# LONELINESS IN GIFTEDNESS:
# RISK FACTORS AND COPING STRATEGIES

## LA SOLEDAD EN LA ALTA CAPACIDAD INTELECTUAL: FACTORES DE RIESGO Y ESTRATEGIAS DE AFRONTAMIENTO

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## Extended Summary

Gifted children and teens display unique personal, biological, cognitive, and emotional characteristics. On many occasions these characteristics are not understood and tolerated by their environment, as a consequence these children often use two strategies: hide their potential to adapt to the group or withdraw from it. Not being able to adequately satisfy the basic needs for social interaction and belonging to the group can have serious consequences on physiological, cognitive and socio-emotional and academic development. This work has a double aim: to identify some of the risk factors that make gifted children and teenagers especially vulnerable to experiencing physical, social and / or psychological loneliness; and describe the coping strategies most used by this population to achieve social acceptance and avoid the harmful effects of this isolation.

A search for scientific articles was carried out through the Pubmed, Scopus, Web of Science and Google Scholar databases. Mainly the keywords "gifted *" AND "children" OR "teen *" OR "loneliness" OR "emotional development" OR "social development" OR "emotional disorder" OR "social exclusion" OR "friendship" OR "coping strategies " were used without language restriction. In the first phase, those original or review articles published in the last 5 years were included

in which giftedness was related through the title or abstract with loneliness, social exclusion, socio-emotional development, some type of emotional disorder or the friendships. Articles were included that addressed the terms previously described from childhood to teens, both from a cross-sectional and longitudinal perspective and in the different profiles of the giftedness (logical-deductive and / or divergent-creative).Those articles that did not address the physical, social and / or psychological loneliness of the gifted child and teens in a direct way and those focused exclusively on adult subjects were excluded. After an in-depth analysis, indirect searches were made of the most cited authors or of those who presented relevant or novel data for the elaboration of the work.

The results indicate that these children are more sensitive, experience stronger emotions and are more aware of the inconsistencies and injustices of the world and their limitations to change it. However, when they try to share their existential thoughts and concerns, they are generally met with reactions that range from bewilderment to hostility. Having a better understanding of the subtleties or nuances of communication and greater empathy can make them more vulnerable to criticism, rejection, and bullying.

Some studies show that a possible risk factor in gifted teens for experiencing physical or psychological loneliness could be that friendships are defined and experienced differently. Gifted students' friendships can be more heterogeneous. These students are open to holding opposing points of view with their friends, they accept disagreement as positive, stimulating, and enriching, and they give less importance to intellectual conflicts. Students of average intellectual capacity, however, avoid conflict more openly and prefer friendships in which camaraderie and closeness predominate, so their friendships are more homogeneous

Some of the neural networks associated with rejection or social exclusion have been found to be the same as those involved in physical pain experiences, such as the anterior cingulate cortex (ACC) and the anterior insula (AI). From an evolutionary perspective, the feeling of social isolation not only increases motivation to connect with others, but also produces implicit (non-conscious) hypervigilance and increased sympathetic activity in search of social threats. Gifted children have been shown to make greater use of ACC at an earlier age and have more connections in this area than their peers with average intellectual capacity. A greater activation of the ACC through its connections with the nuclei accumbens would allow a greater adaptation to the demands of the environment and an increase in motivation in social approach behaviors, which would favor interpersonal relationships. However, it could also contribute to greater storage and retrieval of painful experiences through its connection to the amygdala. Which would explain not only why these children are more vulnerable to social rejection but also why it has worse physical and psychological consequences.

Social exclusion also modulates the functional connectivity of brain networks involved in mentalization or understanding the mental states of others, specifically,

the dorsal and ventral medial prefrontal cortex, the precuneus, and the bilateral temporo-parietal junction. This network overlaps with the Default Mode Network (DMN), a network that kicks in when people engage in internally focused tasks, providing insight into previous experiences and potential perspectives. Functionally, the activation of these networks helps to reflect on the motives and intentions that lead others to exclusion and the consequences it can have on a personal and social level. The connection between DMN and the executive network, which is involved in mental control and regulation, is greater, and functionally begins at an earlier age, in gifted children.

