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Mapping non suicidal self-injury in adolescence: Development and confirmatory factor analysis of the Impulse, Self-harm and Suicide Ideation Questionnaire for Adolescents (ISSIQ-A)

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ABSTRACT

Non-suicidal self-injury (NSSI) is the deliberate, self-inflicted destruction of body tissue without suicidal intent and an important clinical phenomenon. Rates of NSSI appear to be disproportionately high in adolescents and young adults, and is a risk factor for suicidal ideation and behavior. The present study reports the psychometric properties of the Impulse, Self-harm and Suicide Ideation Questionnaire for Adolescents (ISSIQ-A), a measure designed to comprehensively assess the impulsivity, NSSI behaviors and suicide ideation. An additional module of this questionnaire assesses the functions of NSSI. Results of Confirmatory Factor Analysis (CFA) of the scale on 1722 youths showed items' suitability and confirmed a model of four different dimensions (Impulse, Self-harm, Risk-behavior and Suicide ideation) with good fit and validity. Further analysis showed that youth's engagement in self-harm may exert two different functions: to create or alleviate emotional states, and to influence social relationships. Our findings contribute to research and assessment on non-suicidal self-injury, suggesting that the ISSIQ-A is a valid and reliable measure to assess impulse, self-harm and suicidal thoughts, in adolescence.

1. Introduction

Adolescence is a developmental stage of profound transformations that may be stressful for the youngster, representing a great challenge in the use of coping strategies and general coping style (Stheneur, 2006; Hasking et al., 2013). Self-harm and suicide are major public health problems in adolescents, with rates of self-harm being highest in the teenage years and suicide being the second most common cause of death in young people worldwide. Borges and Werlang (2006) argued that the changes and conflicts that are normative in adolescence may result in youths resorting to aggressive, impulsive or even suicidal behaviors to cope with their problems. However, systematic research about this phenomenon is still insufficient (Alfonso and Dedrick, 2010), despite recent theoretical and empirical work having significantly advanced in the understanding of this pervasive behavior.

Several studies have shown that self-harming behavior is a significant problem (Madge et al., 2008, 2011) in adolescence, emphasizing the relationship between self-harming behaviors and suicide ideation (Mangnall and Yurkovich, 2008; Andover and Gibb, 2010), and the importance of impulsivity to self-harm (Hawton, 2002; Claes et al., 2010; Madge et al., 2011). Despite a number of studies concerning these issues, the underlying mechanisms to these behaviors are still unclear. As a consequence, awareness about this problem and the proper identification of individuals at-risk is hindered (Madge et al., 2008; Scoliers et al., 2009), constituting also an important obstacle to efficient intervention. Moreover, research concerning the effectiveness of therapeutic protocols, whether in clinical and non-clinical samples is still unexplored.

1.1. Non-suicidal self-injury (NSSI)

Harming oneself without the intention of dying is not a new phenomenon. NSSI behaviors, particularly in adolescence, have received a growing attention in clinical and research settings, but also in popular media (Lloyd-Richardson et al., 2007). The use of multiple terms to describe NSSI, such as "deliberate self-harm (DSH)," "parasuicide," "self-injurious behavior," "self-mutilation," and "self-wounding," in current literature is further complicated by the fact some of these definitions comprise NSSI with and without suicidal intent

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(Mangnall and Yurkovich, 2008). On the other hand, the presence of suicide ideation in individuals who self-harm in those definitions often vary according to the samples that are studied (Madge et al., 2008; Fliege et al., 2009). Nevertheless, a systematic review of previous studies point out to similar rates of DSH and NSSI suggesting that these studies may be comparable and refer to similar phenomena (Muehlenkamp et al., 2012).

Non-suicidal self-injury can be defined as the intentional and direct injuring of one's body tissue without suicidal intent (Herpertz, 1995; Muehlenkamp, 2005; Klonsky, 2007). This kind of behavior is most prevalent among adolescents and young adults, and typically involves cutting or carving the skin, with a consistent presentation across nations (May et al., 2012). Several studies have shown that 13–25% of adolescents and young adults surveyed in schools have some history of self-injury, and similar findings were found in a review by Muehlenkamp et al. (2012). Others studies, including clinical and community-based samples, revealed that self-harm tends to have its onset in adolescence, commonly occurring during the middle to late adolescence (13–15 years old), which reinforces this developmental stage as a period of difficulties in emotional regulation and risk-taking (Moran et al., 2012). Rates of NSSI appear to be disproportionately high in adolescents and young adults (Ross and Heath, 2002; Whitlock et al., 2006): approximately 8% of children ages 12–14 (Hilt et al., 2008), 14–15% of adolescents (Ross and Heath, 2002; Laye-Gindhu and Schonert-Reichl, 2005), and 14–17% of college students (Favazza, 1989; Whitlock et al., 2006) report having self-injured. In adolescent inpatient samples, rates of NSSI appear to be 80% or higher (Nock and Prinstein, 2004). The most frequent presentations of NSSI include cutting the skin (reported by 70% of participants), scratching, burning, ripping or pulling skin or hair, pinching, hitting or breaking bones. Specifically, self-cutting is the most common method referred in Child and Adolescent Self-harm in Europe (CASE) (Madge et al., 2008), and other studies, present in 70–97% of individuals who self-harm (Suyemoto, 1998); followed by hitting oneself (21–44%); pinching, scratching or biting oneself (Ross and Heath, 2002). Other studies have found methods such as puncturing with pins or needles, severe scratching (Gratz, 2001) and burning oneself with cigarettes (Messer and Fremouw, 2008). Regarding body tissues, areas that are more accessible and easy to hide or conceal, such as arms, wrists, legs and belly, are more frequently reported (Nock et al., 2006).

