

## REVIEW

## A review of the influence the anxiety exerts on human life

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### Abstract

Our intention has been to review the literature addressing the anxiety phenomenon from as many points of view as possible. By searching in *PubMed* and *Web of Science* and by using multiple filters, we have included, of the over 1800 results, 93 studies with the aim of covering more aspects of life anxiety exerts its influence upon. We have discussed the connection between anxiety and physiological and psychological functioning, or its connection with the areas of family, religion, social life and behavior, as well as the cultural side, childhood, pregnancy and many others.

**Keywords:** anxiety, family, childhood, pregnancy, culture, behavior.

### ☞ Introduction

Anxiety is a widely discussed phenomenon in the specialized literature. Anxiety, according to some estimations dating from the 1990s, affected 26.9 million people in the USA only, which generated direct and indirect costs of approximately 46.6 billion dollars [1]. In the period starting with 2000, a prevalence of 13.6% for anxiety disorders has been found within the population of Europe, with women being significantly more affected than men, while the highest percentage of affective disorders was found within the population with an age between 18 and 24 years old [2]. Other research conducted up to 2013 found a prevalence, this time global, of 14.7%, which also showed a double prevalence within the female subject pool compared to the male subject pool [3].

### Aim

We have reviewed the specialized literature addressing the anxiety phenomenon and its influence on various aspects of human life.

### ☞ Search methodology

Between January–March 2018, we performed a *PubMed* and *Web of Science* search by using the syntax [“anxiety” or “influen\*”], selecting relevant articles that met the preset inclusion criteria. The research returned a total of 1862 results, of which we have eliminated animal studies or those that included less than 100 patients. Other exclusion criteria were: articles that connected diseases/medical interventions of any kind with anxiety, those that exclusively discussed a certain sport (such as golf or swimming) or very specific abilities or capacities (Mathematics, Physics, IT, Music) of the subjects in relation to anxiety. We also avoided studies which included or referred exclusively to twins or the field of Genetics.

### ☞ General aspects

According to the research, the anxiety influences attention, learning, cognitive processes, information processing and the academic performance or the work capacity [4–7]. Moreover, it has been demonstrated that anxiety influences arterial pressure, pain resistance threshold, that it increases stress levels and reduces the activity of the immune system [8–10]. Other research states that anxiety is a predictor for depression, it influences high alcohol consumption, it influences the decisional process, it is associated with migraines, it correlates with skin conditions (especially psoriasis and atypical dermatitis) and it correlates with post-event negative rumination [11–16]. On the other hand, the anxiety levels are influenced by the cultural and social environment, by defensive mechanisms – denial, for instance, by physical exercise, rest or psychotherapy [17–25].

### Physiological and psychological aspects

The research abounds in correlations and associations between anxiety and different human areas of life – medical or psychological. For instance, it has been found that anxiety is in close correlation with a slower health recovery [26] or that the symptoms displayed within a diabetes condition can be influenced by anxiety and/or depression [27]. A study claims it has found an “intestine–brain axis”, suggesting that intestinal microbes and bacteria could activate different neuronal paths, thus influencing the anxiety levels [28]. An important connection has also been found between visual acuity, for instance, and a higher probability of developing an anxiety disorder throughout lifetime [29], while other research claim a higher pregnancy related anxiety could lead to an increase in the occurrence of Caesarean (C)-section surgical interventions, but also to a longer labor [30] or that the anxiety trait, although it does not have influence on the newborn’s weight at birth, nevertheless influences her length [31].

Furthermore, a very recent study, carried on a pool of over 42 000 subjects, has found a very close connection between anxiety and the fact that it triggers a sedentary behavior – which, in turn, has been proved to have strong negative effects on health [32]. Other studies have also found that there is a direct or inverted relation between the pessimistic or optimistic orientation in life and the anxiety levels experienced by the subjects [33], that, of all students, the female population experiences social anxiety more frequently than the male population [34]. Another study, also very recent, highlights the negative influence the anxiety has on judgment, on solving new problems, on the working memory or on the capacity to use prior knowledge for finding solutions [35].

