

Social Networks: A New Source of Psychological Stress or a Way to Enhance Self-esteem? Negative and Positive Implications in Bronchial Asthma

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■ Abstract

The Internet and, in particular, social networks are an increasingly important part of daily life for both adolescents and adults who maintain a virtual relationship with others sharing interests and goals. Very often, they disclose more about themselves online than they do in person. However, cyberbullying and cyberostracism can be problematic for adolescents and sensitive individuals, who might be negatively affected by social networks. Some studies have shown an increased risk of depression, whereas others suggest beneficial effects through enhanced communication, social connection, and self-esteem.

Bronchial asthma is an increasingly frequent disease in the industrialized world, and psychological implications play a role in increasing or in reducing its severity.

One year after the case report of an asthma exacerbation that may have been triggered by Facebook, it seems reasonable to analyze the effects of social networks on bronchial asthma.

Key words: Cyberbullying and cyberostracism. Facebook depression. Facebook-induced asthma. Bronchial asthma. Airway hyperresponsiveness. Emotional stimuli in asthma. Psychogenic asthma. Psychological triggers of asthma. Social networks and psychophysical health. Social networks and enhanced self esteem. Stress and asthma. Social networks and asthma.

■ Resumen

Internet y en particular las redes sociales forman parte, cada vez con mayor frecuencia, de la vida diaria no solo de los jóvenes sino también de personas adultas que quieren establecer una relación virtual con otras que tienen intereses y metas similares. A menudo desvelan muchos más datos sobre sí mismos de los que desvelan cuando la relación es en persona. Sin embargo, se han descrito casos de acoso cibernético o de ostracismo cibernético, y las redes sociales pueden ser un riesgo para los adolescentes o personas muy sensibles, que pueden ser influenciadas de forma negativa. Si bien algunos estudios han documentado el uso de las redes sociales como un factor de riesgo para la depresión, otros han sugerido diversos efectos beneficiosos de las mismas, mediante la facilitación de la comunicación, el contacto social y la autoestima.

El asma bronquial es una enfermedad cuya frecuencia ha aumentado considerablemente en el mundo industrializado y en las que diversas implicaciones psicológicas juegan un papel importante en el incremento o disminución de la gravedad de la obstrucción bronquial.

Un año después de describir un caso de asma con exacerbaciones desencadenadas por la red social Facebook, hemos considerado estudiar en profundidad el papel que pueden jugar las redes sociales en esta enfermedad.

Palabras clave: Acoso cibernético y ostracismo cibernético. Depresión por Facebook. Asma inducido por Facebook. Asma bronquial. Hiperreactividad bronquial. Estímulo emocional en el asma. Asma psicógena. Desencadenantes psicológicos del asma. Redes sociales y salud psicofísica. Redes sociales y autoestima. Asma y estrés. Asma y redes sociales.

Introduction

More than 2 billion people worldwide use the Internet [1], and an increasing number connect with social networks. A recent report states that 65% of online adults use social networking sites, a significant increase from 28% in 2009 and 8% in 2005. This percentage increases to 83% if only users aged 18-29 years are considered [2].

Consequently, the large number of people using social networks on a daily basis raises concerns about possible effects on physical and psychological health. Few studies or case reports focus on adolescents and young adults, the population most exposed to virtual relationships. According to a recent poll, 22% of teenagers log on to their favorite social media site more than 10 times a day, and more than half of adolescents log on to a social media site more than once a day [3]. Moreover, 75% of teenagers now own cell phones, and 25% use them for social media, 54% for texting, and 24% for instant messaging [4]. Using social media sites is one of the most common activities engaged in by today's children and adolescents. Thus, a large part of this generation's social and emotional development is occurring while on the Internet and on cell phones.

Asthma is one of the most common noncommunicable diseases in children, and its prevalence varies worldwide [5]. Up to 37% of teenagers are affected by asthma symptoms, making it one of the most common chronic diseases in childhood [6]. Absence from school and limitations in daily activities are frequent consequences of asthma. In 2004, the estimated cost of asthma symptoms among children in the European Union was €3 billion, indicating that pediatric asthma generates a substantial disease burden for society [7]. The increased prevalence of asthma observed at the end of the last century in developed countries has raised concerns over the burden of this disease on society and individuals.

Impact of Social Networks on Psychophysical Health

Social networking sites enable individuals to manage their own image. By providing multiple opportunities for selective self-presentation—through photos, personal details, and comments—these sites force health care specialists to reconsider psychological processes.

Social networks are commonly used for social dialogue among peers, and previous studies showed that references to personal information or health risk behaviors are common [8,9]. As an example, one of the more popular features of Facebook is the status update, in which personally written text describing the profile owner's current experience or emotion are displayed along with the date and time of disclosure. Such an option is particularly important, considering that adolescents often disclose more about themselves on social networks than they do in person [10]. Therefore, being removed from a friend's list (cyberostracism) can be a stressful event for adolescents.

Social networks have been used successfully in a study aimed at diagnosing depression among college students, who commonly display depressive symptoms on Facebook.

Therefore, social networking sites could prove to be an innovative means of identifying young individuals at risk for depression [11].

Already over a decade ago, Internet use was thought to promote negative psychosocial well-being, including depression and loneliness [12]. The increasing use of social networks may have amplified this effect in the last few years.

Moreover, via social media, adolescents can come into contact with inappropriate content, be unaware of online privacy issues, or be influenced by third-party advertising groups. Other problems worthy of attention include Internet addiction and concurrent sleep deprivation [13], as well as physical inactivity, which is associated with an increased risk of obesity [14].

