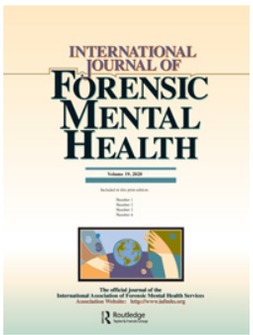

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Do Prisoners Mentalize Differently? Investigating Attachment and Reflective Functioning in a Sample of Incarcerated Lebanese Men

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ABSTRACT

Insecure attachment and deficits in mentalizing have been consistently found to be correlated with increased delinquency, conduct disorder and antisocial behaviors. This has been explained by a distancing from the other's needs and feelings or by an incapacity to consider the effects of one's behaviors on others. The current study is the first to investigate the association between attachment and mentalizing in a sample of 172 incarcerated Lebanese men, between the ages of 19 and 65, looking for predictors of regret towards the crime committed. Results suggested a significant correlation between insecure attachment and lower mentalizing capacities in our sample. Furthermore, deficits in mentalization, more specifically hypomentalizing strategies, were found to predict a lack of regret towards the crime committed. Findings are discussed within the attachment and mentalization framework, considering cross-cultural influences, guiding future intervention and prevention programs within Lebanese prisons and at-risk groups.

KEYWORDS

Prison; reflective functioning; attachment; Lebanon; mentalizing

Emotional processes have only recently been integrated in criminological theories (Giordano, Schroeder, & Cernkovich, 2007). Warr (2016) focused on the importance of feelings of regret and remorse in understanding the severity of offending, the risk and rate of reoffending as well as in the desistance from crime. However, less is known about predictors of regret, such as empathy and emotion regulation, and their interaction with antisocial and delinquent behaviors.

Empathy and aggressive behaviors

Empathy can be understood as a multidimensional construct, including both a cognitive and an emotional component (Davis, 1980). The cognitive component, referring to the ability to put oneself in the other's shoes and take into account his/her perspective, can be compared to mentalization (Premack & Woodruff, 1978). Fonagy and his colleagues defined mentalizing capacities as one's understanding of mental states underlying behaviors (Fonagy, Steele, Steele, Moran, & Higgitt, 1991). The emotional component of empathy includes one's emotional reaction to the other's feelings (Mehrabian & Epstein, 1972; Eisenberg & Miller, 1987). In sum, empathy focuses on understanding the other and feeling with them whereas mentalizing is more interpersonal; it relates to how others' feelings are affecting us, and how in turn, this can modify our response to them (Choi-Kain & Gunderson, 2008; Fan et al., 2011).

Empathy has been found to be modestly negatively correlated to aggression and acting out (Miller & Eisenberg, 1988), with a higher effect size for cognitive rather than emotional empathy (Jolliffe & Farrington, 2004; Van Langen, Wissink, Van Vugt, Van der Stouwe, & Stams, 2014). However, another meta-analysis failed to replicate these findings, suggesting that empathy predicted only 1% of the variance in aggression, whether verbal or physical. One of the explanations of this result suggested an overestimation of the role of empathy. Knowing what the other is feeling, or vicariously experiencing feelings, would not necessarily entail prosocial behaviors (Vachon, Lynam, & Johnson, 2014). It can therefore be argued that related constructs, such as emotion dysregulation or low mentalizing capacities could better explain aggressive behaviors. In fact, these constructs were found to further contribute to difficulties in emotion regulation

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within interpersonal contexts (Lowenstein, Purvis, & Rose, 2016), which, in turn, were found to precipitate anger (Fisher & Hall, 2011).

The role of attachment and mentalizing in understanding violence

Attachment theory, which focuses on the quality of the early parent-infant caregiving relationship, provides a framework explaining the development of conduct disorder in childhood and later antisocial behaviors in adulthood (Levinson & Fonagy, 2004). Children whose parents are not emotionally available tend to develop an insecure attachment style (avoidant), in which one feels distant from any social institution/norm, becoming more likely to get involved in conduct problem behaviors, and thus acting against societal rules (Fonagy, 1999; Lorenzini & Fonagy, 2013). This type of attachment is characterized by a distorted image of the self, low self-esteem, and a difficulty in regulating affect, especially in highly emotional situations, expressing a discordance between behavior and its underlying feeling (Fonagy, 1999). Within samples of incarcerated men, a handful of studies converge in finding a high prevalence of insecure attachment (Frodi, Dernevik, Sepa, Philipson, & Bragesjo, 2001; Hansen, Waage, Eid, Johnsen, & Hart, 2011; Levinson & Fonagy, 2004, Van Ijzendorrn et al., 1997).

Reflective Functioning (RF) is the operationalization of mentalization as manifested in attachment-related interactions and narratives, with the hallmark of reflectiveness encompassing not only the ability to recognize mental states in the self and others but also the capacity to be aware of the interaction between them (Allen, 2008; Allen & Fonagy, 2006; Fonagy et al., 1991; Fonagy, Target, Steele, & Steele, 1998; Grienenberger, Kelly, & Slade, 2005; Slade, 2005). In other words, RF measures one's ability to think about what might be going on in one's own mind, the mind of the other, and the interaction between the two, in an attempt to understand both behavioral and affective reactions. Mentalizing capacities have been theorized to develop within the context of a secure attachment relationship as it provides the necessary safety for the child to experiment and make sense of the world, with the help of the mother or the primary caretaker, mirroring and giving meaning to experiences (Fonagy et al., 1991, 1998; Slade, 2005).

