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Assessing Guilt in Adolescents According to Control-Mastery Theory: Preliminary Validation Data for the Interpersonal Guilt Rating Scale-15 for Adolescents (IGRS-15-ad)

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Abstract

Introduction: The aim of this study is to introduce the Interpersonal Guilt Rating Scale-15 self-report (IGRS-15s) in a sample of adolescents; this scale is a brief self-report tool assessing interpersonal guilt as conceived of in Control-Mastery Theory (CMT; Weiss, 1993), and to assess its psychometric properties.
Methods: The IGRS-15 self-report (IGRS-15-s; Gazzillo et al., 2018) was constructed based on CMT literature on guilt and on the authors' clinical experiences, has already been validated in adult samples and slightly modified for its use with adolescents. The sample of adolescents in this study was composed of 238 high-school students whose ages ranged from 12 to 21 years. In order to verify the factor structure of the tool, we performed a confirmatory factor analysis. We subsequently calculated the validity of the measure with Spearman Rho correlation coefficients between IGRS-15s factors and the other measures: the Interpersonal Guilt Questionnaire-67 (IGQ-67; O'Connor, Berry, Weiss, Bush & Sampson, 1997), the Basic Empathy Scale (BES; Jolliffe & Farrington, 2006), and the Rosenberg' Self-esteem Scale (RSE; Rosenberg, 1965).
Results: The data collected support the internal consistency, as well as the concurrent and discriminant validity of the IGRS-15s for adolescents.
Conclusion: This paper represents a first step toward the validation of the IGRS-15s for the assessment of interpersonal guilt in adolescence and provides clinicians with an empirically validated tool which may support them in their clinical work

Keywords: guilt; adolescence; assessment; Control-Mastery Theory, IGRS-15-ad.

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Introduction

Guilt is a complex emotion associated with tension, regret, and remorse (Tangney, 2012), and it is related to the capacity to understand and empathize with the distress of others, to feel responsible for it, and to the attempt to alleviate it (Howell et al., 2012).

According to a recent paradigmatic change in the conceptualization of the evolution of prosocial and moral emotions (Wilson, et al., 2008; Davidov et al., 2016), guilt plays a vital role in social interactions: it motivates transgressors to make amends and restore damaged relationships (Vaish et al., 2016), reinforces social bonds by inhibiting actions that endanger group relationships, and supports restorative actions among the members of a group, thus allowing the group to survive for longer (Baumeister et al., 1994). Guilt is rooted into the need to maintain attachment relationships, care relationships, and fair and cooperative group bonds (Gazzillo et al., 2019). The extant literature on guilt in adults, however, shows that empathic concern and guilt, when too high or too low, may become maladaptive (Zahn-Waxler & Schoen, 2016) and contribute to psychopathology (Giammarco & Vernon, 2015).

In line with these hypotheses, according to Control-Mastery Theory (CMT; Gazzillo, 2016; Weiss, 1993; Weiss et al., 1986), guilt has an interpersonal and adaptive origin, and is based on the child's need to feel that people around him love him and are happy with him. CMT also stresses that guilt can become dysfunctional when linked to pathogenic beliefs that associate the achievement of personal well-being and the pursuit of healthy, realistic goals, with dangers (such as hurting oneself, loved others or losing the relationship with them). If related to pathogenic beliefs, however, guilt may lead to the development of distress, inhibitions, and symptoms (O'Connor et al., 2012; Gazzillo et al., 2018). According to CMT, interpersonal guilt is mostly unconscious and can be classified into four types: Survivor guilt, Omnipotence guilt, Separation/loyalty guilt, and Self-hate. *Survivor guilt* refers to painful emotions that people may experience when they are surpassing important others, believing that they are hurting them by being more successful, happy, fortunate, etc. *Separation guilt* stems from the fear of harming others by becoming independent, separate beings and by moving away from them, while *disloyalty* guilt stems from the belief that having different values, appreciating a different way of life, and supporting different political ideas or religious beliefs will be hurtful to loved ones. *Omnipotent responsibility* guilt involves an exaggerated sense of responsibility and concern for the happiness and well-being of other people. It is based on the belief that one has the duty and power to save loved ones in trouble. *Self-hate* describes the feeling of being inherently wrong, bad, inadequate, and not deserving of acceptance, protection, love, and happiness, and arises when an individual complies with severely critical, abusive, or neglecting attitudes of important others, often a parent, who felt or showed indifference, hatred, or contempt toward the person. Thus, CMT considers guilt as a consequence of the fear of losing important relationships because of something that the person has done or not done (Separation and disloyalty guilt, Survivor guilt and Omnipotence guilt), or because of how a person believes to be (Self-hate). These two constructs would be similar to the differentiation between altruistic and deontological guilt proposed by Mancini and Gangemi (2015).