Researchers recently proposed a new type of depression, termed "Facebook depression," which develops when preteens and teens spend long periods on social media sites and then begin to experience symptoms of depression [15-16].

Acceptance by and contact with peers are important elements of adolescent life. The intensity of these web-based relationships might be a factor that triggers depression in some adolescents. Teens and young adults who suffer from Facebook depression are at risk of social isolation and sometimes seek help on Internet sites that might promote substance abuse, unsafe sexual practices, or aggressive or self-destructive behaviors [17].

Social networking sites are designed to share information about the self with others, including likes/dislikes, hobbies, and personal thoughts. This information could make people aware of their own limitations and shortcomings, which would lower self-esteem [18]; on the other hand, it could represent selective and, therefore, positively biased aspects of the self, which might raise self-esteem [19]. Although videos and photos posted in a personal profile can only convey a face or a look unemotionally, they can sometimes amplify the emotions linked to those images. The lack of a physical or visual contact hampers the perception of reality and induces false or unreal convictions and distorted emotions.

Several studies and expert opinions suggest that use of social media in general might have a beneficial effect on children and adolescents by enhancing communication, social connection, and even technical skills [20]. Social networking sites offer multiple daily opportunities to connect with friends and share common interests. Recently, Facebook was shown to stimulate online socialization, thus supporting self-esteem and various forms of social capital. Facebook can also enhance social self-esteem, measured as a perception of one's body image, close relationships, and romantic appeal, especially when users receive positive feedback from Facebook friends [21]. These findings are supported by a later study showing that individuals with low self-esteem can improve their condition through the social opportunities provided by Facebook [22]. Selective self-presentation, which is made possible by the virtual world of social network sites, can have a positive influence on self-esteem, as shown in a recent study demonstrating that exposure to information presented on the user's Facebook profile enhances self-esteem, especially when the user edits information and pictures about his/herself or selectively self-presents [23,24].

Social Networks and Asthma

In 2010, we reported the first case of asthma exacerbation possibly triggered by use of Facebook. A young boy experienced asthma symptoms when he was connected to the personal profile of his former girlfriend [25]. We concluded that social networks in general could be a new source of psychological stress and trigger exacerbations in depressed asthmatic individuals. Therefore, we suggest that this type of trigger be considered in the assessment of asthma exacerbations.

Our case may not be that rare, especially if we take into account the high prevalence of asthma among adolescents and young adults, the populations most exposed to social networks.

It is now accepted that the stress system coordinates the adaptive responses of the organism to stressors of any kind. Inappropriate responsiveness may account for increased susceptibility to a variety of disorders, including asthma. Strong evidence suggests that the genes involved in the stress and inflammatory response may affect the expression of asthma [26].

The mechanism underlying the triggering effect of a virtual stressor is still speculative. Recent studies emphasize that the effect of stressors is associated with a major risk of developing asthma. The events most associated with onset of asthma were divorce or separation, marital problems, severe illness in a family member, and serious conflicts with a supervisor. The hypothesis explaining this observation is that stressful life events may alter the psychological, immunological, and endocrine systems via mechanisms that are still largely unknown [27].

However, the term psychogenic asthma has been around for some time and has been used for asthma exacerbations that could be triggered by emotional or psychological stress. Animal models and observations in humans recently shed light on the pathogenesis of this effect, as reviewed by Haczku and Panettieri [28]. Interestingly, experimental data suggest that psychosocial stress could be involved in corticosteroid insensitivity, which is linked to a poor response to asthma therapy.

The association between psychological diseases and asthma has been observed in several epidemiological studies, particularly with respect to anxiety and depression [29]. Although a cause-effect relationship has yet to be demonstrated, the above-mentioned advances in the mechanisms of stress-triggered inflammation could support epidemiological findings.

In the context of social networks, a virtual emotional stressor might trigger an asthma exacerbation, especially in an individual with poorly controlled asthma because of a concurrent depressive state, as in the case we reported [25]. In clinical practice, asthmatic patients should undergo a thorough psychological evaluation taking into consideration virtual stressors, especially in younger patients.

The effect of social networks on asthma and on health in general cannot be considered negative tout court. To date, most data suggest that some aspects of social networks might act as psychological triggers for some diseases, including asthma. However, the positive effect of social networks on self-esteem was reported in early studies [22-24] and exemplified by the

case reported here by one of the authors (GD). A 43-year-old lawyer had had atopic dermatitis and allergic bronchial asthma since infancy, with recurrent and sometimes severe attacks. She was treated mainly with high-dose inhaled corticosteroids, antihistaminics, and antileukotrienes, and with oral corticosteroids as needed. She was depressed as a result of her conflictive relationship with her husband, who had had an extramarital affair. The patient created a very appealing Facebook profile with attractive photos aimed at stimulating young people to connect with her. She began a new relationship with a Facebook friend who was divorced, and they decided to live together. Her symptoms of asthma progressively improved, as did her quality of life, and she was able to reduce her dose of inhaled corticosteroids.

The dramatic increase in social network use, especially among adolescents and young adults, is leading health care researchers and professionals to further investigate the effects of this new medium on the general population and on people affected by chronic diseases. At the moment, negative effects, such as those described for asthma, seem to be counterbalanced by increasing evidence of a positive effect on self-esteem. Moreover, from a public health point of view, social networks are already showing potential beneficial effects, both in driving health care system reforms [30] and improving patient networking [31].

Health care providers are therefore invited to monitor possible beneficial and detrimental effects of social network use among healthy people and patients. As the Roman poet Horace wrote: "Est modus in rebus." We must try to find the middle ground in order to optimize the application of social networks.

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