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Policymakers as safe havens: The relationship between adult attachment style, COVID-19 fear, and regulation compliance

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ABSTRACT

The COVID-19 crisis has caused severe psychological distress. Governments have been trying to fight the outbreak, inter alia, by enacting various restrictions to maintain social distancing. However, compliance with restrictions depends upon different interpersonal variables. The present study focused on the relationship between attachment patterns, fear of COVID-19, and adherence to COVID-19 guidelines. Participants completed the ECR measure to assess their adult attachment style, in addition to a COVID-19 fear and guidelines compliance questionnaire. We suggest that anxious attachment patterns may be related to heightened fear of COVID-19. Although fear and guideline adherence were positively correlated, secure attachment patterns were correlated to higher adherence than insecure attachment patterns.

1. Introduction

COVID-19 has quickly spread across the globe, infecting (February 2021) more than one hundred million, killing more than two million, and undermining economies (World Health Organization, n.d.; Ayittey et al., 2020). Indeed, in March 2020, the WHO declared COVID-19 a global emergency pandemic (World Health Organization, 2020). In efforts to control the spread of the virus, governments worldwide have taken several measures, most notably, isolation, quarantining, and social distancing. Other recommendations have included wearing masks or handwashing (Wilder-Smith & Freedman, 2020).

Research has pointed to various factors that may influence interpersonal variance in guideline adherence (e.g., Miguel et al., 2021). As not all adhere to the guidelines, adherence is possibly affected by personal characteristics such as personality traits or cultural differences. For example, Zajenkowski et al. (2020) found that agreeableness – one of the Big-5 personality dimensions – predicted guideline adherence. Other research focused on factors such as individuals' attitudes toward COVID-19 (Zhong et al., 2020) and the personality trait of conscientiousness (Bogg & Milad, 2020).

Another factor that might affect guideline adherence is the emotional state triggered by COVID-19. The COVID-19 outbreak has caused fear and stress, which has affected people's psychological well-being (Brooks et al., 2020) and mental health (Horesh & Brown, 2020). For example,

Huang and Zhao (2020) identified impaired sleep quality and symptoms of generalized anxiety and depression in the population during the COVID-19 outbreak. Also, Roy et al. (2020) found high anxiety levels, with more than 80% of participants reporting recurring and preoccupying COVID-19-related negative thoughts.

Past research suggests that personality differences might affect levels of adverse emotional reactions (Saklofske et al., 2012). One relevant theory for examining these interpersonal differences is attachment theory (Bowlby, 1982; Shaver & Hazan, 1987), as it is highly relevant in times of stress. Moccia et al. (2020) examined the effect of attachment orientation on psychological distress during the COVID-19 outbreak. They inferred that insecure-anxious attachment individuals were at high risk for psychological distress during the pandemic. In contrast, secure or avoidant attachment styles (in adults) might serve as a protective factor from emotional overflow. However, this research has not examined these effects on COVID-19 guideline adherence. Still, attachment patterns have been found to affect compliance with health guidelines (e. g., Ciechanowski et al., 2001), and therefore may be relevant in the case of COVID-19.

1.1. Attachment orientation

Attachment representation is an internal working model by which individuals shape, adapt, and react throughout their lives based on their

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primary relationships in infancy and adulthood (Blalock et al., 2015). This model is used as a framework through which individuals understand and behave in both old and new relationships and organize cognitive and emotional reactions to various situations (Bowlby, 1982; Jones & Cassidy, 2014).

Scholars describe three main attachment styles in infancy and adulthood: secure, anxious-avoidant, and anxious-ambivalent (Hazan & Shaver, 1987). These portray individuals' ways of receiving and attending to relationships with intimate figures, such as parents, children, close friends, and romantic partners. Attachment styles also shape reaction patterns in times of stress and uncertainty. An inner working model of a secure attachment may help one cope using an adaptive response to stressful events, while anxious attachment might compromise an adaptive response (Blalock et al., 2015).

