

EXPOSURE TO WORKPLACE BULLYING AND SUICIDAL IDEATION: AN EXPLORATORY STUDY

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ABSTRACT

There is evidence of the effects of exposure to workplace bullying on victims who may manifest symptoms of depression, anxiety, burnout, somatization, sleep difficulties, and posttraumatic stress; however, few studies have examined the impact of workplace bullying on suicidal ideation. The purpose of the present study was to examine the relationship between exposure to workplace bullying and suicidal ideation and how feelings of defeat and entrapment mediate this relationship. Also, it was intended to examine how rumination moderates this relationship. As a framework, it was used the Integrated Motivational-Volitional Model of Suicide Behavior (IMV) in which has been integrated several theoretical models of suicide. A total of 898 employed subjects participated in this cross-sectional design study. To examine the hypotheses, PLS-SEM model was used using the SMART-PLS program. Exposure to workplace bullying, defeat and entrapment were positively and significantly related to suicidal ideation. Meanwhile, feelings of defeat and entrapment mediated the relationship between exposure to workplace bullying and suicidal ideation and rumination moderated the relation between exposure to workplace bullying and feelings defeat. The results of the present study have both theoretical and practical implications, among which we can mention that results support and expand the IMV model of suicidal behavior. The exposure to workplace bullying brings a challenge for the psychologists in the occupational health context, and human resources practitioners in the management of this phenomenon in organizations to prevent it and in a worst case scenario, to respond in an effective manner due to its individual and organizational impact.

Keywords: *Workplace Bullying, Suicidal Ideation, Defeat, Entrapment, Rumination*

INTRODUCTION

Suicide is a serious health and behavioral problem in most countries in the world independently of industrialization or wealth (Otsuka, Nakata, Sakurai, & Kawahito, 2016). Statistics from the World Health Organization (WHO; 2014) indicates that every 40 seconds, an individual commits suicide being the third cause of death in the world. In Puerto Rico, the Commission for the Prevention of Suicide (CPS, 2016) states that every 28 hours a person commits suicide in Puerto Rico; in other words, at least a person suicides every day in Puerto Rico.

According to Gliatto and Rai (1999), most who consider ending their life do not actually attempt to suicide, although suicidal ideation is a key antecedent of it. Given the importance of suicidal ideation in the actual act of suicide, Nielsen, Einarsen, Notalaers, and Nielsen (2016) point out that identification of risk factors for suicidal ideation is important for the development of prevention strategies. In consequence, there are studies suggesting that exposure to workplace bullying is a significant risk factor of suicidal ideation in both cross-sectional (e.g., Balducci, Alfano, & Fraccaroli, 2009; Soares, 2012) and longitudinal studies (e.g., Nielsen et al., 2016; Nielsen, Nielsen, Notalaers, & Einarsen, 2015).

Workplace Bullying Institute (WBI; 2014) statistics suggest that 27% of Americans workers are indeed subjected to WB. Moreover, in a recent national study conducted in Puerto Rico by the Workplace Bullying Alliance (WBA) using the same questionnaire used by the WBI, found that 51.8% of workers have experienced workplace bullying in the last year (WBA, 2015). Given the substantial prevalence of workplace bullying in Puerto Rico and the results of some studies of its effects on psychological health (e.g., depression, anxiety, stress, posttraumatic stress disorder) and physical health (e.g., sleep, physical symptoms complaints, & cardiovascular diseases) of the target of such negative acts (Rosado Vázquez, 2005; Rosario-Hernández & Rovira Millán, 2011; Rosario-Hernández, Rovira Millán, Pons Madera, Rodríguez, & Cordero, 2009; Rosario-Hernández et al., 2013; Rosario-Hernández et al., 2014; Rosario-Hernández et al., 2018), it is possible that workplace bullying is associated to suicidal ideation and behavior. Moreover, workplace bullying is more strongly associated with suicidal ideation than well-known risk factors such as gender, neuroticism, anxiety, somatic complaints, and depersonalization (Sterud, Hem, Lau, & Ekeberg, 2008).

Despite the fact that workplace bullying and suicidal ideation are public health issues, there seems to be a paucity of empirical research testing the strength, direction, and nature of this relationship, as Leach, Poyser, and Butterworth (2017) point out that the impact of the exposure to workplace bullying on suicidal ideation and behavior remains relatively unexplored, in the case of Puerto Rico is non-existent even though the apparent high prevalence of workplace bullying. For example, a teacher who committed suicide in Puerto Rico on October of 2018 let a note alleging that she was a victim of bullying at work and was her reason to do it (Rosario, 2018). Therefore, the purpose of this cross-sectional study was to examine the relationship between the exposure to workplace bullying and suicidal ideation using the Integrated Motivation-Volitional (IMV) model of suicidal behavior (O'Connor, 2011) with a sample of Puerto Rican employees. As part of the IMV model, we tested the mediated effect of defeat and entrapment and the moderated role of rumination in the relation between exposure to workplace bullying and suicidal ideation.

LITERATURE REVIEW

Theoretical framework

According to Leach et al. (2017), the notion of an association between workplace bullying exposure and suicidal ideation is strengthened by conceptual theories describing the contexts in

which suicide is likely to occur. Numerous models of suicidal ideation and behavior have been put forward that have led to important developments in the understanding of the etiology and course of suicidal behavior in the last 30 years (O'Connor, Cleare, Eschle, Wetherall & Kirtley, 2016). Meanwhile, most studies on workplace bullying exposure and suicidal ideation (e.g., Nielsen et al., 2016; Nielsen et al., 2015) have used the Interpersonal Theory of Suicide (ITS). However, O'Connor (2011) incorporated the major components from the predominant models of suicidal behavior into an integrated three-phase model of suicidal behavior, the Integrated Motivational-Volitional (IMV) model of suicidal behavior, which intent to discriminates between suicide ideators and suicide attempters (see figure 1). In order to understand the mechanism in which exposure to workplace bullying may has an effect on suicidal ideation, we will use the IMV model. The IMV model is a three-phase framework that attempts to explain the etiology of suicidal ideation and suicidal behavior. The IMV model of suicide behavior conceptualizes suicide as a behavior rather than a byproduct of mental disorder that develops through pre-motivational, motivational and volitional phases. The pre-motivational phase includes background factors and triggering events, in the case of the current study, we consider exposure to workplace bullying as a triggering event. This pre-motivational phase is important because points out that the IMV model is influenced by the interactive diathesis-environment-life events triad that comprises this phase of the model. In other words, suicidal ideation and behavior occur as a result of the interaction of biological or genetic, conferring a vulnerability that becomes activated or exacerbated in the presence of stress (e.g., exposure to workplace bullying).

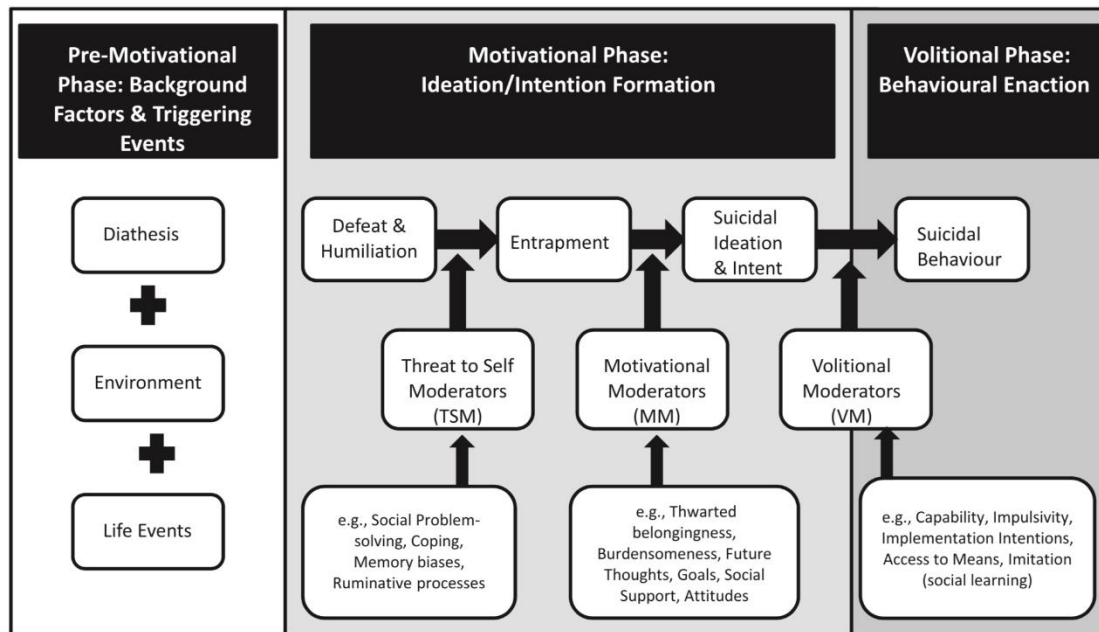


Figure 1. Integrated Motivational-Volitional (IMV) Model of Suicidal Behavior (O'Connor, 2011). Reproduced with permission. Copyrights © 2011, John Wiley and Sons.