### Family

An important segment of research focuses on the family context, along with everything it implies, and its relation with anxiety. For example, one of the studies we have analyzed found that mothers play the most important role in learning unrest and social anxiety by their children, while fathers are more inclined to teach self-confidence to those already socially anxious [36]. Another study, which included over 2000 students, shows that, if the children grow up without a paternal figure around them, they will present higher anxiety levels, as well as lower self-esteem levels than the general population [37]. It seems that also the attachment style is in strong connection with anxiety – for instance, it has been found that less secure attachment styles are associated with higher social anxiety levels, as the oxytocin level can be a mediator in this relation [38]. Other research shows how family models work, highlighting how, if the mother presents internalized symptoms of anxiety and depression, then her children will report high anxiety levels already as soon as teenagehood [39]. Last, but not least, recent research has shown how a childhood marked by abuse, but also physical violence and traumatic experiences, leads to a higher percentage of post-traumatic stress in co-morbidity with generalized anxiety [40].

### Religion

It has been discovered that a mediating role on anxiety is played by religion – the prayer's positive effects persist one year after the spiritual process has ceased – but also by most of the therapies: cognitive-behavioral, psychodynamic, based on medication, mindfulness, as well as placebo [41, 42].

### Psychological functioning

Anxiety deeply influences the way we function. A research from 1993 shows that anxiety has a negative impact on reading a text, as the anxious individuals have to make additional efforts to process newly read information [43]. This occurs while the motivation to attain, to achieve objectives is itself influenced by the anxiety trait level, but also but also by the perceived happiness level [44]. Related to failure and performance and the need to achieve objectives, it has been found that the anxiety which correlates with lack of success and failure negatively influences the motivational structures, which, in turn, will negatively affect learning [45]. One of the

experiments performed by researchers shows that anxiety affects the process of making any kind of decisions: for example, if people are sad, they are more inclined to opt for risk and high reward, whereas the anxious individuals will preponderantly make decisions that imply low risk, but also low reward [15]. There are also anxious states in relation to technology: for instance, some push the consumer to interact less with those types of technology that could provide all sorts of services, but they also influence the consumer's satisfaction regarding the services thus obtained [46]. By examining the relation between test situations and anxiety, it has been observed that anxiety drops as the time allocated for the test passes and, as a consequence, does not affect the test result any more [47]. Also, it has been ascertained that individuals with a fear of tests reported lower levels of learning aptitudes, they regarded the test as more threatening and took notes less efficiently, the anxious groups thus obtaining lower test scores and higher emotionality levels [48]. Other studies have investigated the role of anxiety in situations such as a job interview: for example, the interviewer's characteristics – warmth, unfriendliness, level of competence, humor – have directly or indirectly influenced the applicant's anxiety level [49]. In general, it has been found that the level of the students' anxiety trait is higher than the general population average, as 20% of them reach critically high levels; among the factors that impact the anxiety levels there are: the pressure of finding a job, deficient time management, high discrepancy between expectations and reality, but also the pressure to learn [50]. It has also been found how different anxiety levels influence a person's reaction time to sound and light, and very high anxiety levels lengthen the reaction time very much; still, practice, emotional stability and concentrated attention could significantly decrease the reaction time [51]. Regarding anxiety in ambiguous situations, it has been found that, similarly as in the adult's case, children who have increased anxiety trait levels will record high scores for anxiety in ambiguous situations [52]. Last, but not least, also speaking of functioning ways, this time regarding memory, we introduce a study which has ascertained that short-term negative emotions protect the person against forming false memories, and the highly anxious states, even the anxious pathologies, also lead to a fewer falsely created memories [53].

### Behavior

Anxiety relates to some types of behavior – such as eating or physical exercise – but it also influences the perceptions and the physical or physiological process, which have an impact on the individual's social life. In this respect, we can mention a study that shows how going to the gym and practicing through weight lifting, although it does not modify the anxiety trait levels, makes one more aware of their own body [54]. It has also been found that anxiety – both as state and as trait – decreases athletic performance, as the winners are those who record the lowest levels of anxiety, either as state or as trait [55]. Regarding the eating behavior, it has been observed that the health related anxiety correlates with the dietary behavior and with a preoccupation for food and physical exercise, but also, as far as women are