Given that insecure attachment is characterized by unstable relationships and difficulties in emotion regulation, it can be argued that insecurely attached people are more vulnerable to anger and impulsivity; this is especially relevant when facing interpersonal difficulties that trigger insecure attachment behaviors, such as avoidance and lack of thinking about emotions (Lowenstein et al., 2016). It is therefore not surprising that studies looking at RF in a population of men showing antisocial and delinquent behaviors found deficits in mentalizing (Levinson & Fonagy, 2004; Moller, Falkenstorm, Holmqvist, Larsson, & Holmqvist, 2014; Newbury-Helps, 2011; Newbury-Helps, Feigenbaum, & Fonagy, 2017). These findings echo Allen, Fonagy and Bateman's (2008) assumption that "mind-blindness", defined as a temporary inhibition of mentalizing capacities, constitutes a crucial risk factor for acting upon one's impulses in an aggressive or violent manner.

Fonagy and colleagues further described mechanisms elucidating the relationship between mentalizing strategies and aggressive behaviors (Fonagy, 2003; Fonagy & Target, 1997; Fonagy & Bateman, 2007). Fonagy (1999) explained that "Not being able to feel themselves from within, [insecurely attached and low mentalizing people] are forced to experience the self from without" (p. 112). In other words, false or absent parental mirroring of affect in childhood leads to the development of a false sense of self, colored by parents' own history of insecure attachment. The child therefore internalizes an unreal empty self that is disconnected from reality (Slade, 2005). Later in life, this translates into a constant search for the true self in the outside world, by sometimes manipulating people, in an attempt to experience emotions through them. If this act of manipulation fails, the individual acts out and thus experiences the self from without (Fonagy & Target, 2006).

Narcissism, mentalizing and offending

Another line of research explaining violent and antisocial behaviors focused on the role of narcissism in demoting mentalizing and promoting potential offending. Understanding the relationship between narcissism and empathy requires differentiating between empathy's two components, as studies converge in finding that people suffering from Narcissistic Personality Disorder (NPD) tend to have impaired emotional empathy but intact cognitive empathy. In other words, narcissistic traits do not impact one's ability to understand what the other is feeling but impede one's capacity to "feel with the other" (Blair, 2005; Dolan & Fullam, 2004; Golberg et al., 2007; Richell et al., 2003; Ritter et al., 2011). Based on self-report questionnaires measuring the motivation to be empathic, Ritter et al. (2011) concluded that people suffering from NPD tend

to underestimate their cognitive empathy and overestimate their competence in affective empathy, reflecting delusions of grandiosity as cited in the Diagnostic and Statistical Manual of Mental Disorders, 5th edition (DSM-5; American Psychiatric Association, 2013).

Brennan and Shaver (1998) conducted one of the first studies investigating the relationship between attachment styles and personality disorders in a sample of 1407 adolescents and young adults in the United States, concluding that securely attached participants were the least likely to be diagnosed with a personality disorder. Honing in on participants suffering from NPD, they were most likely to be classified as fearful, followed by secure, preoccupied (anxious) and finally dismissive (avoidant). Fonagy and his colleagues accounted for these findings by theorizing that in the case of the emergence of a narcissistic personality, parental affect mirroring was likely to be present during childhood, albeit incongruent with the child's actual feelings (Fonagy, Gergely, Jurist, & Target, 2002; Kernberg, 1998). This leads to the internalization of an erroneous mental representation of one's feelings, creating a gap between reality and the internal constitutional states of the child, colored by feelings of emptiness. Bateman and Fonagy (2004) further suggested that, in order to fill the gap and restore coherence to one's sense of self, the child is likely to use manipulative and controlling strategies, similar to those apparent in antisocial behaviors.

In terms of mentalizing, it can be hypothesized that patients suffering from NPD tend not to mentalize as a way to retain a sense of self, rendering them more vulnerable to becoming violent (Bushman & Baumeister, 1998; Hart & Joubert, 1996; McCann & Biaggio, 1989; Papps & O'Caroll, 1998). Vospernik (2014) explained that narcissists tend to act in ways that maintain a positive self-image, even if it impedes others' feelings or wishes. This was also supported by a qualitative analysis of psychotherapy sessions with Italian patients suffering from NPD (Dimaggio et al., 2007). Findings highlighted that these patients verbalized the de-activation of mentalizing capacities during negative emotionally-loaded situations, as a means to protect themselves from others who were perceived as distrustful and capable of harming them (Dimaggio et al., 2007). It can be posited that people with narcissistic disorders or narcissistic traits tend to ignore and reject affect relating to attachment relationships and focus more on what they are rationally thinking rather than what they are feeling (Bowlby, 1969; Ryle & Kerr, 2002). More specifically, they are unable to access memories and feelings that are not aimed at supporting the grandiose image they have of themselves (Dimaggio et al., 2007, 2002), thus reflecting metacognitive malfunctioning.

In the only study to date investigating the relationship between attachment, RF and adaptive narcissism in a British normative sample, Vospernik (2014) found that high scores on narcissism predicted attachment anxiety but not avoidance, and were weakly associated with RF impairments. This was accounted for by the high scores on attachment anxiety in the sample, which could reflect participants' tendency to think in terms of worst-case-scenarios and considering others as threats to the self, which thus negatively affects their RF capacities. The author further suggested that participants scoring high on narcissistic traits tend to manipulate others which likely reflects a hindrance of mentalization, promoting the use of other defenses such as acting out on impulses (Vospernik, 2014).

Looking at narcissism in people who have been arrested or exhibit violent behaviors, the literature comes together in highlighting high narcissistic traits in this population (Baumeister, Bushman, & Campbell, 2000; Warren et al., 2002). Narcissism, alongside low levels of empathy, significantly increases the risk of violence (Lowenstein et al., 2016). It has been theorized that aggression and violence, sometimes leading to crime, could be used by the narcissistic person as a way to defend against external threats to his view of himself (Baumeister et al., 2000). In other words, feelings of entitlement recognized as maladaptive in narcissism, alongside a lack of empathy, tend to be predictors of possibilities of offending and being in prison (Barry, Frick, Adler, & Grafeman, 2007; Campbell & Foster, 2007; Hepper, Hart, Meek, Cisek, & Sedikides, 2014).