Considering several phenomenological models for self-harm behavior (Suyemoto, 1998; Pelios et al., 1999; Joiner, 2005; Nock et al., 2006; Williams and Bydalek, 2007), individuals who engage in self-harming behavior seem do to it with specific goals, self-harm has a function or a result that is expected (Nock and Prinstein, 2004). Individuals can experience immediate relief, and biological evidence point out to an actual physiological stress reduction occurring after a self-harm episode (Bunclark, 2000). Those individuals experience daily negative emotions more often than individuals who do not self-harm. The negative emotional states and experiences may be the main reason to engage in self-harming behavior, as a way to relieve emotional distress (Fliege et al., 2009). In addition, similar to several psychopathologies and as recently acknowledged as an independent condition in DSM-5, disruptive early attachment and interpersonal relationships in adolescence can act as risk and maintenance factors to NSSI (Skegg, 2005; Gratz, 2006; Fliege et al., 2009), and NSSI may arise as a maladaptive coping mechanism to both disruptive emotional states and experiences (Gilbert et al., 2009; Castilho and Gouveia, 2011; Castilho et al., 2013) and to interpersonal problems.

The functional approach by Nock and Prinstein (2004) proposes that NSSI behavior can be classified and treated according to the functional processes involved in the etiology and maintenance of this problematic behavior. The authors have proposed and assessed a model with four different functions divided in automatic reinforcement and social reinforcement. Automatic reinforcement function can serve the purposes of removing or creating feelings (Brown et al., 2002). It can, therefore, act as negative reinforcements (using NSSI as a strategy to alleviate stress or negative emotional states), which is the most frequent function evoked by people who self-harm ("to stop feeling bad"); or positive reinforcements (self-harm as a strategy to create a desirable physiological state – e.g. "To feel something, even if it is pain"). NSSI can also be used to modify or regulate the social environment. In the negative social reinforcement form, individuals tend to use self-harm to escape interpersonal demands (e.g. Avoiding punishment or avoiding doing something undesirable); in the positive social reinforcement form, individuals tend to gain attention or something from others (e.g. to have attention or having someone react to the individual's behavior, even if negatively) (Nock and Prinstein, 2004). In the study by Nock and Prinstein (2004), the most frequent functions of NSSI endorsed by youths was automatic reinforcement, with most youths using NSSI to regulate (reduce or increase) emotional or physiological experiences.

1.2. NSSI, impulsivity, and risk behaviors

Clinical experience and some prior research suggest that impulsiveness is an important correlate of NSSI (Simeon et al., 1992; Herpertz, 1995; Herpertz et al., 1997). Recent research, found that individuals who engage in NSSI are more likely to engage in other impulsive behaviors, including binge eating, alcohol and/or drug abuse, sexual promiscuity, gambling, and others (Evans and Lacey, 1992; Herpertz et al., 1997). In addition, there is evidence that many self-injurers spend less than 5 min contemplating a self-injurious act (Nock and Prinstein, 2005). Thus, Impulsivity is a factor often referred to as being associated with NSSI (Hawton, 2002; Claes et al., 2010; Madge et al., 2011), with individuals who self-harm reporting more impulsivity than those who do not (Janis and Nock, 2009). Also, Madge et al., 2011, in a study with 30.477 adolescents between 14 and 17 years old have found that the factors that independently differentiate youths with and without history of NSSI is impulsivity, suicidal experiences or self-harm of others, physical or sexual abuse, and problems with sexual orientation. Hasking et al. (2013) provided further evidence of exposure to peers who self-harm being an important risk factor to engagement in such behaviors. Moreover, other studies have found that self-injurers and controls only differ for particular aspects of impulsivity (e.g., Future planning; Herpertz et al., 1997), that impulsivity correlates with the degree of NSSI among self-injurers but fails to distinguish injurers from controls (Simeon et al., 1992), and that impulsivity only distinguishes female, and not male, self-injurers from controls (Hawton, 2002). Recently, Glenn and Klonsky (2010) found that, among self-injurers, lack of perseverance (e.g., Inability to stay on a task until its completion, which is an impulsivity component) predicted recent and frequent NSSI. Despite the many suggestions that self-injurers are impulsive, research on impulsivity in NSSI has yielded mixed results, further stressing the need to investigate the relationship and contribution of impulsive in the pathoplasticity of self-harm.

1.3. NSSI, suicide and risk behaviors

Empirical research has documented consistent and significant associations between NSSI and certain clinical correlates (e.g., Depression, anxiety, and BPD features), and a key issue to be resolved is the relationship between NSSI and suicidal behavior or thoughts.

Some authors refer that suicide attempts in youths are carried through impulsively, although many adolescents experience thoughts and suicidal behaviors without actually acting on them (Barrios et al.,