Prosocial development and guilt in adolescence

Research on youth shows that guilt becomes increasingly important in the adolescent's adjustment (Carlo et al., 1999).

The adolescent's mental development is characterized by an increasing ability to perform abstract and formal reasoning that leads to a better mastery of meta-cognitive abilities and allows adolescents to attain greater self-consciousness and a better understanding of emotions, including *moral emotions* (Gavazzi et al., 2011; Rest, 1979). As thought becomes more abstract, adolescents are able to judge themselves in comparison to others and may experience guilt if they perceive themselves to have respected a moral rule less well than someone else (Mascolo & Fischer, 1995).

Adolescence has also been identified as a key period in the *development of empathy*. Affective empathy is considered to be the ability to experience and share the emotions of others, whereas cognitive empathy is the capacity to take the perspective and understand the emotions of another person (Decety and Jackson, 2004; Shamay-Tsoory et al., 2009). As suggested by Van der Graaf and colleagues (2018), both the understanding of others' inner states (perspective taking or cognitive empathy) and the experience of concern for others (which is based on affective empathy) are linked to an increase in prosocial behaviors and moral emotions in adolescence. However, high levels of affective empathy (and empathic concern) have been shown to be associated with depressive symptoms in adolescents (Gambin and Sharp, 2018). Several authors have suggested that affective empathy may more often be related to feelings of guilt and responsibility for others' suffering that are non-rational and exaggerated (generalized guilt) since it involves intense emotional distress, but does not necessarily involve a reflection over these emotions, whereas cognitive empathy may more often be associated with situational and appropriate guilt since it involves a reflection and a sense of distance toward both one's own and others' emotions. In general, given that empathy, abstract thinking, maturity demands, and parental expectations increase with age, there are more opportunities for adolescents to experience guilt (Eisenberg et al., 2008).

Overall, research studies on the relationship between guilt and psychological symptoms in adolescents are largely in line with what has been found in adult populations: levels of self-reported guilt that are either too high or too low are linked to psychopathology and, typically, when these are too high maladaptive guilt is strongly associated with affective empathy (Muris, 2015; Muris et al., 2016).

Nevertheless, the assessment of guilt in adolescence remains problematic for two reasons: 1) there are insufficient data on guilt in adolescence (Muris et al., 2016); 2) research studies are often conducted on "mixed" samples of children

and adolescents, as is the case with the validation of the *Inappropriate and Excessive Guilt Scale* (IEGS; Tilghman-Osborne et al., 2012). *The only tool validated on an Italian sample that assesses guilt in adolescence, the Need for Reparation Scale (Caprara et al., 2001), does not conceptualize guilt as it is described by CMT.*

Our group has developed and validated two versions of a tool for assessing guilt according to CMT in an adult population, the Interpersonal Guilt Rating Scale - clinician and self-report - (Gazzillo et al., 2017, 2018). Thanks to the brevity of both versions, IGRS-15 can easily be used with adult patients for both clinical and research purposes leading to a better understanding of people functioning but also to an improving of our way of working in psychotherapy.

The attention to the adolescent population has been increasing in the last decades leading researchers and clinicians to develop specific technics and tools suitable for working with this kind of patients. Consequently, the aim of this paper is to apply the self-report version of the IGRS-15 to an adolescent sample and to assess its psychometric properties.

Hypothesis

Our Hypothesis were:

1) Interpersonal guilt as conceived of in CMT can be assessed in adolescence with the IGRS-15 and, in line with the theory and with the empirical results obtained with the clinician-report version of the IGRS-15, we hypothesize a four-factor solution differentiating survivor, separation/disloyalty, omnipotent responsibility, and self-hate guilt.
2) The IGRS-15 scales/kinds of guilt and the corresponding scales/kinds of guilt assessed with the IGQ-67 will show correlations higher than the correlation between a specific kind of guilt assessed with IGRS-15 and the different kinds of guilt assessed with the IGQ-67.
3) There would be positive and significant correlations between Separation guilt, Survivor guilt, and Omnipotence guilt and Affective Empathy as assessed with the BES. We did not expect to discover any correlation between empathy and self-hate because this last kind of guilt does not derive from empathic concern for others, but from a negative assessment of the self. Furthermore, we did not expect to find correlations between IGRS-15 factors and the BES cognitive empathy scale because CMT types of guilt assessed with the IGRS-15 are based on empathic concern for other people, rather than on a sophisticated cognitive process of perspective taking.
4) There will be a negative and significant correlation between Survivor Guilt and Self-hate and Self-Esteem. We did not expect to identify a correlation between Omnipotence guilt and Self-esteem because this kind of guilt leads people to not separate or to take excessive care of others, thus preventing them from taking care of themselves but this does not necessarily affect self-esteem.