Subjective factors, regret and reoffending risks

Other factors have also been identified in predicting the possibility of offending and re-offending. Zamble and Quinsey (1997) reported converging findings regarding the effects of static factors, such as demographic data and criminal history, on recidivism; however, less is known about dynamic factors, including subjective changes such as cognitions and perceptions of experiences, affecting interpretations of events (Giordano, Cernkovich, & Rudolph, 2002; Lebel, Burnett, Maruna, & Bushway, 2008). Subjective factors also include callous-unemotional (CU) traits, including lack of remorse/regret and shallow emotions (Caputo, Frick, & Brodsky, 1999; Kahn, Byrd, & Pardini, 2013; Kruh, Frick, & Clements, 2005; Vincent, Vitacco, Grisso, & Corrado, 2003), which have been prominent in

conceptualizations of psychopathy, as factors increasing the risk of aggressive behaviors (Edens, Campbell, & Weir, 2007; Hare, 1999; Leistico, Salekin, DeCoster, & Rogers, 2008; Pardini & Fite, 2010). Using a self-report measure of CU traits in an adult incarcerated sample, Kahn et al. (2013) identified the unique role of these traits in predicting future offense, even after controlling for confounding variables such as offending history or socio-economic status. More specifically, men scoring higher on the CU self-report measure had greater numbers of arrests and more serious offenses. This is in line with more recent findings that lack of remorse is related to an increased likelihood of arrest over a 7-year period (Piquero, 2017).

Warr (2016) focused more specifically on the effect regret has on the choice to commit or not to commit a crime. He affirmed that regret is an important component in understanding desistance of crime as it involves the recognition of one's responsibility towards the act committed (Camille et al., 2004; Lazare, 2004), as well as the effect it might have on others; as such, regret may mimic the effects of self-punishment (Warr, 2016). As Coricelli, Dolan, and Sirigu (2007) stated, "Regret embodies the painful lesson that things would have been better under a different choice, thus inducing a disposition to behavioral change" (p. 258). This conceptualization of regret implies that its consequences can only be fully felt after the offense (Warr, 2016), thus differentiating it from mentalizing, which includes an anticipatory and self-regulating mechanism before acting (Levinson & Fonagy, 2004). It can be argued that the anticipation of regret, in relation to offending and possibility of re-offending, could be a sub-part of mentalizing capacities.

This exploratory cross-sectional study aims to investigate attachment and reflective functioning in a sample of Lebanese incarcerated men. We expected to find a) a positive correlation between high mentalizing and similar measures such as empathy and emotion regulation, and a negative correlation between high mentalizing and attachment avoidance and anxiety, b) a negative correlation between high mentalizing and high narcissism. Given the importance of regret in predicting the possibility and severity of reoffending, the final aim was to explore whether mentalizing, attachment and narcissism scores relate to whether or not one regretted the crime committed.

Method

Sample

The sample initially consisted of 250 Lebanese incarcerated men, but 78 booklets that had more than half of the answers of any questionnaire missing were removed. Thus, the final sample was constituted of 172 Lebanese incarcerated men, aged between 19 and 65 ($M = 33.68$, $SD = 10.19$), 68% of which were in prison for the first time. On average, participants have spent 5.22 years in prison ($SD = 5.39$). Thirty-four per cent were first-borns. Forty-five per cent of our sample was raised in the city and 27% in more rural areas. Almost half of the men were single (47%) and 45% were married. Fifty-five per cent of participants had a grade 12 diploma or higher. Thirty-seven percent were Christians while 57% were Muslims. Regarding their last monthly income, 33% earned less than the minimum wage (450 USD/month). A question regarding felony type was included in the demographic form; however, 66% of the participants did not answer, leading to disregarding this question in the analyses.

Setting

The Middle East has been described as a region where family is seen as a unit, using authoritarian strategies to ensure harmony in the collective identity (Al-Shqerat & Al-Masri, 2001; Dwairy & Achoui, 2006; Qasem, Mustafa, Kazem, & Shah, 1998). However, globalization in some areas has entailed changes within these systems, with countries such as Lebanon being described as culturally heterogeneous, rendering generalization of findings more complex (Dwairy & Achoui, 2006; Hallaq, 2001). Factors affecting the extent of effects of westernization include religion, socio-economic status and whether one was reared in urban or rural areas. Schmid and Riachy (2003) compared Lebanon to a cultural mosaic, describing it as "a country of 18 communities grouped into two large religious entities, Christian and Muslim, each one enjoying legislative and judiciary autonomy in the matter of personal status" (p. 105).

Noteworthy is a short discussion of the prison system in Lebanon, governed "by military-style security force untrained and unqualified to work and interact with incarcerated persons" (Nashabe, 2003, p. 96) who can be re-assigned to another security position at any time (Fayyad, 1999). The general condition of life in prison has been described as unfavorable, with overcrowding, low hygiene, and poor nutrition and health (Nashabe, 2003). Furthermore, the aim of incarceration has been to isolate offenders rather than rehabilitate them (Nashabe, 2003). Investigating the prevalence of mental illness within the main Lebanese prison, Catharsis (2015) highlighted the need for an initial screening at the time of incarceration, as well

as regular screening throughout sentencing to ensure the development of appropriate interventions, as many inmates suffering from psychiatric disorders are left without treatment. It is crucial to note the difficulty of collecting data from incarcerated populations in Lebanon as researchers do not have a computerized database, nor access to health records. The only way to gather this information is through direct interview or with questionnaires from the prisoners.