On the other hand, the motivational phase includes the suicidal ideation and intention formation. Feelings of defeat can lead to feelings of entrapment and threat to self-moderators, such as rumination, may facilitate the transition of conception of defeat to feelings of entrapment, which can then lead to suicidal ideation and intent (O'Connor, 2011). When an individual feels both defeated and trapped, the likelihood that suicidal ideation will emerge increases when motivational moderators (e.g., rumination) are present.

Meanwhile, the volitional phase describes when suicide attempts are more likely to happen. The IMV model proposes that a group of factors, which are the volitional moderators (e.g., suicide capability), determine the conditions and situations in which a person is at increased risk of suicidal behavior. O'Connor (2011) defines a volitional moderator as any factor that bridges the suicidal ideation-behavior gap, which is any factor that renders it more or less likely that individuals will act on their suicidal attempt (e.g., impulsivity). Thus, volitional moderators are those that are associated with translating ideation/intention into action; in other words, volitional moderators may increase the likelihood of suicide behavior attempt.

Applying the IMV model to the current study, we propose that exposure to workplace bullying triggers feelings of defeat and entrapment that may be exacerbated by ruminative process, which is a threat to self-moderator. These feelings of defeat and entrapment moderated by ruminative process may develop into suicidal ideation (see figure 2).

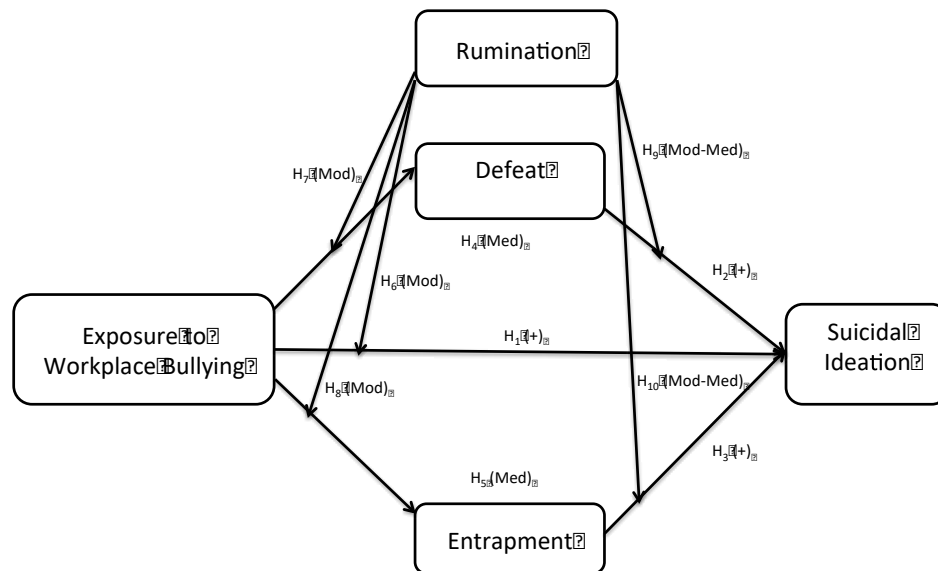


Figure 2. Proposed research model.

Workplace bullying

Workplace bullying is a significant source of social stressor (Hauge, Skogstad, & Einarsen, 2010; Niedl, 1996; Zapf, Knorz, & Kulla, 1996) and it refers to situations in which someone is subjected to long-lasting, recurrent, and serious negative or hostile acts and behavior that are annoying and oppressing (Leymann, 1996; Zapf et al., 1996). According to Einarsen, Hoel, Zapf, & Cooper (2003), the target is exposed to direct or indirect negative acts that may range from the subtlest, even unconscious, incivilities to the most blatant, intentional emotional abuse. The negative acts in question are repeated regularly. Therefore, workplace bullying is not about isolated episodes or events but rather about aggressive behavior that is repeatedly directed toward one or more employees. Moreover, Leymann (1996) has suggested that the targets must be exposed to at least one negative act on a weekly basis and that the duration of the bullying must be a period of six months or longer. Also, workplace bullying is a perceived imbalance of power between the bully and the target. Typically, the target perceives that he/she is incapable of neutralizing or stopping the negative acts to which he or she is being subjected. Thus, workplace bullying develops as an escalating process during the course of which the person confronted ends up in an inferior position and becomes the target of systematic negative social acts.

Suicidal ideation

Although most who consider ending their life do not make actual attempt, suicidal ideation is a key antecedent of suicide (Gliatto & Rai, 1999). Gliatto and Rai indicate that suicidal ideation, also known as suicidal thoughts, can be defined as thinking about or an unusual preoccupation with suicide. The range of suicidal ideation varies greatly from fleeting thoughts, to extensive thoughts, to detailed planning, role playing, and incomplete attempts, which may be deliberately constructed to not complete or to be discovered, or may be fully intended to result in death, but the individual survives (e.g., in the case of a hanging in which the cord breaks).

Suicidal ideation at one point is a known predictor of further suicidal ideation and behavior at a subsequent time points (Reinherz, Tanner, Berger, Beardslee, & Fitzmaurice, 2006; Williams, Crane, Barnhofer, Van der Does, & Segal, 2006). Moreover, suicidal ideation is a highly distressing experience and in some studies it has been associated with a heightened psychopathology (e.g., Reinherz et al., 2006) and is, therefore, in itself a valid target for clinical intervention (Tarrier, Taylor, & Gooding, 2008). The IMV model propose that feelings of being defeated and trapped in circumstances from which one cannot escape results in suicidal ideation (O'Connor, 2011).

Workplace bullying and suicidal ideation

The relationship between exposure to workplace bullying and suicidal ideation was first points out as anecdotal evidence when first consultation were given to victims and it was quite common to find suicidal ideation among bullying victims (Leymman, 1990; Leymman & Gustafsson, 1996). Nevertheless, it took a while to begin researching about the relationship between exposure to workplace bullying and suicidal ideation. Yildirim and Yildirim (2007) conducted one of the first researches with a sample of 505 nurses finding that 87% reported exposure to workplace bullying and 10% reported thinking about suicide. Meanwhile, in another study lead by Yildirim with a sample of academic nursing personnel and found that 91% reported exposure to workplace bullying behaviors and 9% reported thinking about suicide (Yildirim, Yildirim, & Timucin, 2007). While Brousse et al. (2008) performed a study with a sample of 48 targets of workplace bullying in which 25% reported suicidal ideation at baseline and at 12-month follow-up.

Pompili et al. (2008) conducted a study with a sample of 102 targets of workplace bullying and found that 52% had some risk of suicide. In other study, Balducci et al. (2009) indicated that exposure to workplace bullying was also a statistically significant predictor of suicidal ideation and behavior ($\beta = .30, p < .01$) in a sample of 107 workers contacting mental health services related to the exposure to workplace bullying. Nielsen et al. (2015) conducted a longitudinal study with a sample of 1,846 employees from a national registration finding that exposure to workplace bullying was correlated with current and two or five-years suicidal ideation. Also, Nielsen et al. (2016) found that physical intimidation, which is a subscale of the Negative Act Questionnaire, predicted suicidal ideation at time 2 and time 3, after adjusting for covariates. Finally, Lac et al. (2012) conducted the only study in which it was examined the relationship between exposure to workplace bullying and suicide attempt with a sample of 41 targets of workplace bullying finding that 66% reported suicidal ideation and 9% attempted suicide. Thus, the few studies investigating this relationship have found a significant association between workplace bullying and suicidal ideation, and one study had a positive association with suicidal attempt. Therefore, we propose the following hypothesis:

H₁: Exposure to workplace bullying is positively related to suicidal ideation.

Defeat, entrapment, and suicidal ideation

Defeat has been defined as a sense of failed struggle or diminished social rank, while entrapment has been described as a desire to escape coupled with awareness that all escape routes are blocked (Gilbert & Allan, 1998). Both variables were originally developed within the context of social rank theory, which provides an evolutionary perspective on mental health problems (Gilbert & Allan, 1998; Gilbert, Allan, Brough et al., 2002). Theorists have since linked feelings of defeat and entrapment to suicide (e.g., Williams, 1997; Williams, Crane, Barnhofer et al., 2005). As Taylor, Wood, Gooding, and Tarrier (2010) stated, the logic behind such assertions is that within the context of these feelings suicide may come to be seen as the only viable escape route from aversive life circumstances, such as workplace bullying. Defeat is characterized by perceptions of failed struggle related to the loss of status or identity, whereas entrapment describes an overlapping construct characterized by the perceived inability to move forward or escape (Gilbert & Allan, 1998; Taylor, Wood, Gooding, Johnson, & Tarrier, 2009). Defeat and entrapment may lead to suicidal thinking as a possible escape route from these seemingly irreparable and unbearable circumstances (Baumeister, 1990).