Method

Sample

The sample was composed of 238 adolescents from eight classes in two public high schools from two different Italian cities, L'Aquila and Rome. Their age was between 12 and 21 years (mean 16.16; Sd 1.67), 69.7% were female and 30.3% were male. The data were collected in a three-month period and in person by one of the authors before the COVID-19 emergency.

Measures

Socio-Demographic Schedule for adolescence (Gazzillo et al., 2017). A brief ad hoc self-report tool composed of 10 forced-choice questions aiming to collect data on age, gender, school performance, socioeconomic status, ethnicity, presence/absence of physical or mental health problems and regular use of drugs.

Interpersonal Guilt Questionnaire-67 (IGQ-67; O'Connor et al., 1997). A 67-item self-report to assess interpersonal guilt as conceptualized by CMT in adults: Survivor guilt, Separation guilt, Omnipotent Responsibility guilt, and Self-hate. The sorting of the items into the four subscales was based on a theoretically driven procedure and was not confirmed by factor analysis, which resulted in a two-factor solution: *self-hate* and *altruistic guilt1 (survivor, separation, and omnipotent responsibility guilt)*. All subscale scores are symmetrically distributed, and their Cronbach's alpha values ranged from .82 to .87 in a sample of 111 subjects.

Basic Empathy Scale (BES; Jolliffe & Farrington, 2006; Italian validation by Albiero et al., 2009). The BES has 20 items and comprising two subscales detecting two different components of empathic responsiveness: an Affective Empathy subscale (11 items, α =.86), measuring the emotional congruence with another person's emotions, and a Cognitive Empathy subscale (9 items, α = .74), measuring the ability to understand another person's emotions. A total score is calculated by merging the two subscales (20 items, α = .87).

Rosenberg's Self-esteem Scale (RSE; Rosenberg, 1965), in its Italian version (Prezza et al., 1997). This tool provides a measurement of self-esteem and includes 10 items measured on a 4-point Likert scale. Total scores range from 11 to 40, where higher scores indicate higher levels of self-esteem. The Italian version of the RSE has demonstrated good reliability (Cronbach's α = .84).

Interpersonal Guilt Rating Scale-15 adolescent version (IGRS-15*ad*). This is the empirical tool to be validated in this study; it is a 15-item self-report rating scale assessing interpersonal guilt as conceived of in CMT. Each item is assessed on a 5-point Likert scale ranging from 1 = not representative at all of myself, to 5 = completely representative of myself.

To make the tool more suitable for adolescents, since it is very unlikely that an adolescent lives far from their parents,

[1] The same two-factor solution can also be found in the factor solution of our tool, but we are of the opinion that significant relevant clinical information would be lost.

we have changed item 8 from "*I feel I should visit my parents as often as they wish*" to "*I feel that I should spend time with my parents and siblings as often as they wish*".

Procedure

We performed a confirmatory factor analysis using the *lavaan* package in R (Rosseel, 2012/2017), and we assessed the correlation between IGRS-15ad and the other measures (BES, RSE and IGQ-67) with Spearman Rho correlation coefficients calculated with JASP 0.14.

Results

Table 1 reports descriptive statistics of the IGRS-15 ad.

Tab. 1. Descriptive statistics of the IGRS-15-ad items

Item	Valid	Missing	Mean	SD	Min	Max
Q1	238	0	2.00	1.19	1	5
Q2	236	2	2.29	1.04	1	5
Q3	235	3	2.75	1.03	1	5
Q4	237	1	2.51	1.08	1	5
Q5	238	0	3.46	1.12	1	5
Q6	238	0	2.14	1.3	1	5
Q7	237	1	2.64	1.24	1	5
Q8	237	1	3.12	1.23	1	5
Q9	238	0	2.42	1.06	1	5
Q10	237	1	2.7	1.21	1	5
Q11	238	0	1.85	1.18	1	5
Q12	236	2	2.46	1.23	1	5
Q13	238	0	2.23	1.44	1	5
Q14	238	0	3.62	1.2	1	5
Q15	238	0	2.92	1.18	1	5