These findings may be related to a greater understanding of both the mental world itself and the thoughts, beliefs, and intentions of others in gifted children. But processing information with a greater degree of personal and affective involvement and spending considerably more time trying to assess and understand the reasons that led to their exclusion can be triggers for certain psychological disorders such as depression or anxiety.

Some authors have associated social isolation with a higher prevalence of psychological and physiological disorders in this population compared to the average intellectual capacity. These authors argue that the rumination and concern that accompany a greater social and interpersonal awareness can contribute to a continuous sympathetic activation with the consequent immune deregulation. Similarly, the perception or presence of social support seems to reduce physical pain and pain-related neuronal activity, both dorsal ACC and AI are among the structures with higher densities of mu-opioid receptors in the central nervous system.

It has been found that when the social and educational environment responds to the affective and cognitive needs of these students the academic and social adaptation does not differ from that of their peers of average intellectual capacity. It is even more when these children and teens are accepted, respected and socially integrated they enjoy through social relationships with other people, can take on leadership roles with ease and develop high self-esteem.

Research has shown that gifted students have the ability to modify their social coping strategies based on their social perceptions and goals. In the academic field they use a greater number of positive coping strategies than their peers of average ability, such as the acceptance of responsibility for their work, involvement in the resolution of problems, finding resources or information from others and seeking social and emotional support. However, they avoid negative or less productive forms of coping such as anger, avoidance, blaming other agents or circumstances, delaying the completion of tasks in time, relaxing or sleeping.

In times of stress, outside the academic context, gifted students attach greater importance to listening to the stressors and viewpoints of their peers to rethink their own problems from a different perspective. While their peers, without giftedness, often interact with their friends as travel companions for fun activities such as shopping and watching movies that provide temporary breaks from their current

stress factors.

The increased sensitivity and empathy of gifted children is especially helpful in certain deceptive abilities such as prosocial lies, which help maintain a friendship without harming it. In this way they could experience more fruitful social relations. In addition, their ease with ambiguity and paradox allows them to take to the extreme situations that are truly frustrating and distressing in order to make them lose all logical sense and turn them into almost a comed. This change of perspective is often used both on themselves and on the circumstances surrounding them, however, it may not be understood by their surroundings and seem extravagant.

Coping strategies in response to the perception of the negative effects of recognizing giftedness appear to be denying talent, minimizing popularity and conformity with others, Among them, the most widely used strategy is to deny the giftedness and it is more frequent in the case of girls and teens.

These findings underscore the importance of understanding the dynamics of social networks in this population in order to create educational environments conducive to the development of positive social relationships. These children and teens need opportunities for the development of reflective social-emotional skills. Helping them imagine their future, connecting their abilities with a broader purpose, reflecting on the social and emotional relevance of their actions, valuing them for what they are more than for what they do, are aspects of social-emotional development that increase academic success, creativity and talent. Gifted children tend to be creative, display critical, independent, and divergent thinking, reject peer pressure, and tend to question the establishment. In the current educational system, creative ideation is negatively correlated with academic achievement, and a lack of creativity, in turn, is associated with intolerance, the habitual use of stereotypes, low levels of empathy and bullying.

Education for gifted children and teens must be able to guarantee and offer a wide range of activities adapted to different levels of difficulty. Working with different people in the production of positive creative and innovative work promotes cooperation, pro-social behaviors and empathy. Possibly more than others, gifted children and teens can appreciate and use different views offered with respect, participate in open communications, adapt their social skills into intellectually challenging, meaningful, and flexible projects. Moreover, the ability to have collaborative conversations is critical to daily practice and yet almost non-existent in current curricula. This underscores the need for future studies that help create coordinated and comprehensive educational and social opportunities to promote the optimal cognitive and social-emotional development of giftedness.