Procedure

Conditional IRB approval was first received, which was then agreed upon by the Director General of the Internal Security Forces (ISF) who granted us approval to collect data from the central Lebanese prison for men. The researchers asked the ISF and inmates volunteering with a non-governmental organization (NGO) inside the prison for their help with recruitment. They were requested to describe the study to any inmate presenting at the NGO office inside the prison, asking about their willingness to participate. It was made clear, verbally and later in the written informed consent, that their participation would not affect their sentence nor their treatment in any way. The researchers then introduced themselves to consenting inmates, and booklets were administered in groups of 10, with one of the researchers, a graduate student, present to answer any questions participants might have, ensuring confidentiality and anonymity of the booklets. The researcher reiterated that participants had the right to leave and withdraw from the study at any time, highlighting that there would be no negative repercussions to their sentence, treatment nor safety in prison. At all times, the PI or the corresponding author of this paper were present on site to coordinate and intervene in case of adverse reactions. Both researchers mentioned above are certified clinical psychologists and psychotherapists and have extensive experience working in prisons.

Measures

The *Reflective Functioning Questionnaire* (RFQ; Fonagy et al., 2016) is a self-report measure of the individual's capacity to mentalize themselves and others. It includes 54 items rated on a 7-point scale, ranging from 1 (strongly disagree) to 7 (strongly agree). Respondents are asked about these capacities in thinking about or making sense of their own and others' cognitive and emotional experiences. Scores are divided based on two subscales, the Certainty about Mental States (RFQc) and the Uncertainty about Mental States (RFQu). Scores at the lower end of the RFQc reflect hypermentalizing while scores at the higher end of RFQu reflect hypomentalizing. The RFQ-54 has been shown to have good internal reliability (Cronbach's $\alpha = .82$) and convergent construct validity, correlating positively with measures of allied (but not equivalent) constructs, such as mindfulness, $r = .40$, $p < .001$, and cognitive empathy, $r = .48$, $p < .001$ (Moulton-Perkins, Rogoff, Fonagy, & Luyten, 2011). The RFQ authors suggest that this measure is best suited for populations with severe impairments or imbalances in mentalizing such as patients with borderline or antisocial personality disorders (Luyten, Malcorps, Fonagy, & Ensink, 2019). The Arabic RFQ has been validated with a normative Lebanese sample demonstrating a Cronbach's $\alpha = .88$ for the Certainty subscale and Cronbach's $\alpha = .79$ for the Uncertainty subscale (Abi-Habib et al., in prep). In this sample, the Certainty and Uncertainty subscales were found to have Cronbach's $\alpha = .81$ and Cronbach's $\alpha = .84$ respectively.

The *Narcissistic Personality Inventory – 16 items* (NPI-16; Ames, Rose, & Anderson, 2006) is a short measure of subclinical, adaptive narcissism with an internal reliability of $\alpha = .72$ and a test-retest reliability of $r = .85$, $p < .01$ over a 5-week period in a normative sample (Ames et al., 2006). It correlates with the longer version of this test, NPI-40, at $r = .90$ ($p < .001$). It can serve as an alternative measure of narcissism to be used when situations do not allow the use of longer inventories. Participants are asked to choose one option from a pair of statements, one of which reflects narcissism. Answers are then summed up to compute a total narcissism score (Ames et al., 2006). This measure has been previously used with offenders (Ray, Weir, Poythress, & Rickelm, 2011) and incarcerated populations (Cale & Lilienfeld, 2006). The validation of the Arabic NPI was conducted through a collaboration between the UK and UAE with internal reliability coefficients of $\alpha = .82$ for the overall NPI in a normative sample (Lyons, Morgan, Thomas, & Al Hashmi, 2013). In this sample, we used the overall NPI score with a Cronbach's $\alpha = .59$.

The *Experiences in Close Relationships – Revised* (ECR-R; Fraley, Waller, & Brennan, 2000) is a self-report assessing attachment anxiety and attachment avoidance, specifically in relation to the general experience of emotional intimate relationships. It includes 36 items each rated on a 7-point scale, ranging from 1 (strongly disagree) to 7 (strongly agree). The anxiety (18 items) and avoidance (18 items) subscales have demonstrated high internal reliabilities

($\alpha = .95$ & $\alpha = .93$, respectively; Sibley & Liu, 2004). This measure has been used to assess attachment in a prison context (Gawda & Czubak, in press; Gonzalez-Mendez, Jimenez-Ardila, & Ramirez-Santana, 2019; McGauran, Brooks, & Khan, 2019). The Arabic ECR-R has been validated in the Lebanese context (Hijazi, 2004) showing high internal consistencies for the anxious and avoidant dimensions of the Arabic ECR-R-32 ($\alpha = .84$ & $\alpha = .86$, respectively), and an intercorrelation of $r = .26$, $p < .01$, in a normative undergraduate student sample. In this sample, the ECR-R questions were asked twice: once about participants' relationship with their mother, and once about that with their father. The anxiety and avoidance subscales showed good internal consistencies with Cronbach's $\alpha = .76$ and Cronbach's $\alpha = .78$ respectively for attachment to mother and Cronbach's $\alpha = .80$ and Cronbach's $\alpha = .77$ respectively for attachment to father.

The *Interpersonal Reactivity Index* (IRI; Davis, 1980) is a 28-item questionnaire measuring empathy. Items are answered on a 5-point Likert scale ranging from 1 (does not describe me well) to 5 (described me very well) and can be grouped into 4 subscales, 2 of which were included in the analyses: Perspective Taking (the tendency to spontaneously adopt the psychological point of view of others, 7 items) and Empathic Concern (assessing "other-oriented" feelings of sympathy and concern for unfortunate others, 7 items). This measure has been widely used with incarcerated populations (Beven, O'Brien-Malone, & Hall, 2004; Goldstein & Higgins-D'Alessandro, 2001; Lauterback & Hosser, 2007). The Arabic version of the IRI was validated by Merkin and Ramadan (2016) in an undergraduate student sample, with Cronbach's $\alpha = .58$ and Cronbach's $\alpha = .33$ respectively for the Perspective Taking and Empathic Concern subscales in this sample.