Perceptions of defeat and entrapment have been cross-sectional linked with a heightened risk of suicidal ideation and behavior in samples of suicidal students, adolescents, and individuals diagnosed with schizophrenia spectrum disorders (O'Connor, 2003; Park et al., 2010; Rasmussen et al., 2010; Taylor, Wood, Gooding, & Tarrier, 2010; Taylor, Gooding, Wood, Johnson, Pratt, & Tarrier, 2010). In a study performed in Iran and USA by Tarsafi, Mohammad, and Lester (2015), results suggest that only entrapment predicted suicidal ideation ($b = .052$, $p < .05$) on both countries. Meanwhile, Taylor, Gooding, Wood, Johnson, Pratt, and Tarrier (2010), they tested whether perceptions of defeat and entrapment were the psychological mechanisms underlying the link between positive psychotic symptoms and suicidal ideation in a sample of 78 patients with schizophrenia spectrum disorders. It was found that perceptions of defeat and entrapment, conceptualized as a single variable, accounted for a large proportion (31%) of the variance in suicidal ideation and behavior. We propose the following hypotheses:

H₂: Defeat is positively related to suicidal ideation.

H₃: Entrapment is positively related to suicidal ideation.

The mediating role of defeat and entrapment

According to O'Connor (2011), one implication of the IMV model is a mediational pathway whereby negative cognitive appraisals contribute to an overwhelming sense of defeat and entrapment, which in turn drive suicidal ideation and behavior. These negative appraisals may relate, for example, to self-appraisals of personal resources. Within the IMV model, feelings of defeat and entrapment are also considered in the mediational pathway in which they transition to suicidal ideation and intent. For example, Taylor et al. (2010) conducted a study testing a mediational pathway whereby negative appraisals were associated with increased suicidality through heightened feelings of defeat and entrapment. With a sample of 93 university students who reported some degree of suicidal ideation, they found that defeat and entrapment fully mediated the effect of appraisals of social support and problem-solving ability upon suicidality. In another study by Taylor et al. (2010), which tested whether perceptions of defeat and entrapment mediated the relationship between positive symptoms severity and suicidal ideation with a sample of 78 patients with schizophrenia spectrum disorders. It was found that perceptions of defeat and entrapment, conceptualized as a single variable, mediated the relationship between positive symptoms severity on suicidal ideation and behavior. Accordingly, we propose the following hypotheses:

H₄: *Defeat mediates the relation between workplace bullying and suicidal ideation.*

H₅: *Entrapment mediates the relation between workplace bullying and suicidal ideation.*

The moderating role of rumination

Within the IMV model of suicidal behavior identifies threat to self-moderators, which are defined as factors that facilitate the transition of conceptions of defeat and entrapment (Tucker, O'Connor, & Wingate, 2016). These moderating variables include concepts that deplete or enhance the ability to cope with negative life circumstances and intensify feelings of defeat (e.g., ruminative processes) and facilitate the transition from feeling defeated to feeling trapped. Results from a study provides support for the hypothesis that rumination may influence the relationship between conceptions of defeat and entrapment as a relative absence of positive future thinking would likely be necessary for conceptions of entrapment to develop (O'Connor & Williams, 2014). Thus, following the IMV model of suicidality that presumes rumination is a threat to self-moderator variable on the relation between workplace bullying and suicidal ideation having defeat and entrapment as mediators. Therefore, we propose the following hypotheses:

H₆: *Rumination moderates and strengthens the relation between workplace bullying and suicidal ideation.*

H₇: *Rumination moderates and strengthens the relation between workplace bullying and defeat.*

H₈: *Rumination moderates and strengthens the relation between workplace bullying and entrapment.*

H₉: *The indirect effect between workplace bullying and suicidal ideation through defeat is stronger for those high in rumination than those low in rumination.*

H₁₀: *The indirect effect between workplace bullying and suicidal ideation through entrapment is stronger for those high in rumination than those low in rumination.*

METHODOLOGY

Participants

A convenience sample of 898 workers participated in this cross-sectional study. Participants in the study were enrolled from different private and public organizations in Puerto Rico since apparently both sectors are impacted equally as well as other variables such as gender, age, tenure, among others, according to the WBA report (2015). As presented on table 1, the sample of the study was composed of 52.2% (469) females, 75% (673) of the sample was between 21 to 45 years of age, while education mean was 14.39 (3.00), which it is equivalent to an associated degree. In terms of tenure, 76.1% (683) had a permanent one, and 56.9% (511) of the research participants worked for a private organization.

Materials

Background questionnaire. We created a background questionnaire to gather information about the research participants. In this background questionnaire we asked the participants to provide information about their gender, age, tenure, marital status, among others, to enable us to describe the subjects of the study.

Table 1. Socio-demographic information about the sample

Variable	n	%	Variable	n	%
Gender			Type of Organization		
Male	403	44.9	Public-State	288	32.1
Female	469	52.2	Public-Federal	88	9.8
Age (Years)			Private	511	56.9
21-25	108	12.0	Position Type		
26-30	156	17.4	Management	207	23.1
31-35	172	19.2	Non-Management	679	75.6
36-40	120	13.4	Tenure		
41-45	117	13.0	Permanent	683	76.1
46-50	83	9.2	Temporary	199	22.2
51-55	66	7.3			
56-60	41	4.6			
61-65	18	2.0			
≥ 66	14	1.6			
Marital Status				Mean	SD
Single	297	33.1	Education	14.39	3.004
Married	378	42.1	Absences (Last 6 Months)	1.44	3.994
Widowed	29	3.2			
Divorced	103	11.5			

Note: n=898; SD=Standard Deviation.

Workplace bullying. To measure exposure to workplace bullying, we used the Negative Act Questionnaire (NAQ) developed by Einarsen, Raknes, & Matthiesen (1994) and translated into Spanish by Moreno Jiménez, Rodríguez Muñoz, Martínez Gamarra & Gálvez Herrer (2007). A reduced 14 items version of the NAQ was used to assess workplace bullying. This reduced version of the NAQ has only two subscales, which are personal bullying and work-related bullying. This scale reflects typical bullying behaviors, and the participants should respond to what degree they have suffered such behaviors during the last six months, on a 5-point Likert rating scale, ranging from 1 (never) to 5 (daily). After responding to these items, a definition of bullying is presented and participants are requested to indicate whether they consider themselves victims of bullying according to the definition. The scale has shown good reliability and validity in previous studies (Moreno Jiménez et al., 2007; Rosario-Hernández et al., 2018).

Suicidal ideation. To measure suicidal ideation, we used the Work-Related Suicidal Ideation Scale (WRSIS) developed by Rosario-Hernández and Rovira Millán (2017). The WRSIS is composed of nine items, which intent to measures suicidal ideations that are related to work issues. This instrument is in a Likert-frequency response format ranging from 1 (Never) to 6 (Always). An example of an item is: "I feel that my job is so stressful that it makes me think about suicide." Authors report its internal consistency through Cronbach's alpha to be .98, which is an excellent reliability coefficient. Factor analysis results suggest that the WRSIS internal structure is an unidimensional one.

Defeat. We used the Defeat Perception Scale developed by Rosario-Hernández and Rovira Millán (2017). This is a six-items instrument in a Likert-agreement response format ranging from 1 (Totally Disagree) to 6 (Totally Agree), which pretend to measures general feelings of defeat. An item example is: "I feel I live the life of a loser." Authors report its internal consistency through Cronbach's alpha to be .89, which is an excellent reliability coefficient. Factor analysis results suggest that the Defeat Scale internal structure is an unidimensional one.

Entrapment. We used the Entrapment Perception Scale developed by Rosario-Hernández and Rovira Millán (2017). This is a six-items instrument in a Likert-agreement response format ranging from 1 (Totally Disagree) to 6 (Totally Agree), which pretend to measures general feelings of entrapment. An item example is: “I feel like I'm in a hole I cannot get out of.” Authors report its internal consistency through Cronbach's alpha to be .92, which is an excellent reliability coefficient. Factor analysis results suggest that the Entrapment Scale internal structure is an unidimensional one.

Rumination. To measure rumination, we used the Work-Related Rumination Scale (Cropley, Michalianou, Pravettoni, & Millward (2012). The scale is composed of three subscales of five-items each, which are affective rumination, problem solving pondering, and detachment. The response format is a Likert five-point scale ranging from 1 (Very rarely / never) to 5 (Very Often / always), and each subscale produces a total score that can range from 0 to 25. According to the authors, internal structure of the scale has been examined through factor analysis technique, which support the three dimension components. Authors of the scale have reported its reliability via Cronbach's alpha and these coefficients ranged from .81 to .90. In the present study, it was used the affective rumination scale only to identified those high or low in the rumination variable for the multi-group analysis (moderation and moderated mediation analysis).