concerned, with checking weight and body shape very frequently [56]. In the same area, we can mention that some research shows how fury, as well as anxiety – both being strongly active traits which determine a confrontation/avoidance behavior, but also a negative one – generally influence eating disorders, while the anxiety and a negative feeling of urgency strongly influence compulsive eating [57]. And because we have mentioned the health related anxiety, we consider it opportune to bring into the present discussion a study which shows that an individual's high level of emotional intelligence makes them manifest less health related anxiety – that is, a low level of feelings related to vulnerability to disease or less tragic consequences of falling ill; as adaptability is the construct which influences most of the beliefs that generate health related anxiety, the latter is independent of the individual's prior illness experiences [58]. In relations to other people, it is important to accurately detect and recognize the facial expressions the others manifest. It has been observed that the anxiety state leads to a stronger inclination to use contextual information while interpreting facial expressions, whereas the anxiety trait tends to favor emotions, rather than context, in interpreting facial expressions [59]. This occurs while generalized anxiety leads both men and women to recognize human figures expressing different emotions (facial expressions) very easily, women being more sensitive to facial expressions that might express threat or approval [60]. On a more humorous note, but not an irrelevant result as far as social interactions are concerned, it has been found that there is a connection, direct correlation, between the volatile sulfur compounds from the mouth – those that produce halitosis – and high anxiety levels [61]. Sleep and rest also appear to be in relation to anxiety; one study has ascertained that anxiety is influenced by the perceived quality of sleep, but not by the number of sleep hours, while it is also true that worrying and feeling anxious affects the sleep quality, the relation being thus correlations and not causal [62]. Regarding the perception of pain, one study has found that anxiety, along with attention, influence an individual's tolerance to pain; those less anxious and attentive were more tolerant to pain than those who were anxious and attentive, the result being thus a strong connection between attention and pain perception [63]. Other studies we have deemed relevant for the present subject have found that anxiety is associated with a high risk of aggravating the already existent disabilities for older women [64] or that, also for women, namely those during the transition phase towards menopause, the prevalence of anxiety is of approximately 10% [65].

### **The social component**

Social anxiety consists of a separate topic within our incursion in our review. As early as childhood, it is related to social rejection from colleagues, this relation being moderated by the quality of the friendship between the parties, though [66]. Social anxiety is associated with three types of dysfunctional interpersonal relationships: avoidance in expressing emotions, lack of assertiveness and interpersonal dependence [67]. It has also been found that individuals with social anxiety are better at reading facial expressions [68] and that a low self-esteem and

conflictual relationships with the others are two of the variables, which can maintain the eating disorders in people with high social anxiety levels [69]. Another study has indicated that the anxiety trait inversely correlates with avoiding social contexts and distress, but also with the fear of a negative evaluation and depressive symptomatology; yet positive correlations (direct relations) have been found between the anxiety trait and unpleasant (adverse) events with a traumatic potential [70]. We can also mention here that shame and social anxiety are in strong connection in children and teenagers and it seems that more that age, it is the gender (female, in this case) that records higher levels for both phenomena [71].

### **Culture and family**

More recent research has revealed through a multicultural study that the Asian people record higher anxiety levels than Europeans or Americans and that, regardless of race and culture, the predictors were the same: rejection from parents, growing up in an anxious environment, based on control or overly protective [72]. Another multicultural study has revealed that there is an inversely proportional relation between family cohesion and the children's anxiety levels and, moreover, that the more control tendencies the mother has, the more anxious they are, while the fathers manifest a stronger non-acceptance attitude in relation to the child [73]. It has been observed that there is a connection between the family environment and the young people's levels of anxiety experienced before exams, consequently, if the anxiety were diminished, the students would perform better. The same study shows the level of anxiety experienced before exams was also influenced by: the mother's level of education, projecting the family problems onto the child, the family's lack of confidence in the student or the pressure on the student to learn and forbidding the students' from taking part in social events. Furthermore, it seems that pre-examination anxiety would not be influenced by the father's level of education, the number of family members or their religious beliefs [74]. Also, regarding the family, it has been found that, if the teenager's parents are absent, this would lead to disharmonious relations with the teachers and the colleagues, thus causing higher levels of anxiety for some teenagers, compared to their peers [75].

### **Impostor syndrome**

One of the articles focused on the relation between anxiety and the concept called "the impostor syndrome". What was highlighted here was that high anxiety levels are associated with high levels of the impostor syndrome, as there were found direct correlations between the two. Perfectionism was discovered to be the strongest predictor for the impostor syndrome [76].

### **Impact on health**

Regarding health and anxiety and, obviously, the relation between them, there is a plethora of studies which analyze the connection between all sorts of disease and conditions, on one side, and anxiety, on the other. As we did not intend to make this the central topic of our review, we were only interested the fact that, generally, women suffer from generalized anxiety more than men and this

is associated with modifications in the level of cholesterol, with smoking, depression and strokes [77] – clearly, after all, all with impact on health.

### Alcohol

There is also a close relation between anxiety and alcohol consumption. A study has found that high levels of the anxiety trait lead to a higher risk for an individual to develop alcohol related problems [78]. Similarly, it has been observed that the alcohol and the alcohol consumption are used as a type of behavior that brings an extra feeling of safety to people suffering from social anxiety [79]. On the same topic, it has also been observed that students presenting high levels of social anxiety, who are also more easily influenced by their colleagues, have reported alcohol consumption levels which were damagingly high, with all the unpleasant consequences of this phenomenon [80].