The *Emotion Regulation Questionnaire* (ERQ; Gross & John, 2003) is a 10-item scale measuring respondents' tendency to regulate their emotions, with items rated on a 7-point Likert scale, ranging from 1 (strongly disagree) to 7 (strongly agree). Scores are divided into 2 subscales, each representing an emotion regulation strategy: Cognitive Reappraisal (reframing the interpretation of an event before the complete activation of the emotion response system, 6 items) and Expressive Suppression (concealing the manifestations of an emotion, 4 items). The ERQ has been previously used with prison populations (Brazão, Rijo, Salvador, & Pinto-Gouveia, 2018) and offenders (Gillespie, Garofalo, & Velotti, 2018). The Arabic ERQ has also been validated in the Lebanese context in a university sample (Merhi & Kazarian, 2015) showing moderate internal consistencies for the cognitive reappraisal and emotional suppression subscales ($\alpha = .66$ & $\alpha = .62$, respectively), and $\alpha = .77$ & $\alpha = .37$ respectively in our sample.

The demographics questionnaire included categorical yes/no questions inquiring whether participants regretted having committed the offense (as a measure of regret), have a history of psychiatric illness ("have you ever been diagnosed with a psychiatric disorder?") and chronic illness ("do you suffer from any chronic illnesses?"). A question regarding the crime committed was also part of the demographics questionnaire. There were no exclusion criteria.

Statistical analysis

Correlational analyses were carried out to explore possible relationships between Reflective Functioning (measured based on two subscales RFQc and RFQu) and other related constructs such as empathy (measured through Perspective Taking and Empathic Concern scores), emotion regulation strategies (including Cognitive Reappraisal and Expressive Suppression), and attachment anxiety and avoidance to each parent (hypothesis 1) and between RF and narcissism (hypothesis 2). Additionally, to investigate the predictors of regret for committing a crime, binomial logistic regression models were carried out, exploring whether the two RF subscales independently, and then in addition to narcissism as well as attachment anxiety and avoidance to each of mother and father, predicted regret for committing a crime. In these regression models, the binary dependent variable "regret for committing a crime" was coded as (0= No regret, 1= Regret).

Results

Descriptive statistics of the measures were run and compared with normative data from validation studies conducted in Lebanon (Table 1). Results highlighted high levels of Uncertainty about Mental States (RFQu) with $M = 20.65$, $SD = 12.81$ and high attachment avoidance scores on the ECR-R with $M = 3.79$, $SD = 0.85$ for mother and $M = 3.81$, $SD = 0.89$ for father. The demographics questionnaire revealed that 68% of participants did feel regret towards the crime committed, 88% had never been diagnosed with a psychiatric disorder and 80% reported that they do not suffer from any chronic illnesses. Regarding the type of crime committed, 66% of participants did not

Table 1. Descriptive statistics of measures.

	Present sample		Normative sample from other studies in Lebanon and the Arab region		
Measure	Mean	SD	Mean	SD	Authors
RFQ certainty about mental states (RFQc)	24.09	12.38	28.34	14.81	Abi-Habib et al., in prep
RFQ uncertainty about mental states (RFQu)	20.65	12.81	12.64	9.00	
ECR-R mother anxiety	3.18	0.96	3.53	1.01	Hijazi (2004), Kazarian
ECR-R father anxiety	3.30	1.02	3.93	N/A	and Taher (2012)
ECR-R mother avoidance	3.79	0.85	2.81	0.99	
ECR-R father avoidance	3.81	0.89	2.48	N/A	
NPI	0.47	0.17	N/A	N/A	N/A
IRI empathic concern (EC)	3.28	0.60	3.16	0.48	Atoui (2015);
			4.00	0.68	Merkin and Ramadan (2016)
IRI perspective taking (PT)	3.44	0.68	2.95	0.63	
ERQ cognitive appraisal (CA)	3.91	1.32	4.20	0.96	Merhi and Kazarian (2015)
ERQ expressive suppression (ES)	4.10	1.62	2.38	0.79	

Table 2. Correlations between RF, ECR-R, ERQ and IRI.

		RFQc	RFQu
ECR-R avoidance	Mother	r(164) = −.29**	r(164) = .46**
	Father	r(159) = −.17*	r(159) = .29**
ECR-R anxiety	Mother	r(164) = −.35**	r(164) = .01
	Father	r(166) = −.27**	r(166) = −.08
ERQ cognitive appraisal		r(163) = −.30**	r(163) = .43**
ERQ expressive suppression		r(163) = −.19**	r(163) = .48**
IRI perspective taking		r(162) = .06	r(162) = .10
IRI empathic concern		r(162) = .03	r(162) = −.16*

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

answer this question leading to disregarding this information in the analyses.

Before running the analyses, we searched for a potential influence of demographic factors (age, hometown, marital status, number of children, level of education, last income, religion, number of times in prison and total time spent in prison) on the variables studied; however, none of these factors were found to be significant. We also investigated whether a history of psychiatric illness or chronic physical pain had any effects on the variables studied. There was a weak significant positive relationship between chronic physical pain and ERQ Cognitive Reappraisal, $r = .19$, $p = .02$. This variable was thus controlled for in subsequent analyses.