Procedures

The research proposal was submitted to the Institutional Review Board (IRB) of the Ponce Health Sciences University and it was approved on October 26, 2016 with the protocol number 160913-ER. Participants were contacted from different organizations and were invited to participate in the study. All those who agreed to participate in the study were explained the purpose of the research. They were given the consent form, background data sheet and the study questionnaires. The questionnaires were administered individually as well as in groups by the researchers at the different organizations contacted.

Data analysis

For data analysis, partial least squares structural equation modeling (PLS-SEM) was used following the two step procedure suggested by Hair, Hult, Ringle, and Sarstedt (2017). First, confirmatory factor analysis aimed to assess the measuring model; and secondly, evaluation of the structural model. It is important to mention the three reasons for its use in the present study, as Chin (2010) points out, first, that PLS-SEM has a soft distributional assumption and given that the Kolmogorok-Smirnov and Shapiro-Wilks tests were significant suggesting that scores were not distributed normally. Second, the exploratory nature of the current study (Hair, Ringle, & Sarstedt, 2011; Henseler, Ringle, & Sinkovics, 2009; Henseler & Sarstedt, 2013), which pretend to build and extent an existing theory such as the IMV model of suicide behavior, which is in the early stage as a theoretical development. Third, the high model complexity of the study justifies the use of PLS-SEM because the model tested has multiple mediators and a moderator variable (Hair, et al., 2011; Henseler, et al., 2009; Henseler & Sarstedt, 2013). It is important to mention that a previous study that used SEM as statistical procedure and was testing the IMV of suicide behavior did not include control variables (Dhingra, Boduszek & O'Connor, 2016); therefore, we also did not use control variables in the current study.

RESULTS

The research model of fig. 2 was analyzed using Smart-PLS 3.2.4, a PLS structural equation-modeling tool (Ringle, Wende, & Becker, 2015). It assesses the psychometric properties of the measurement model, and estimates the parameters of the structural model. This tool enables the simultaneous analysis of up to 200 indicator variables, allowing the examination of multiple mediator variables simultaneously among latent predictor variables indicators.

The measurement model

The data indicates that the measures are robust in terms of their internal consistency reliability as indexed by Cronbach's alpha and composite reliability. All the Cronbach's alphas and the composite reliabilities of the different measures range from .90 to .98, which exceed the recommended threshold value of .70 (Hair et al., 2017). In terms of the validity, all outer loadings reached the threshold of .70 as indicated by Hair et al. (2017). In addition, consistent with the guidelines of Fornell and Larcker (1981), the average variance extracted (AVE) for each measure exceeds .50, which is an indication of the convergent validity of the measures. Moreover, the elements in the matrix diagonals, representing the square roots of the AVE, are greater in all cases than the off-diagonal elements in their corresponding row and column, supporting the discriminant validity of the scales (see table 2).

Table 2. Measurement model results

Latent Variable	Matrix Correlation				Item	Outer Loading	AVE	Cronbach's Alpha	CR
	WB	Def	Ent	SI					
Workplace Bullying	(.95)				WB-1	.95	.91	.90	.95
					WB-2	.96			
Defeat	.43	(.85)			Def-2	.81	.72	.90	.93
					Def-3	.78			
					Def-4	.86			
					Def-5	.90			
					Def-6	.89			
Entrapment	.54	.70	(.87)		Ent-1	.92	.75	.93	.95
					Ent-2	.91			
					Ent-3	.92			
					Ent-4	.91			
					Ent-5	.80			
					Ent-6	.71			
Suicidal Ideation	.54	.54	.61	(.93)	SI-6	.90	.86	.98	.98
					SI-7	.95			
					SI-8	.92			
					SI-9	.91			
					SI-10	.94			
					SI-11	.92			
					SI-13	.94			
					SI-14	.94			
					SI-15	.93			

Note: CR=Composite Reliability; AVE=Average Variance Extracted; the elements in the matrix diagonals within parenthesis represent the square roots of the AVE.

Henseler et al. (2015) propose assessing the heterotrait-monotrait ratio (HTMT) of the correlations to also examine discriminant validity. The HTMT approach is an estimate of what the true correlation between two constructs would be, if they were perfectly measure. A correlation between to constructs close to one indicates a lack of discriminant validity. Therefore, Henseler et al. suggest a threshold value of .90 if the path model includes constructs

that are conceptually very similar. In other words, a HTMT above .90 suggest a lack of discriminant validity. Correlations between constructs appear on table 4, all correlations are below the threshold of .90, suggesting the discriminant validity of the measures. Also, since the HTMT can serve as the basic of a statistical discriminant validity test, Henseler et al. (2015) recommend the use of bootstrapping technique to derive a bootstrap with a 95% confidence interval with 5,000 random subsamples. Thus a confidence interval containing the value of one indicates a lack of discriminant validity. Conversely, if the value of one falls outside the interval's range, this suggests that the two constructs are empirically distinct. Since HTMT-based assessment using confidence interval relies on inferential statistics, one should primarily rely on this criterion. In the present study, none of the correlation between the constructs in the bootstrapping 95% confidence interval included the value of one; therefore, this suggests that the constructs are empirically distinct (see table 3).

Table 3. Heterotrait-Monotrait ratio of correlations (HTMT)

Latent Construct	1	2	3	4
1. Workplace Bullying				
2. Defeat	.48 [.34; .52]			
3. Entrapment	.59 [.20; .39]	.75 [.45; .67]		
4. Suicidal Ideation	.57 [.15; .39]	.57 [.05; .34]	.63 [.16; .47]	

Note: Elements in the brackets are the confidence intervals of .90 for the HTMT's criteria correlations.

The structural model

After the measurements were tested for validity, the structural model as provided in Figure 2, which represent the relations among the constructs assumed in the theoretical model or latent variables, was tested (see table 4). In order to examine the structural model and as recommended by Hair et al. (2017), first, we checked the structural model for collinearity issues by examining the variance inflation factor (VIF) value of all sets of predictor constructs in the structural model. They fluctuated between 1.42 and 2.23, all VIF values are clearly below the threshold of 5; therefore, collinearity among predictor constructs is not a critical issue in the structural model (see table 5). Also, table 5 shows the R² values of defeat (.187), entrapment (.291), and suicidal ideation (.460), explaining 18.7%, 29.1%, and 46% of the variance, respectively. Falk and Miller (1992) suggest a value of .10 for an R-squared as minimum satisfactory level, all endogenous latent variables possess the threshold level of R-squared values. Also, all Q² values of defeat, entrapment, and suicidal ideation are above zero (.13, .20, and .36, respectively), providing support of the model's predictive relevance regarding the endogenous latent variables. The effects sizes for workplace bullying achieved f² values of .23, .41, and .10 on defeat, entrapment, and suicidal ideation, respectively, which exceeds the minimum threshold of .02 (Chin, Marcolin, & Newsted, 2003). While effect sizes for defeat and entrapment exceed the minimum threshold on suicidal ideation (.04 & .08, respectively).

Table 4. Structural model results

Construct	R ²	Adj. R ²	f ²			Q ²	VIF
			Def	Ent	SI		
Workplace Bullying			.23	.41	.10		1.422
Defeat (Def)	.187	.187			.04	.13	1.951
Entrapment (Ent)	.291	.290			.08	.38	2.238
Suicidal Ideation (SI)	.460	.456				.36	

Table 5 shows the structural model results and the beta values of all path coefficients are also shown. Exposure to workplace bullying had a positive significant relation to suicidal ideation (beta = .282, $p < .001$). Defeat had a positive significant relation to suicidal ideation (beta = .203, $p < .01$). Entrapment had a positive significant relation to suicidal ideation (beta = .316, $p < .001$).

Table 5. Direct effects hypotheses results and conclusions

Hypothesis	Path	Beta value	SE	t-value	p-value	Confidence Intervals Bias Corrected		Conclusion
						2.50%	97.50%	
H ₁	WB→SI	.282	.061	4.63	.001	.15	.40	Supported
H ₂	Def→SI	.203	.074	2.76	.01	.07	.35	Supported
H ₃	Ent→SI	.316	.083	3.81	.001	.15	.48	Supported

Note: $n=898$.

Defeat and entrapment mediated the relation between exposure to workplace bullying and suicidal ideation. The indirect effects of defeat and entrapment on the relationship between exposure to workplace bullying and suicidal ideation were also positive and significant (.088 & .171, respectively; see table 6).