### Death anxiety

An interesting phenomenon has been captured by a study which reported that death related anxiety is higher in women than in men. Further on, it has been shown that medical assistant students recording higher scores for fear of death refuse to care for dying patients; yet, if they are given counseling, therapy or specific education, they can handle this job [81].

### Childhood

As one may suspect, a hard childhood plays an important role as far as anxiety experienced as an adult is concerned. Some of the studies we have included here show that individuals who were more exposed to negative events with a traumatic potential during their childhood reported higher levels and more severe symptoms of anxiety as adults. And these symptoms related to anxiety were associated with a risky sexual behavior. It seems, however, that in this case the anxiety and depression have mediated the relation-troubled childhood – risky sexuality [82]. From the same area of study, it has been observed that if, at a certain point during an individual's childhood there was a history of anxiety disorder, then, they would present anxiety–depression co-morbidity [83]. Last, but not least, there is a study which highlights that fact that women with a history of sexual abuse during their childhood, although they benefited from access to therapy regarding anxiety, still present a high risk of post-traumatic stress disorder (PTSD), a risk of rape or a risk of self-aggression without suicide attempt [84].

### Pregnancy

Some research data have revealed that the pregnancy and its implications can play a major role in all the anxiety levels experienced by the pregnant woman. For instance, a study shows – intuitively, we might add – that women who have had a pregnancy loss will experience more anxiety during the next pregnancy [85]. Another article presents how the anxiety levels – especially those related to death and mutilation – are very high compared to the general average in women who experienced a spontaneous abortion. And the variables that influence the anxiety levels are: age, time passed since the event, pregnancy duration, number of similar prior events or

the social support the pregnant woman benefits from [86]. In this area of study, we will also include some research that revealed how the levels of anxiety and/or depression in pregnant women are influenced by: the perceived social support, marital or emotional problems before or during pregnancy, recent experience of stress or of physical violence, a negative perception of the self or of the problems during pregnancy [87]. Another study shows that anxiety in pregnant women during prenatal period has a prevalence of 14% and it is associated with (is influenced by) the age when she got pregnant, the ethnic minority status, growing up with just one parent, living in an underprivileged area, an unwanted pregnancy or the pregnant woman's health problems over a longer period of time [88].

### Anxiety therapy

If we are to discuss about what functions in the therapy of anxiety, although many research data show that therapies generally have good results, we have chosen to focus our attention on the cognitive behavioral therapy, but only by way of example. An article from 2003 shows that, regardless of co-morbidities, in children and teenagers the cognitive behavioral therapy delivers results [89]. Another article ascertains that the cognitive behavioral therapy (CBT) for anxiety disorders in persons with personality disorders is opportune [90]. We have also found mentions according to which CBT is beneficial also for people with somatic symptom disorders and anxiety–depression co-morbidity [91]. Moreover, it has been observed that the cognitive behavioral therapy, as well as the complexity of the anxiety symptoms, influences the long terms results of the intervention upon anxiety [19], while the anxious traits have no effect on the response to the depression treatment; it has been observed, however, that women respond to treatment better [92]. One interesting and relatively amusing aspect has been that neither aromatherapy (roses, grapefruit or oranges and lemon) nor a total lack of flavors has influenced in any kind the anxiety levels or the emotional states of the subjects participating in an experiment [93].

### ☞ Conclusions

Judging by the number of results of initial and filtered searches, we find that anxiety is still a psychological and somatic phenomenon that benefits from the attention and interest of the researchers, which is understandable as it is still a problem that affects the physical and mental health of people, in complex ways and with multiple influences.

As it results from the data in this article, anxiety is a condition that can influence life on multiple levels without having a predetermined way of action. Despite the existence, even today, of theories that support the separate functioning of the psyche and the body, the evidence of close unity between body and mind is becoming increasingly obvious and harder to ignore, as anxiety is a phenomenon intensely lived in the body and visibly changes the way it works, as well as the relationship people have with it.

Furthermore, we see once again that anxiety is not conditioned or limited by anything, especially age, gender, religion or culture, and it is not isolated in time, as it does not disappear by itself and requires intentional, sustained and specific actions to change it.

It is evident from the data presented that anxiety is a problem with countless medical consequences with multiple levels of severity, affecting not only separated individuals, but generations by generations and even whole communities.

### Conflict of interests

The authors declare that they have no conflict of interests.

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