The first hypothesis pinpointed a positive correlation between high mentalizing and similar measures such as empathy and emotion regulation, and a negative correlation between high mentalizing and attachment avoidance and anxiety. Correlations between the two RFQ subscales and empathy, measured by the Perspective Taking and Empathic Concern subscales of the Interpersonal Reactivity Index (IRI), revealed a significant correlation between RFQu and Empathic Concern solely, with $r(162) = -.16$, $p = .04$. Correlations between RFQ subscale scores and the two emotion regulation strategy scores, Cognitive Appraisal and Expressive Suppression, revealed weak to moderate significant correlations between $r(163) = -.30$, $p < .001$ and $r(163) = .48$, $p < .001$ (Table 2).

The correlation between RF capacities and attachment (ECR-R), was significant in the case of attachment avoidance, with $r(159) = -.17$ and $r(164) = -.29$ for RFQc and attachment avoidance to father and mother respectively and similarly for RFQu, with $r(159) = .29$ and $r(164) = .46$. Correlations were found between RFQc, but not RFQu, and attachment anxiety with $r(166) = -.27$ and $r(164) = -.35$ for father and mother respectively (Table 2). Furthermore, attachment anxiety was found to be significantly but weakly negatively correlated with the IRI Perspective Taking (PT) subscale, with $r(158) = -.21$, $p = .01$ for mother and $r(159) = -.26$, $p = .01$ for father.

Second, we expected to find a negative correlation between high mentalizing and high narcissism. No significant correlations were found between RF and Narcissistic Personality Inventory (NPI) adaptive narcissism scores with $r(166) = -.01$, $p = .98$ for RFQc and $r(166) = .05$, $p = .52$ for RFQu. We therefore divided NPI-16 scores into 2 groups, based on whether scores are concerning and reflected a potential sign of Narcissistic Personality Disorder (n = 8) or not (n = 160), based on cutoff scores provided by the authors of the measure (i.e., scores greater than or equal to 30 on the NPI-40 and those greater than or equal to 12 on the NPI-16 are considered as high on narcissism; Ames et al., 2006). Independent sample t-tests were run to search for differences in RF scores between the two groups; however, no significant differences were found.

The last aim of this study was to investigate factors affecting regret felt in relation to the crime committed. For this purpose, a logistic regression was performed to ascertain the effects of the two subscales of reflective functioning on the likelihood that participants felt regret for committing their crimes. The logistic regression model was statistically significant, χ^2 (2) = 7.53, $p = .02$, explaining 6.1% (Nagelkerke R^2) of the variance

in regret for committing crime and correctly classifying 68.8% of the cases. A significant unique contribution was made by RFQu showing that incarcerated men were more likely to regret their offense if they scored high on RFQu with $B = .55$, $p = .01$. For every unit increase in RFQu, the odds of regret increase by a factor of 1.72. Another multinomial regression was run including both subscales of RFQ, ECR-R avoidance and anxiety scores to both parents and NPI scores as predictors of regret, in which case these variables were not found to improve the fit between the model and the data, χ^2 (7) = 7.26, $p = .40$.

Discussion

This study was the first to explore mentalizing capacities, narcissism, and attachment security in a sample of Lebanese incarcerated men. Initial analyses revealed the use of hypomentalizing strategies (high levels of Uncertainty about Mental States) in the incarcerated population as compared to normative Lebanese data (Abi-Habib et al., in prep; see Table 1), as well as high levels of attachment avoidance and expressive suppression, which is in line with previous studies conducted in Western countries (Frodi et al., 2001; Hansen et al., 2011; Levinson & Fonagy, 2004; Van IJzendoorn et al., 1997). Hypomentalizing strategies could reflect one's dismissal of the importance of interpersonal relationships based on a fear of closeness with the other, especially in times of separation, illness, or hurt (Armsden & Greenberg, 1987; George et al., 1985; Main, Kaplan & Cassidy, 1985; Fraley et al., 2000), thus leading to lower RF scores due to an inability to ascribe mental states underlying one's own and others' behaviors (Fonagy & Target, 1997). This, in addition to high expressive suppression, echoes the literature highlighting failures to mentalize in offenders (Levinson & Fonagy, 2004; Lowenstein et al., 2016; Newbury-Helps, 2011).

Attachment, mentalizing and related constructs

Examining the relationship between mentalizing and attachment more closely, attachment avoidance, but not anxiety, was significant in explaining both RF subscales: the more avoidant the offenders are to parents, the lesser their capacity to think about the other's mental states and how they affect behaviors, with higher correlations between attachment avoidance and hypomentalizing. The association between dismissive attachment and low mentalizing has also been identified in non-clinical UK samples, referring to a tendency to push away any attempt at closeness and emotion regulation (Fonagy et al., 1991). In this case, one integrates these strategies in their model of their mind and that of others, providing a template for future interpersonal styles based on low mentalizing and distancing. In other words, insecure attachment could lead to an inability to regulate emotions and feel with the other as one tends to dismiss those feelings. This is also relevant in understanding violent and antisocial behaviors as dismissing attachment and low mentalizing have been identified to be more prevalent in incarcerated men when compared to normative samples, which could therefore be seen as disinhibiting impulses and violent behaviors, thus increasing the likelihood of committing an offense (Lorenzini & Fonagy, 2013). In fact, attachment avoidance can lead to mind-blindness, enabling one to distance himself from the victim, and thus inhibiting mentalizing and facilitating acting on one's impulses (Allen et al., 2008; Levinson & Fonagy, 2004).