Table 6. Indirect effect hypotheses results, conclusion, and type of mediation

Hypothesis	Path	Indirect Effect	SE	t value	p value	CI Bias Corrected		Conclusion	Mediation
						2.5%	97.5%		
H ₄	WB→Def→SI	.088	.032	2.73	.006	.029	.158	Supported	Yes (Complementary)
H ₅	WB→Ent→SI	.171	.046	3.67	.001	.081	.264	Supported	Yes (Complementary)

On the other hand, we found that rumination only significantly moderated the relation between workplace bullying and defeat, whereas the path coefficient difference between high and low rumination was .212 (see table 8). Simple slopes were plotted for values of high and low rumination, as shown in Figure 2. Post hoc analyses were conducted to determine whether the slope of each regression line differed significantly from zero. Results of post hoc probing revealed that the simple slopes for low rumination (beta = .1544, 95% CI [-.0819, .2268], $t = 4.18$, $p < .01$), at the mean rumination (beta = .2032, 95% CI [-.1528, .2536], $t = 7.91$, $p < .01$), and high rumination (beta = .2520, 95% CI [-.2073, .2967], $t = 7.78$, $p < .001$) were all significantly different from zero (see figure 3). Thus, exposure to workplace bullying was more strongly related to feelings of defeat under high levels of rumination; those exposed to high levels of workplace bullying were at greatest risk of perceiving feelings of defeat. In terms of the moderated mediation hypotheses, rumination did not significantly moderate the mediational effects of defeat and entrapment on the relationship between workplace bullying and suicidal ideation.

Table 8. Moderation and moderated mediation hypotheses results

Hypothesis	Path Moderated by Rumination	Sample			Path Coefficient Differences (p-value)	Conclusion
		Complete	High Rumination	Low Rumination		
H ₆	WB→SI	.282	.318	.212	.106 (p = .256)	Not Supported
H ₇	WB→Def	.433	.456	.244	.212 (p = .011)	Supported
H ₈	WB→Ent	.540	.553	.363	.190 (p = .080)	Not Supported
H ₉	WB→Def→SI	.203	.252	.044	.211 (p = .109)	Not Supported
H ₁₀	WB→Ent→SI	.316	.264	.422	.156 (p = .802)	Not Supported

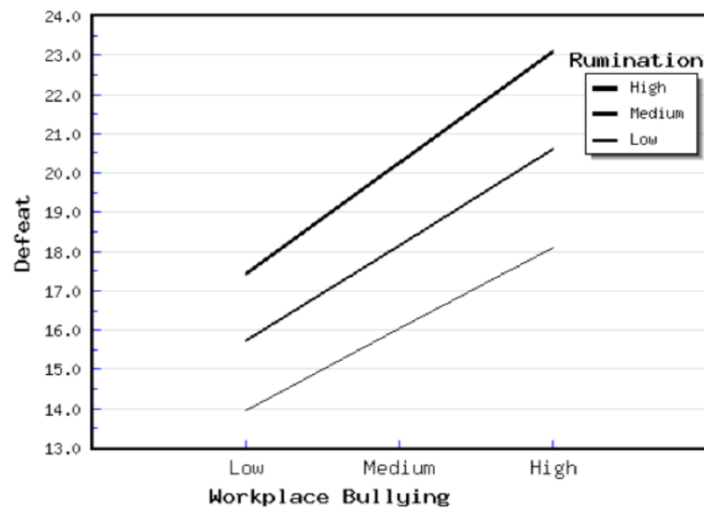


Figure 3. Moderated effect of rumination

DISCUSSION

The aim of this study was to examine the relation between workplace bullying and suicidal ideation and how this relation was mediated by feelings of defeat and entrapment and how rumination moderated these relationships. The results show support to our first hypothesis in which workplace bullying was positively related to suicidal ideation. These results are consonant with the literature (Balducci et al., 2009; Brousse et al., 2008; Lac et al., 2012; Milner et al., 2016; Nielsen et al., 2015; Nielsen et al., 2016; Pompili et al., 2008; Romeo et al., 2013; Soares, 2012; Sterud et al., 2008; Yildirim & Yildirim, 2007; Yildirim et al., 2007) that also found that workplace bullying has an impact on suicidal ideation. Thus, exposure to workplace bullying appears to be a significant risk factor for suicidal ideation, suggesting that the exposure to workplace bullying has such an impact on victims that thoughts about ending their

life may appear as an alternative to cope with this very detrimental social stressor at work. Results also show that defeat and entrapment are related to suicidal ideation, supporting hypotheses 2 and 3. These results are consonant with the literature (e.g., O'Connor, 2003; Park et al., 2010; Rasmussen et al., 2010; Taylor, Wood, Gooding, & Tarrier, 2010; Taylor, Gooding, Wood, Johnson, Pratt, & Tarrier, 2010); moreover, current results are consonant to those of a meta-analysis, which provide evidence for the clinical significance of perceptions of defeat and entrapment in suicidality (Siddaway, Taylor, Wood, & Schulz, 2015). Therefore, clinicians and researchers alike would benefit from becoming more aware of the constructs of defeat and entrapment, specifically to the IMV model of suicidal behavior, which emphasizes the central role of feelings of defeat and entrapment on suicidal ideation (O'Connor, 2011). The examination of these direct effects with regard to suicidal ideation, we can see that among the three exogenous driver construct, entrapment has the strongest direct effect on suicidal ideation followed by workplace bullying and defeat (.316, .282, & .203, respectively).

The analysis supported the hypotheses that the links, which exposure to workplace bullying has with suicidal ideation, would be mediated by feelings of defeat and entrapment. Both, defeat and entrapment, complementarily mediated the relationship between exposure to workplace bullying and suicidal ideation, supporting hypotheses 4 and 5. Taylor et al. (2010) found similar results in which defeat and entrapment mediated the relation between problem-solving and social support on suicidal ideation; while in another study lead by Taylor et al. (2010) found that defeat and entrapment mediated the relationship between positive symptoms severity on suicidal ideation and behavior. This study provides support for the IMV model of suicide behavior (O'Connor, 2011), which postulates that perceptions of defeat and entrapment are key psychological mechanisms promoting suicide ideation and suicidal behavior.

In terms of the hypotheses 6, 7, and 8, we found that rumination only moderated the relationship between exposure to workplace bullying and feelings of defeat, supporting only hypothesis number 7. The results suggest that exposure to workplace bullying was more strongly related to feelings of defeat under high levels of rumination. In other words, those exposed to high levels of workplace bullying were at greatest risk of perceiving feelings of defeat. More specifically, these findings parallel suggestions made by O'Connor (2011) in his IMV model of suicide behavior, proposing that rumination is to be understood as a "threat to self-moderator" that helps translate perceptions of defeat and humiliation appraisals into perceptions of entrapment, resulting in suicide ideation. This may be possible, expanding observations of Tucker et al. (2016), due to the dwelling on the consequences of the exposure to workplace bullying which may leave victims susceptible to ruminate cognitive process about their work situation and thinking about being powerless to change aspect of the self and thus facilitating the transition from the exposure to workplace bullying to feelings of defeat.

Meanwhile, in relation to the moderated mediation hypotheses, feelings of defeat and entrapment did not have indirect effects on suicidal ideation through increased rumination processes as expected. These results indicate that feelings of defeat and entrapment may not increase susceptibility to suicide ideation through ruminative processes. A possible explanation to these results may be that rumination being a threat to self-moderator did not have an effect within the IMV model of suicide behavior because there is other moderators closer to suicidal ideation such as, for example, thwarted belongingness and burdensomeness, which are motivational moderators. Results from a study conducted by O'Connor, Rasmussen, and Hawton (2011) support somehow this notion because they found that motivational phase variables did not distinguish between adolescents who only thought about self-harm and those who actually engaged in self-harm, whereas the volitional phase variables did. Therefore, we think that this rationale might be useful to explain the non-significant results of hypotheses 9 and 10 of the current study.

Limitations and recommendations

The current study has several shortcomings that must be kept in mind when interpreting the results. First, the fact that we used self-reports to measure all the variables, which may increase the risk of common method variance. However, we conducted a common method variance (CMV) analysis using SPSS and the results shown that CMV was only 27.94%, which is well below the threshold of 50% (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). Second, the cross-sectional design of our study does not allow us to conclude in terms of causal relationships. The use of a longitudinal design will offer more information in terms of the impact of workplace bullying on suicidal ideation in a long-term. However, the information obtained from the results of the study gives us an idea of the impact of workplace bullying on suicidal ideation, especially in a Puerto Rican sample. Finally, it is important to keep in mind that variation of suicidal ideation is influenced by numerous work and non-work related social and psychological factors other than bullying. Thus, giving the high prevalence of workplace bullying in Puerto Rico (WBA, 2015), and its apparent impact on suicidal ideation, these other factors (e.g., family and personal conflicts, organizational constraints, job demands, etc.) should be considered in future research to better understand bullying at work and its effect on suicidal ideation.