Regarding the first hypothesis, to assess the factor structure of the adult, clinician report version of tool, which is in line with CMT hypotheses, we performed a confirmatory factor. Both prior exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) indicated that a four-factor solution was optimal. This model confirms previous research with the clinician-report version of the IGRS-15 in adult samples (Gazzillo et al., 2017), which pointed to four factors: *Survivor Guilt* (items 2, 4, 7, 12, 15); *Omnipotence Responsibility Guilt*: (items 3, 5, 9); *Separation/Disloyalty Guilt* (items 8, 10, 13, 14); and *Self-Hate* (items 1, 6, 11).

Preliminary analysis of the IGRS-15 items, using the R-package, psych (Revelle, 2018), showed that most items demonstrated significant skewness and kurtosis. Further, Mardia's (1970) tests of multivariate skewness and kurtosis were both highly significant ($p < .001$). Therefore, we considered our measurement model to be an ordered-categorical model based on the underlying response variable approach and we employed diagonally weighted least squares (DWLS) and an asymptotic distribution free approach (ADF) solution (Browne, 1984) to estimate and fit the CFA solution.

Table 2 presents the standardized loadings of the items on the four factors. All loadings were statistically significantly different from zero at the .05 level or less. The fit for the 4-factor model was excellent: (χ^2 (84) =99.05, p=.13, CFI= .96, TLI=.98, RMSEA = .030)

Tab. 2. Loadings of the 4-Factor Solution

Factor	Item	Wording	Loading
Separation/ Disloyalty	Q8	I feel that I should spend time with my parents and siblings as often as they wish.	.78
Separation/ Disloyalty	Q10	I should put my parents' wishes ahead of my own.	.86
Separation/ Disloyalty	Q13	I would feel badly if I renounced my family's beliefs, values, and ideals.	.65
Separation/ Disloyalty	Q14	I should not separate from loved ones because this would be hurtful, disloyal, or make them feel abandoned.	.42
Omnipotence	Q3	It is my responsibility to fix other people's problems.	.65
Omnipotence	Q5	I am selfish and uncaring if I am not the person who takes care of other people.	.76
Omnipotence	Q9	I am overly responsible for other people's well-being.	.41
Self-Hate	Q1	If other people really knew me, they would want nothing to do with me.	.84
Self-Hate	Q6	I have tricked other people into liking me.	.89
Self-Hate	Q11	I feel that I do not deserve to be happy.	.82
Survivor	Q2	It is uncomfortable for me to feel better off than other people.	.63
Survivor	Q4	It is uncomfortable for me to become more successful than people who are important to me.	.74
Survivor	Q7	The idea of being envied makes me acutely uncomfortable.	.54
Survivor	Q12	I conceal or minimize my successes out of concern for making less successful people feel bad.	.86
Survivor	Q15	I feel uncomfortable when I receive better treatment than others.	.52

Table 3 presents the Cronbach's alpha and the Jöreskog (1971) congeneric reliability (Dillon-Goldstein rho, composite reliability, and unidimensional omega) coefficients. As can be seen, the internal consistency values of the scales were fair to good.

Tab. 3. Reliabilities of the 4-Factors

Factor	Cronbach's *alpha*	Joreskog's *rho*
Separation/Disloyalty	.70	.82
Omnipotence	.67	.82
Self-Hate	.77	.87
Survivor	.69	.80

As illustrated in Table 4, all the factors (except self-hate) were significantly correlated, in particular Survivor guilt and Omnipotence guilt.

Tab. 4. *Intercorrelations among IGRS-15-ad factors*

Factors	Separation/ Disloyalty	Self-Hate	Omnipotence	Survivor
Separation/ Disloyalty	1.00			
Self-Hate	-.04	1.00		
Omnipotence	.21**	.18**	1.00	
Survivor	.19**	.30***	.41***	1.00

Note: N=238, * p < .05, ** p < .01, *** p < .001

Regarding the second hypothesis, as previously discussed, the placement of the IGQ-67 items in its four scales was based on a theoretically driven procedure rather than on an empirical factor analysis. We performed a CFA on the IGQ-67 factors. The resulting fit was fair to marginal (chi-square =3521, df = 2138, cfi=.84, tli= .84, RMSEA= .06).