Another hypothesis could be set forth in explaining high levels of hypomentalizing in this population. Taking into account the non-significant correlation between RFQu and empathy, it can be argued that incarcerated men have the capacity to acknowledge the potential effect of committing a crime but distance themselves from their own feelings at the same time (Fonagy et al., 2016). In fact, Bateman and Fonagy (2008) postulated that people suffering from Antisocial Personality Disorder tend to have lower mentalizing capacities about themselves while being able to read the mind of others in order to deceive or exploit them. This misuse of mentalizing facilitates acting upon one's impulses, even if it meant breaking the law. This concrete pre-mentalizing strategy could also lead to rationalization of the crime committed through self-entitlement and the justification that there was no other alternative (McGauley et al., 2011).

Investigating the role of attachment anxiety, it was only found to be moderately positively correlated to hypermentalizing (RFQc) and played a role in decreasing perspective taking, both of which were not significantly correlated with the RFQu scale. This echoes Vospernik's (2014) finding that attachment anxiety entails thinking in terms of interpersonal worst-case scenarios, putting one in a constant state of alert that the other is a threat to their narcissistic view of the self. This, in turn, can lead to manipulating others, as a way to maintain one's positive self-image and protect against attachment anxiety. This act of manipulation reflects failures in mentalizing, pushing individuals not to question others' motives

and beliefs. It can be argued that the preoccupation with one's own anxiety could partly interfere with the capacity to think of the other, thus rendering one more vulnerable to committing violent behaviors if a threat is perceived (Fisher & Hall, 2011; Lowenstein et al., 2016). This argument is supported by the moderate significant associations between low RF and low emotion regulation strategies in our sample.

Gross and John (1998) described two main emotion regulation strategies. On the one hand, cognitive reappraisal, described as an antecedent strategy, entails modifying the interpretation of the event before the complete activation of the emotion response system, allowing for a lesser experience of negative emotions. The expressive suppression strategy, on the other hand, reflects low emotion regulation paired with inhibition of emotion-expressive behaviors after the occurrence of an emotionally-loaded event. In our sample, lack of mentalizing was associated with both emotion regulation strategies, with the highest correlations being with hypomentalizing, which reflects strategies of distancing oneself from negative emotions. In sum, it can be argued that the less the incarcerated men understand the interaction between their own and others' feelings, the less they are able to access cognitive resources allowing them to perceive an emotionally-loaded situation in terms of its effects on the self and other (cognitive reappraisal) and react to it afterwards (expressive suppression). This has been hypothesized to increase one's vulnerability to anger and impulsivity within insecure, unstable attachment relationships, leading to more action-based coping strategies (Badoud et al., 2015; Lowenstein et al., 2016).

Attachment, mentalizing and narcissism

At odds with the literature finding a correlation between deficits in RF and Narcissistic Personality Disorder (NPD) in Western samples, our results failed to support the hypothesis correlating RF capacities, attachment, and narcissistic traits. This could be explained in one of two ways. First, it could be argued that the significant correlation reported in the literature was based on participants diagnosed with NPD (Brennan & Shaver, 1998; Dimaggio et al., 2002; 2007), whereas the sample in the present study scored averagely on a scale assessing narcissistic traits, therefore not necessarily meeting the threshold for a NPD diagnosis. In fact, when the sample was divided into concerning and average NPI scores, only 8 participants met the criteria of concerning scores, thus being at risk of fitting the criteria of NPD. On the other hand, studies based on self-report questionnaires reporting a significant correlation between narcissism and violent behaviors have found that the former only added to the influence of the lack of empathy to explain these behaviors (Barry et al., 2007; Hepper et al., 2014; Lowenstein et al., 2016). This is more in line with our findings highlighting the role of empathy, in our model, albeit weak, measured by the perspective taking and empathic concern subscales.

Second, from a cross-cultural point of view, it can be hypothesized that the moderate narcissism scores could reflect collectivistic thinking which devalues this type of behavior as harmful to collective harmony (Foster, Campbell, & Twenge, 2003; Ghorbani, Watson, Krauss, Bing, & Davison, 2004). We propose further research investigating narcissistic traits in the general Lebanese population in order to better understand its relationship to potential violent behavior or crime. It could be posited that antisocial and criminal behaviors could be partly understood including other factors, such as supporting and providing for one's family and putting others' needs first. This is a prominent characteristic of collectivistic thought which counters narcissistic behaviors.

Predictors of regret towards the crime committed

Our final aim was to look for predictors of regret. Warr (2016) emphasized the role of regret and remorse in feeling responsible for harming others, thus leading to a desistance from crime or reoffending. Given the role of mentalizing in facilitating feeling with the other and perspective taking, we expected that RF and empathy would be predictors of regret towards the crime committed. When the two RF subscales (Certainty and Uncertainty about mental states) were included in the model, hypomentalizing (high Uncertainty scores), referring to one's inability to infer intentions, was found to be the only predictor of lack of regret towards the crime committed. This could be explained by its significant correlation with low empathic concern for others which sheds light as to why these men would not feel any regret.

Recalling Coricelli et al.'s (2007) idea that regret entails a realization that a different choice would have yielded different, more positive outcomes, it can be argued that mentalizing facilitates this type of thinking, focusing on the interaction between self and other. They however noted that this feeling can only occur after an offense was committed (Coricelli et al., 2007; Warr, 2016); we therefore argue that increasing mentalizing capacities might allow the person to think

about consequences of their actions internally, without necessarily acting upon these impulses, as part of emotion regulation (Fonagy et al., 2016).