Theoretical and Practical Implications

There is no precedent in the previous literature of IMV model of suicidal behavior that uses exposure to workplace bullying as a triggering event. Therefore, our study lends support to the theoretical assumptions and adds to a growing body of evidence supporting the IMV model of suicidal behavior (O'Connor, 2011). As a theoretical framework, the IMV model of suicide behavior appears to explain the results of this study given that defeat and entrapment had a direct effect on suicidal ideation and also mediated the relation between exposure to workplace bullying and suicidal ideation. Also, the fact that rumination exacerbated feelings of defeat of those with high and low levels of exposure to workplace bullying, support the IMV model having exposure to workplace bullying as a life event. Moreover, this significant moderation result may extend the IMV model that threat to self-moderators, such as rumination, may play also a role between the pre-motivational and motivational phases, given that in the IMV model threat to self-moderators are supposed to have their moderating effect on the relation between defeat and entrapment.

The findings of this study have a number of practical implications. First, the exposure to workplace bullying has such a detrimental effect on victims that they may consider ending their life as a way of coping; therefore, psychologists should consider as a standard procedure the evaluation of suicide risk of victims. Also, given that feelings of defeat and entrapment have direct and indirect effects on suicidal ideation, psychologists should emphasize the clinical relevance of them as indicators of increased suicide risk. Hence, Taylor et al. (2010) recommend that psychologists should consider investigating these feelings of defeat and entrapment, in addition to more established indicators of suicide ideation such as depression and hopelessness because these feelings sometimes present prior to the manifestation of suicidal ideation allowing them to act as a form of early warning sign, which is established on the IMV model of suicide behavior. Teismann and Forkmann (2015) recommend explicitly asking whether someone feels to be trapped in the current life situation or trapped within himself/herself. For that reason and applying Taylor et al. (2010) recommendation on the exposure to workplace bullying, psychologists should evaluate feelings of defeat and entrapment on exposed victims, at the same time, the evaluation of defeat and entrapment may serve as potential targets for therapy in terms of both the specific underlying cognitions and the more general emotional states associated with suicide risk to which they contribute. Specially, feelings of entrapment since it has been found that entrapment is a potentially modifiable risk factor to predict future suicide attempts (O'Connor & Portzky, 2018). Furthermore, we concur with Teismann and Forkmann

(2015) who recommend addressing rumination as well as perception of entrapment could be a viable target for psychotherapeutic interventions in the prevention of suicide. For example, training in mindfulness has been shown to reduce rumination (Michalak, Hölz, & Teismann, 2011; Ramel, Goldin, Carmona, & McQuaid, 2004) as well as suicide ideation (Forkman, Brakemeier, Teismann, Schramm, & Michalak, 2016; Forkmann et al., 2014).

Directions for Future Studies

In light of current research findings, it is necessary to continue the study of the effects of the exposure to workplace bullying on suicidal ideation, having feelings of defeat and entrapment as mediators and rumination as a moderator on this relationship based on IMV model of suicidal behavior as a theoretical framework. Moreover, it is important to incorporate motivational moderators (e.g., thwarted belongingness, burdensomeness, future thoughts) in future researches because according to O'Connor (2011), these motivational moderators may change the likelihood that entrapment will lead to suicidal ideation and intent. Also, as O'Connor et al. (2016) have indicated, personality and individual differences variables such as perfectionism must be included because it confers a personal vulnerability, which may be triggered by feelings of defeat and entrapment. For example, there are studies that found that trait social perfectionism interacted with daily hassles to predict concurrent suicide potential in a clinical sample of depressed adolescents, which provided support for perfectionism as a vulnerability factor within the pre-motivational diathesis-stress phase of the IMV model (Hewitt, Caelian, Chen, & Flett, 2014). Therefore, inclusion of motivational moderators and vulnerability factors, such as perfectionism, must be considered in future studies. In addition, given that only two studies (Nielsen et al., 2015; Nielsen et al., 2016) used a longitudinal design approach, future studies should consider the use of a longitudinal design to examine the relationship between the exposure to workplace bullying and suicidal ideation through time to see if this relation is sustained and if the exposure to workplace bullying decreases, so its relation to suicidal ideation. Finally, only one study (Lac et al., 2012) related exposure to workplace bullying to suicide attempts, so this may be critical in the future to examine suicide behavior per se and in the way to test the IMV model of suicide behavior through its three phases. Also, a longitudinal research design will allow for the use and testing of volitional moderators, such as impulsivity and suicide capability, because they are supposed to bridge the suicidal ideation-behavior gap and including these volitional moderators might help us to distinguish between suicide attempters and not attempters, which might help us examine the usefulness of the IMV model of suicide behavior as a theoretical framework in this regard. Moreover, the inclusion of such volitional moderators would examine if results obtained in a study by O'Connor et al. (2011) with a sample of adolescents are replicated by working adults exposed to workplace bullying, in which motivational variables did not distinguish between those who only thought about ideators-only and those who actually enacted, whereas the volitional variables did. This will expand the suicidal ideation and behavior research to its main goal, which is to better understand its mechanisms to enable psychologists to predict in order to help treat and prevent suicidal ideation and behaviors.

CONCLUSIONS

Our results suggest that the exposure to workplace bullying seem to have a negative effect on suicidal ideation. Moreover, feelings of defeat and entrapment had a negative impact on suicidal ideation and also, they partially mediated the relation between workplace bullying and suicidal ideation as proposed on the IMV model of suicidal behavior (O'Connor, 2011). Moreover, rumination moderated the relation between the exposure of workplace bullying and feelings of defeat. Giving the results of the present study, psychologists should assess feelings of defeat

and entrapment when working with employees exposed to workplace bullying as a preventive measure to limit its possible influence on suicidal ideation.

REFERENCES

- Balducci, C., Alfano, V., & Fraccaroli, F. (2009). Relationships between mobbing at work and MMPI-2 personality profile, posttraumatic stress symptoms, and suicidal ideation and behavior. *Violence Victims*, 24(1), 52-67.
- Baumeister, R.F. (1990). Suicide as escape from self. *Psychological Review*, 97(1), 90-113. doi: 10.1037/0033-295X.97.1.90
- Brousse, G., Fontana, L., Ouchchane, L., Boisson, C., Gerbaud, L., Bourguet, D., Perrier, A., Schmitt, A., Llorca, P.M., & Chamoux, A. (2008). Psychopathological features of a patient population of targets of workplace bullying. *Occupational Medicine*, 58(2), 122-128. doi: 10.1093/occmed/kqm148
- Chin, W.W. (2010). How to write up and report PLS analyses. In W. Esposito Vinzi, W.W. Chin, J. Henseler, & H. Wang (Eds.), *Handbook of partial least squares: Concepts, methods and applications* (pp. 655-690). London: Springer.
- Chin, W.W., Marcolin, B.L., & Newsted, P.R. (2003). A partial least squares latent variable modeling approach for measuring interaction effects: Results from a Monte Carlo simulation study and voice mail emotion/adoption study. *Information System Research*, 14, 189-217.
- Commission for the Prevention of Suicide (2016). *Estadísticas preliminares de casos de suicidio Puerto Rico, enero – diciembre 2016*. Estado Libre Asociado de Puerto Rico, Departamento de Salud. Retrieved from: <http://www.salud.gov.pr/Estadisticas-Registros-y Publicaciones /Estadisticas%20 Suicidio /Diciembre%202016.pdf>
- Cropley, M., Michalianou, G., Pravettoni, G., & Millward, L. J. (2012). The relation of post-work ruminative thinking with eating behaviour. *Stress and Health*, 28, 23-30. doi:10.1002/smi.1397
- Dhingra, K., Boduszek, D. & O'Connor, R.C. (2016). A structural test of the Integrated Motivational-Volitional model of suicidal behaviour. *Psychiatry Research*, 239, 169-178. doi: 10.1016/j.psychres.2016.03.023
- Einarsen, S., Hoel, H., Zapf, D. & Cooper, C. L. (2003). The concept of bullying at work: The European tradition. In S. Einarsen, H. Hoel, D. Zapf & C. L. Cooper (Eds.), *Bullying and emotional abuse in the workplace: International perspectives in research and practice* (pp.3-30). London: Taylor & Francis.
- Einarsen, S., Raknes, B.I., & Matthiesen, S.B. (1994). Bullying and harassment at work and their relationships to work environment quality: An exploratory study. *European Journal of Work and Organizational Psychology*, 4(4), 381-401. doi: 10.1080/13594329408410497
- Falk, R.F. & Miller, N.B. (1992). *A primer for soft modeling*. Akron, OH: The University of Akron Press.
- Forkmann, T., Brakemeier, E.L., Teismann, T., Schramm, E., & Michalak, J. (2016). The effects of mindfulness-based cognitive therapy and cognitive behavioral analysis system of psychotherapy added to treatment as usual on suicidal ideation in chronic depression: Results of a randomized-clinical trial. *Journal of Affective Disorders*, 200, 51-57. doi: 10.1016/j.jad.2016.01.047
- Forkmann, T., Wichers, M., Geschwind, N., Peeters, F., & van Os, J., Mainz, V., & Collip, D. (2014). The effects of mindfulness-based cognitive therapy on self-reported suicidal ideation: Results of a randomized-clinical trial in patients with residual depressive symptoms. *Comprehensive Psychiatry*, 55(8), 1883-1890. doi:10.1016/j.comppsy.2014.08.043