However, we decided to assess the convergent and discriminative validity of the IGRS-15ad factor scales with the IGQ-67 factor scales because no other tool exists to accurately assess the different kinds of guilt identified by CMT. According to the approach (Campbell & Fiske, 1959), convergent validity is evidenced when a scale correlates highly with scales with which it was hypothesized to correlate. Discriminant validity is established when a scale does not correlate strongly with scales with which it was not supposed to be correlated. Spearman correlations between the IGQ-67 factor scores and the IGRS-15 factor scores are presented in Table 5. As can be seen in the table, there were positive and significant correlations between guilt factors assessed with IGRS-15-ad and their corresponding factors in the IGQ-67 (average r=.53).

Tab. 5. Correlations among IGRS-15-ad and IGQ67 factor scores

	IGRS-15-ad Factors			
	Separation/ Disloyalty	**Self-Hate**	**Omnipotence**	**Survivor**
IGQ67 Factors				
Separation/ Disloyalty	**.60****	.13	.36**	.14*
Self-Hate	-.01	**.64****	.05	.36**
Omnipotence	.09	.25**	**.40****	.25**
Survivor	.19**	.42**	.27**	**.62****

Note: N=238, * p < .05, ** p < .01

Regarding the third hypothesis, as can be seen in Table 6, there were positive and significant correlations between Separation, Survivor and Omnipotent responsibility guilt and the BES affective empathy scales (Joliffe & Farrington, 2006), and a smaller but still significant positive correlation between Omnipotence guilt and the BES cognitive empathy scale. Also, we found a small negative significant correlation between BES cognitive empathy scale and Self-hate.

The RSE correlated moderately negatively and significantly with Survivor and Omnipotence factors and was strongly negatively and significantly correlated with Self-Hate.

Tab. 6. Correlations between IGRS-15-ad Factors and Other Measures

	IGRS-15-ad			
	Separation/ Disloyalty	**Self-Hate**	**Omnipotence**	**Survivor**
Empathy Measures				
Cognitive Empathy	.03	**-.16***	**.22****	.01
Affective Empathy	**.15***	.03	**.43****	**.25****
Rosenberg Self-Esteem	.09	**- .63****	**-.14***	**-.22****

Note: N=238, * p < .05, ** p < .01

Discussion

The data collected with the IGRS-15ad confirms that interpersonal guilt as conceived of in CMT can be assessed in adolescents, suggesting a factor solution that differs from the factor solution of the adult self-report in which Omnipotent responsibility guilt and Separation/Disloyalty guilt could not be empirically distinguished. However, the structure of the present adolescent tool is similar to the factor structure of the clinician version of the tool. These data suggest that adolescents can better differentiate whether they are afraid of hurting people they love by being separate or different from them, or if they are afraid of hurting them by not taking sufficient care of them. As we observed, for adolescents, becoming more autonomous is crucial, and it is probable that they focus more than adults on this topic.

The data also support the internal consistency as well as the scale's content, concurrent, and discriminant validity of the tool. As we have hypothesized, all the factors were correlated and the IGRS-15 scales/kinds of guilt and the corresponding scales/kinds of guilt assessed with the IGQ-67 showed correlations higher than the correlation between a specific kind of guilt assessed with IGRS-15 and different kinds of guilt assessed with the IGQ-67.

The data stress how guilt, and in particular Self-hate guilt, tends to negatively affect patients' self-esteem and how Survivor guilt and Omnipotence guilt, but not Self-Hate, are correlated with affective empathy, results which are in line with both CMT theoretical assumptions about guilt and the current literature. Omnipotent responsibility guilt also has a moderate significant correlation with cognitive empathy that can be explained with the fact that this kind of guilt involves concerns for other people's problems and difficulties, therefore leading to stronger attempts to understand other people's perspectives. Contrary to our expectations, however, Self-hate negatively correlates with affective empathy, probably because people with self-hate are so absorbed in self-assessment that they may have difficulty in putting themselves in other people's shoes; moreover, Omnipotent responsibility correlates positively with

cognitive empathy and negatively with self-esteem, and we hypothesize that this correlation may be a consequence of the fact that people with this kind of guilt may try as hard as they can to understand the perspective of the other in order to help her/him, and criticize themselves for their inability to make other people feel as happy as they would like them to feel.

The first aim in developing this scale was to offer clinicians an empirical tool which may support them in their clinical work. For this purpose, it is possible to consider the relative strength of each IGRS-15 factor for a specific patient and use it as a "rough guide" to understand and respond to the communications of that patient.

Author Contributions
The authors contributed equally to this manuscript.

Compliance with Ethical Standards
Conflict of interest
The authors declare that they have no competing interests.

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Ethical approval
All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

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