Limitations

This study is unique in that it is the first investigating mentalizing, attachment, and narcissism in a sample of incarcerated Lebanese men; however, results should be interpreted in light of some limitations. First, data collection was carried out based on convenient sampling, asking participants who would be willing to participate to fill out the booklets, which begs the question of a possible sampling bias. Second, we were unable to account for the type of crime committed as two-thirds (66%) of the sample did not answer this question and we could not access the participants' official files due to confidentiality concerns. Future studies should investigate the effect of this variable on RF and attachment in order to better understand its association with levels of regret within incarcerated populations, and whether RF has a predictive role on the type of crime committed. In addition, given that this study was the first to explore mentalizing in a sample of incarcerated men, no exclusion criteria were selected; however it would be important for future studies to investigate the effect of a history of mental health or chronic physical illness and the total time spent in prison on mentalizing capacities. Third, the Interpersonal Reactivity Index (IRI) and one subscale of the Emotion Regulation Questionnaire (ERQ) had low psychometric properties in our sample which entails a careful analysis of the results pertaining to empathy and emotional suppression in our sample. Lastly, initial aims focused on the importance of RF and attachment as predictors of criminal offense without focusing on the effect of regret which was measured as a categorical yes or no question. However, our findings suggested the importance of this factor within the model.

It would be interesting in future studies to measure regret and remorse as part of callous unemotional traits scored on self-report questionnaires providing a continuous assessment of these variables. This would shed light on the association between CU traits, attachment, and RF looking at their independent or interdependent roles in predicting prisoners' perceptions of offending and potential future re-offense. In addition, screening for personality disorders would benefit the understanding of the relationship between RF, attachment, and perception of the offense.

Despite not being significant in our model, it would also be of interest to get a more representative sample in terms of the length of time spent in prison and SES factors in an attempt to untangle how these variables affect the relationship between RF, attachment, and regret as well as prisoners outlook on the future in terms of re-offending, taking into account the type of crime committed. In fact, past studies have highlighted the importance of the man's perception of his role as a family provider in regret towards the crime committed and possibility of re-offense (Lebel et al., 2008). More specifically, it would be crucial to integrate the overall socio-economic framework of the incarcerated participant (information we did not analyze due to missing data) as insecure attachment and poverty alone were not found to directly predict crimes (De Wolff & Van Izjendoorn, 1997; Diener et al., 2003; Van IJzendoorn et al., 1997). Longitudinal studies in high-risk populations are necessary in trying to pinpoint the interaction between risk and protective factors leading to potentially committing an offense.

Clinical implications

Our findings underscored that low mentalizing capacities in incarcerated Lebanese men correlated with markers of insecure attachment. This is in line with the Western literature showing a higher prevalence of insecure attachment and low mentalizing in incarcerated population. This has also been found to be true in low SES samples whereby one's emphasis is on survival rather than understanding the mind of the other, in which case mentalizing is offline.

Findings emphasizing the role of hypomentalizing on the level of regret felt towards the crime committed provide a basis in guiding future intervention programs within Lebanese prisons. These should focus on increasing mentalizing capacities, as well as reducing avoidance strategies, based on providing alternative conflict resolution strategies where only one solution is entertained. Mentalization-based interventions could be applied to help incarcerated men lean towards more complex ways of understanding the mind, helping them realize what might have been going on for them at the time of the offense, promoting empathy towards the other; they may also allow them to entertain other solutions to the problem. This entails moving away from concrete deterministic thinking of "there is no other way" towards acknowledging more complex solutions, despite the need for more effortful control on their part. These interventions have been found to be effective in reducing antisocial behavior in previous studies (Bateman et al., 2016) and could be used to reduce the possibility of repeated offense in Lebanon.

A key finding relates to the roles of regret and the offender's capacity to express remorse in decreasing the risk for future offense. As suggested by Tangney and colleagues (Tangney, Stuewig, & Hafez, 2011), interventions should also focus on acknowledging responsibility and possibly making amends, in line with a restorative justice perspective. These programs would emphasize the crucial role played by dynamic internal factors, tackling emotions, CU traits, and antisocial cognition, in an attempt to decrease recidivism (Broidy, Cauffman, Espelage, Mazerolle, & Piquero, 2003; Jolliffe & Farrington, 2004; Walters, 1995, 2003).

We argue in favor of the need to create a rehabilitative service within the Lebanese prison system, instead of the isolating and punitive one currently in use. One way of implementing this would be, as suggested by Catharsis (2015), to include a psychological screening at the time of incarceration, not only assessing for psychological disorders, but also assessing attachment and mentalizing capacities. This would enable trained psychologists to set up homogeneous interventions for groups and individuals, based on the type of crime committed and the date of release. These interventions will aim at increasing mentalizing capacities in the prospect of social reinsertion and decreasing chances of re-offense.

One a nationwide level, these results could also guide prevention programs in at-risk, low socio-economic populations. In fact, low SES, poverty, and other contextual factors (van Ijzendorrn et al., 1997) have been found to constitute risk factors to the development of insecure attachment, and, in turn, poor mentalizing capacities. Prevention programs could be developed to increase awareness with regards to the pitfalls of these developments. They would be aimed at providing pointers to increase learned attachment security, promoting mentalizing, in an attempt to break the intergenerational transmission of insecure attachment, and thus partly reducing probabilities of anti-social behaviors.

Conclusion

In conclusion, this study focused on evaluating mentalizing strategies, attachment security, and narcissism in incarcerated men. Findings revealed an interaction between hypomentalizing strategies, avoidant attachment, low empathic concern, and emotion regulation using expressive suppression, highlighting the concrete thinking and distancing strategies used by this population. Attachment anxiety was found to be associated with hypermentalizing strategies, explaining incarcerated men's inability to take the other's perspective, thus facilitating the resort to violent strategies. In sum, this study is the first to extend Western findings to Lebanon, providing further evidence to the relation between insecure attachment styles and low mentalizing capacities in incarcerated men. These strategies put them at increased risk of offending, due to a failure in mentalizing, which leads to an inability to link external behaviors with their effects on internal mental states of the self and other. These findings are important in paving the way for innovative interventions within the Lebanese prison system, as well as prevention programs for at-risk, low SES groups.

Declaration of interest statement

No potential conflict of interest was reported by the authors.

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