- Fornell, C. & Larcker, D.F. (1981). Evaluating structural equation models with unobservable variables and measurement Error. *Journal of Marketing Research*, 18(1), 39-50. doi:10.2307/3151312
- Furr, R.M. (2011). *Scale construction and psychometrics for social and personality psychology*. Los Angeles, CA: SAGE Publications.
- Gilbert, P. & Allan, S. (1998). The role of defeat and entrapment (arrested flight) in depression: an exploration of an evolutionary view. *Psychological Medicine*, 28(3), 585-598.
- Gilbert, P., Allan, S., Brough, S., Melley, S., & Miles, J.N. (2002). Relationship of anhedonia and anxiety to social rank, defeat and entrapment. *Journal of Affective Disorders*, 71(1-3), 141-151.
- Gliatto, M.F. & Rai, A.K. (1999). Evaluation and treatment of patients with suicidal ideation. *American Family Physician*, 59(6), 1500-15006.
- Hair, J.F., Hult, G.T.M., Ringle, C.M., & Sarstedt, M. (2017). *A primer on partial least squares structural equation modeling (PLS-SEM)*. Los Angeles: SAGE Publications.
- Hair, J.F., Ringle, C.M., & Sarstedt, M. (2011). PLS-SEM: Indeed a silver bullet. *Journal of Marketing Theory and Practice*, 19(2), 139-151.
- Hauge, L.J., Skogstad, A., & Einarsen, S. (2010). The relative impact of workplace bullying as a social stressor at work. *Scandinavian Journal of Psychology*, 51(5), 426-433. doi: 10.1111/j.1467-9450.2010.00813.x
- Henseler, J., Ringle, C.M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science*, 43, 115-135.
- Henseler, J., Ringle, C.M., Sinkovics, R.R. (2009) The use of partial least squares path modeling in international marketing. In R.R. Sinkovics & P.N. Ghauri (Eds.), *New Challenges to International Marketing (Advances in International Marketing, Volume 20, p. 277-319)*. Bradford, UK: Emerald Group Publishing Limited
- Henseler, J. & Sarstedt, M. (2013). Goodness-of-fit indices for partial least squares path modeling. *Computational Statistics*, 28, 565-580 doi: 10.1007/s00180-012-0317-1
- Hewitt, P.L., Caelian, C.F., Chen, C., & Flett, G.L. (2014). Perfectionism, stress, daily hassles, hopelessness, and suicide potential in depressed psychiatric adolescents. *Journal of Psychopathology and Behavioral Assessment*, 36, 663-674.
- Lac, G., Dutheil, F., Brousse, G., et al. (2012). Saliva DHEAS changes in patients suffering from psychopathological disorders arising from bullying at work. *Brain Cogn*, 80, 277-281.
- Leach, L.S., Poyser, C., & Butterworth, P. (2017). Workplace bullying and the association with suicidal ideation/thoughts and behavior: A systematic review. *Occupational and Environmental Medicine*, 74(1), 72-79. Doi: 10.1136/oemed-2016-103726
- Leymann, H. (1990). Mobbing and psychological terror at workplaces. *Violence and Victims*, 5(2), 119-126.
- Leymann, H. (1996). The content and development of mobbing at work. *European Journal of Work and Organizational Psychology*, 5(2), 165-184. doi:10.1080/13594329608414853
- Leymann, H. & Gustafsson, A. (1996). Mobbing at work and the development of post-traumatic stress disorders. *European Journal of Work and Organizational Psychology*. 5(2), 251-275. Doi:10.1080/13594329608414858
- Michalak, J., Hölz, A., & Teismann, T. (2011). Rumination as a predictor of relapse in mindfulness-based cognitive therapy for depression. *Psychology and Psychotherapy*, 84, 230-236.
- Milner, A.J., Maheen, H., Bismark, M.M., Spittal, M.J. (2016). Suicide by health professionals: a retrospective mortality study in Australia, 2001-2012. *Medical Journal of Australia*, 205(6), 260-265. doi: 10.5694/mja15.01044
- Moreno Jiménez, B., Rodríguez Muñoz, A., Martínez Gamarra, M., & Gálvez Herrera, M. (2007). Assessing workplace bullying: Spanish validation of a reduced version of the Negative Acts Questionnaire. *The Spanish Journal of Psychology*, 10(2), 449-457.

- Niedl, K. (1996). Mobbing and well-being: Economic and personnel development implications. *European Journal of Work and Organizational Psychology*, 5(2), 239-249. doi: 10.1080/13594329608414857
- Nielsen, M.B., Einarsen, S., Notalaers, G. & Nielsen, G.H. (2016). Does exposure to bullying behaviors at the workplace contribute to later suicidal ideation? A three-wave longitudinal study. *Scandinavian Journal of Work, Environment & Health*, 42(3), 246-250. doi:10.5271/sjweh.3554
- Nielsen, M.B., Nielsen, G.H., Notalaers, G. & Einarsen, S. (2015). Workplace bullying and suicidal ideation: A 3-way longitudinal Norwegian study. *American Journal of Public Health*, 105(11), e23-e28. doi: 10.2105/AJPH.2015.302855
- O'Connor, R.C. (2003). Suicidal behavior as a cry of pain: Test of a psychological model. *Archives of Suicide Research*, 7, 297-308. doi: 10.1080/713848941
- O'Connor, R.C. (2011). Towards an integrated motivational-volitional of suicidal behavior. In R.C. O'Connor, S. Platt, & J. Gordon (Eds.), *International handbook of suicide prevention: Research, policy and practice* (pp. 181-198). Chichester, England: Wiley-Blackwell.
- O'Connor, R.C., Cleare, E., Eschle, W., Wetherall, J., & Kirtley, J. (2016). The integrated motivational-volitional model of suicidal behavior: Update. In R.C. O'Connor & O.J. Kirtley (Eds.), *The International Handbook of Suicide Prevention* (p. 220-240). New York: John Wiley & Sons.
- O'Connor, R.C. & Portzky, G. (2018). The relationship between entrapment and suicidal behavior through the lens of the integrated motivational-volitional model of suicidal behavior. *Current Opinion in Psychology*, 22, 12-17. doi: 10.1016/j.copsyc.2017.07.021
- O'Connor, R.C., Rasmussen, S., & Hawton, K. (2012). Distinguishing adolescents who think about self-harm from those who engage in self-harm. *The British Journal of Psychiatry*, 200(4), 330-335. doi: 10.1192/bjp.bp.111.097808
- O'Connor, R. C., & Williams, J. M. G. (2014). The relationship between positive future thinking, brooding, defeat and entrapment. *Personality and Individual Differences*, 70, 29-34. doi: 10.1016/j.paid.2014.06.016
- Otsuka, Y., Nakata, A., Sakurai, K., & Kawahito, J. (2016). Association of Suicidal Ideation with Job Demands and Job Resources: a Large Cross-Sectional Study of Japanese Workers. *International Journal of Behavioral Medicine*, 23(4), 418-426. doi: 10.1007/s12529-016-9534-2
- Park, Y.J., Ryu, H., Han, K., Kwon, J. H., Kim, H. K., Kang, H. C., Yoon, J.W., Cheon, S.H., & Shin, H. (2010). Suicidal ideation in adolescents: An explanatory model using LISREL. *Western Journal of Nursing Research*, 32, 168-184. doi:10.1177/0193945909349115
- Podsakoff, P.M., MacKenzie, S.B., Lee, J.Y., & Podsakoff, N.P. (2003). Common method biases in behavioral research: a critical review of the literature and recommended remedies. *Journal of Applied Psychology* 88(5), 879-903. doi:10.1037/0021-9010.88.5.879
- Pompili, M., Lester, D., Innamorati, M., De Pisa, E., Iliceto, P., Puccinno, M., Fiori Nastro, P., Tatarelli, R., Girardi, P. (2008). *Suicide risk and exposure to mobbing*, *Work*, 31(2), 237-243.
- Ramel, W., Goldin, P.R., Carmona, P.E., & McQuaid, J.R. (2004). The effects of mindfulness mediation on cognitive processes and affect in patients with past depression. *Cognitive Therapy and Research*, 28, 433-455.
- Rasmussen, S.A., Fraser, L., Gotz, M., MacHale, S., Mackie, R., Masterton, G., McConachie, S., & O'Connor, R.C. (2010). Elaborating the cry of pain model of suicidality: Testing a psychological model in a sample of first-time and repeat self-harm patients. *British Journal of Clinical Psychology*, 49(1), 15-30. doi: 10.1348/014466509X415735
- Reinherz, H.Z., Tanner, J.L., Berger, S.R., Beardslee, W.R., & Fitzmaurice, G.M. (2006). Adolescent suicidal ideation as predictive of psychopathology, suicidal behavior, and compromised functioning at age 30. *The American Journal of Psychiatry*, 163(7), 1226-1232. doi:10.1176/appi.ajp.163.7.1226

