrational beliefs in Pakistani adult non-clinical sample. Int J Psychol. 2015;50(2):93-100.
- 25. Maralov VG, Malysheva EY, Nifontova OV, Perchenko EL, Tabunov IA. Development of test on sensitivity to threats in adolescence. Prospects Sci. 2012:32-7.
- 26. Maralov VG, Malysheva EYu, Smirnova OV, Perchenko EL, Tabunov IA. Development of a test questionnaire to identify ways of responding in situations of danger in adolescence. Almanac Mod Sci Educ. 2012;12-1(67):92-6.
- 27. Beck A, Freeman A. Cognitive psychotherapy of personality disorders. Sank-Petersburg: Peter; 2019. 44 p.
- 28. Beck AT, editor. Cognitive therapy of depression. Guilford Press; 1979.
- 29. Beck AT. Cognitive models of depression. Clin Adv Cogn Psychother. 2002;14(1):29-61.
- 30. David D, Schnur J, Belloiu A. Another search for the "hot" cognitions: appraisal, irrational beliefs, attributions, and their relation to emotion. J Ration Emot Cogn Behav Ther. 2002;20(2):93-131.
- 31. Ellis A. The role of irrational beliefs in perfectionism. In: Flett GL, Hewitt PL, eds. Perfectionism: theory, research, and treatment. Washington, DC, US: American Psychological Association; 2002. p. 217-29.
- 32. Vîslă A, Flückiger C, Grosse Holtforth M, David D. Irrational beliefs and psychological distress: a metaanalysis. Psychother Psychosom. 2016;85(1):8-15.
- 33. Beck AT. Prisoners of hate: the cognitive basis of anger, hostility, and violence. New York, NY, US: HarperCollins Publishers; 1999. 368 p.
- 34. Goldberg GM. Irrational beliefs and three interpersonal styles. Psychol Rep. 1990;66(3):963-9.
- 35. Perkins AM, Cooper A, Abdelall M, Smillie LD, Corr PJ. Personality and defensive reactions: fear, trait anxiety, and threat magnification. J Personal. 2010;78(3):1071-90.
- 36. Britton JC, Lissek S, Grillon C, Norcross MA, Pine DS. Development of anxiety: the role of threat appraisal and fear learning. Depress Anxiety. 2011;28(1):5-17.
- 37. Gazendam FJ, Kamphuis JH, Kindt M. Deficient safety learning characterizes high trait anxious individuals. Biol Psychol. 2013;92(2):342-52.
- 38. Horvath P, Zuckerman M. Sensation seeking, risk appraisal, and risky behavior. Personal Individ Differ. 1993;14(1):41-52.
- 39. Zuckerman M. Sensation seeking and risky behavior. Washington, DC: American Psychological Association; 2007.
- 40. Prince-Embury S. Risk behavior and personal resiliency in adolescents. Can J Sch Psychol. 2015;30(3):209-17.
- 41. Hanawi SA, Saat NZ, Zulkafly M, Hazlenah H, Taibukahn NH, Yoganathan D, et al. Impact of a healthy lifestyle on the psychological well-being of university students. Int J Pharm Res Allied Sci. 2020;9(2);1-7.