- Ringle, C.M., Wende, S., & Becker, J-M. (2015). SmartPLS (3.0). Bönningstedt: SmartPLS. Retrieved from <http://www.smartpls.com>
- Romeo, L., Balducci, C., Quintarelli, E., Riolfi, A., Pelizza, L., Serpelloni, A., Tisato, S., & Perpellini, L. (2013). MMPI-2 personality profile and suicidal ideation and behavior in victims of bullying at work: A follow-up study. *Violence and Victims*, 28(6), 1000-1014. doi: 10.1891/0886-6708.VV-D-12-00092
- Rosado Vázquez, J. (2005). Las diferentes estrategias de acoso laboral y sus efectos en los niveles de depresión en una muestra de empleados públicos. *Unpublished doctoral dissertation*. Ponce School of Medicine, Ponce, Puerto Rico.
- Rosario, F. (2018, October 28). Maestra fallecida pedia traslado desde hace un año. Primera Hora. Retrieved from <https://www.primerahora.com/noticias/puerto-rico/nota/maestrafallecidapediatrasladodesdehaceunano-1309301/>
- Rosario-Hernández, E. & Rovira Millán, L.V. (2011). Estudio empírico de las consecuencias psicológicas en una muestra de empleados en Puerto Rico. *Revista Interamericana de Psicología Ocupacional*, 30(2), 183-199.
- Rosario-Hernández, E. & Rovira Millán, L.V. (2017). Development and validation of four self-report measures related to suicidal behavior at work: Work-Related Hopelessness, Defeat, Entrapment, and Suicidal Ideation brief scales. *Unpublished manuscript*.
- Rosario-Hernández, E., Rovira Millán, L.V., Comas Nazario, A.R., Medina Hernández, A., Colón Jiménez, R., Feliciano Rivera, Y., Rodríguez Caballero, B., Hernández Fernández, M., Martínez Julio, F., Díaz Montijo, C., Cabán Valent, L., Ruíz Pacheco, S., Feliciano Toro, B.P., Marrero Díaz, C., & Berrios Quiñones, G. (2018). Workplace bullying and its effect on sleep well-being: The mediating role of rumination. *Puerto Rican Journal of Psychology*, 29(1), 164-186.
- Rosario-Hernández, E., Rovira Millán, L.V., Pons Madera, J.I., Rodríguez, M., & Cordero, A. (2009). Acoso psicológico en el ambiente laboral y el trastorno de estrés postraumático. *Revista Interamericana de Psicología Ocupacional*, 28(2), 138-148.
- Rosario-Hernández, E., Rovira Millán, L.V., Rodríguez Irizarry, A., Velázquez Lugo, A., Rosario Nieves, I. & Zapata Solá, A. (2013). La relación entre la manifestación de conductas laborales contraproducentes, estresores laborales, emociones y acoso psicológico: El efecto moderador de las emociones negativas. *Revista Interamericana de Psicología Ocupacional*, 32 (1), 31-52.
- Rosario-Hernández, E., Rovira Millán, L.V., Rodríguez Irizarry, A., Rivera Alicea, B.E., Fernández López, L.N., López Miranda, R.S., Segarra Colondres, C., Torres Hernández, J.A., Burgos González, M.Z., González Echevarría, A., Ortiz Blanco, M.A., Padilla Santiago, M.A. & Torres García. (2014). La salud cardiovascular y su relación con los factores de riesgo psicosociales en una muestra de personas empleadas en Puerto Rico. *Revista Puertorriqueña de Psicología*, 25(1), 98-116.
- Siddaway, A.P., Taylor, P.J., Wood, A.M., & Schulz, J. (2015). A meta-analysis of perceptions of defeat and entrapment in depression, anxiety problems, posttraumatic stress disorder, and suicidality. *Journal of Affective Disorders*, 184, 149-159. doi: 10.1016/j.jad.2015.05.046
- Soares, A. (2012). When darkness comes: Workplace bullying and suicidal ideation. In N. Tehrani (Ed.), *Workplace bullying: Symptoms and solutions* (p. 67-80). New York: Routledge/Taylor & Francis Press.
- Sterud, T., Hem, E., Lau, B., & Ekeberg, O. (2008). Suidal ideation and suicide attempts in a nationwide sample of operational Norwegian ambulance personnel. *Journal of Occupational Health*, 50, 406-414. doi: 10.1539/joh.L8025
- Tarrier, N., Taylor, K., & Gooding, P. (2008). Cognitive-behavioral interventions to reduce suicide behavior: a systematic review and meta-analysis. *Behavior Modification*, 32(1), 77-108.

- Taylor, P.J., Gooding, P.A., Wood, A.M., Johnson, J., Pratt, D., & Tarrier, N. (2010). Defeat and entrapment in schizophrenia: the relationship with suicidal ideation and positive psychotic symptoms. *Psychiatry Research*, 178(2), 244-248. doi: 10.1016/j.psychres.2009.10.015
- Taylor, P.J., Wood, A.M., Gooding, P., Johnson, J., & Tarrier, N. (2010). Are defeat and entrapment best defined as a single construct? *Personality and Individual Differences*, 47(7), 795-797. doi: 10.1016/j.paid.2009.06.011
- Taylor, P.J., Wood, A.M., Gooding, P., & Tarrier, N. (2010). Appraisals and suicidality: The mediating role of defeat and entrapment. *Archives of Suicide Research*, 14(3), 236-247. doi: 10.1080/13811118.2010.494138
- Teismann, T. & Forkmann, T. (2015). Rumination, entrapment and suicide ideation: A mediational model. *Clinical Psychology and Psychotherapy*, 24(1), 226-234. doi: 10.1002/cpp.1999
- Tucker, R.P., O'Connor, R.C., & Wingate, L.R. (2016). An investigation of the relationship between rumination styles, hope, and suicide ideation through the lens of the integrated motivational-volitional model of suicide behavior. *Archives of Suicide Research*, 20(4), 539-552. doi: 10.1080/13811118.2016.1158682
- Williams, J.M.G. (1997). Cry of pain. Harmondsworth, UK: Penguin.
- Williams, J. M. G., Barnhofer, T., Crane, C., & Beck, A. T. (2005). Problem solving deteriorates following mood challenge in formerly depressed patients with a history of suicidal ideation. *Journal of Abnormal Psychology*, 114(3), 421-431. doi:10.1037/0021-843X.114.3.421
- Williams, J.M.G., Crane, C., Barnhofer, T., Van der Does, A.J.W., & Segal, Z.V. (2006). Recurrence of suicidal ideation across depressive episodes. *Journal of Affective Disorders*, 91(2-3), 189-194.
- Workplace Bullying Alliance. (May, 2015). 1st National Education Survey about workplace bullying in Puerto Rico. *Conference presented at the "2nd Educational Discussion on Workplace Bullying"*, Turabo University, Gurabo, Puerto Rico.
- Workplace Bullying Institute (2014). US workplace bullying survey. Retrieved on July 25, 2014 from <http://workplacebullying.org/multi/pdf/WBI-2014-US-Survey.pdf>
- World Health Organization (2014). Preventing suicide: A global imperative. Retrived on May 9, 2015 from: http://apps.who.int/iris/bitstream/10665/131056/1/9789241564779_eng.pdf
- Yildirim, A. & Yildirim, D. (2007). Mobbing in the workplace by peers and managers: mobbing experienced by nurses working in healthcare facilities in Turkey and its effect on nurses. *Journal of Clinical Nursing*, 16(8), 1444-1453. doi:10.1111/j.1365-2702.2006.01814.x
- Yildirim, D., Yildirim, A., & Timucin, A. (2007). Mobbing behaviors encountered by nurse teaching staff. *Nursing Ethics*, 14(4), 447-463. doi: 10.1177/0969733007077879
- Zapf, D., Knorz, C. y Kulla, M. (1996). On the relationship between mobbing factors, and job content, social work environment, and health outcomes. *European Journal of Work and Organizational Psychology*, 5 (2), 215-237.

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