1.2. Attachment and stressful events

Individuals characterized by secure attachment tend to have high self-efficacy and well-established self-esteem, share their feelings, trust others, and seek closeness and social support. When facing threats, they have confidence in their environment to help them to cope; they are optimistic about the consequences of the stressful event, have a sense of efficacy and self-worth, and thus, believe in their ability to face the threat (Levy et al., 2011; Mikulincer et al., 1993; Sharabany, 2013). In other words, in times of stress, individuals with secure attachment can assess their abilities and limitations in facing the threat and thus respond by employing optimized and adaptive mechanisms. On the other hand, insecure attachment individuals tend toward maladaptive emotional response and behavior when faced with stressful events (Moccia et al., 2020; Sung et al., 2020). Those characterized by ambivalent-anxious attachment feel a sense of helplessness and smallness and tend to lack a sense of permanence and support from their environment (Campbell & Marshall, 2011). Thus, when faced with risk, they tend to overemphasize the stress factor (Moccia et al., 2020); they might overreact, have limited ability to regulate their emotional intensity (Myers & Wells, 2015), and evaluate their stressful life event as central to their self-perception (Ogle et al., 2016). Additionally, individuals with ambivalent-anxious attachment respond with an emotionally focused and passive behavior regulation mechanism. Thus, while they experience more stress and react more intensely, their behavior often does not help them cope with the stressful event (Mikulincer & Florian, 1998).

Finally, those characterized by avoidant attachment interpret reality as unpredictable and untrustworthy and therefore feel that they can only trust themselves (DeWall et al., 2011). They often avoid emotional closeness and feel uncomfortable with close relationships (Li & Chan, 2012). They may also view others negatively, have a fragile self-esteem, and difficulties regulating their emotions, mostly when feeling rejected (Carvallo & Gabriel, 2006). Studies show that when facing stressful events, they reduce their responsiveness and deny negative feelings and memories (Levy et al., 2011). While in moderate-level stressful events, they show confidence in dealing with the threat, much like individuals of secure attachment, during highly stressful circumstances, or cognitive load (Mikulincer et al., 2000) they may respond similarly to those characterized by ambivalent-anxious attachment, i.e., with unregulated, non-adaptive reactions. Moreover, their stress coping mechanism itself causes anxiety, in addition to the stress caused by the threatening event (Myers & Wells, 2015).

An example of the aforementioned coping mechanisms was described by Mikulincer et al. (1993), who examined the relationship between adult attachment patterns and reactions to the Iraqi missile attack on Israel during the first Gulf War (1990). They interviewed Israeli students after the war and classified them according to their attachment styles and residential areas. They showed that anxious-ambivalent subjects reported higher levels of distress than did secure subjects. They also found that avoidant subjects reported higher somatization levels, hostility, and trauma-related avoidance than did secure

subjects. Lastly, their research indicated that while secure subjects employed relatively more support-seeking strategies in coping with the trauma, ambivalent subjects employed more emotion-focused strategies, and avoidant subjects employed more distancing strategies.

1.3. The present study

As aforementioned, individual differences might affect the level of perceived stress (Saklofske et al., 2012), especially during traumatic events such as the COVID-19 pandemic (Roy et al., 2020). As research has shown that in health contexts emotions often lead to behavioral intentions (Brooks et al., 2002; Freckleton et al., 2014), we hypothesized that fear of COVID-19 would be correlated with stronger guideline adherence. Importantly, research has long shown that Ajzen's "The theory of planned behavior" (Ajzen, 1991), which proposes that behavior intentions predict actual behavior, can also explain health-related actions, including compliance (Godin & Kok, 1996).

As noted, researchers suggest that differences in attachment orientation are highly discernible in times of stress or threatening events (Jones & Cassidy, 2014). Such stressful events arouse a heightened response in ambivalent-anxious attachment individuals, whose ability to regulate emotional intensity is limited (Myers & Wells, 2015). Following this line of research and the findings mentioned above of Mikulincer et al. (1993) and Moccia et al. (2020), we hypothesized that the higher the ambivalent-anxious attachment pattern, the stronger the fear of COVID-19. However, we hypothesized that this intense, unregulated level of fear would compromise guideline adherence and thus, will be correlated with weaker guideline adherence.

Additionally, avoidant individuals tend to downregulate negative feelings in times of stress and avoid reaction to stressful events and hence, like ambivalent-anxious individuals, exhibit non-adaptive behavior (Levy et al., 2011; Mikulincer & Florian, 1998). Consistent with Mikulincer et al. (1993) and Moccia et al. (2020), and as we predicted that fear levels of COVID-19 would be correlated with COVID-19 guideline adherence, we hypothesized that the higher the avoidance-attachment pattern, the lower the fear of COVID-19, and accordingly the level of COVID-19 guideline adherence.

Finally, secure-attachment individuals usually exhibit the most adaptive behavior in times of stressful events, while ambivalent-anxious attachment and avoidance-attachment individuals might react in a self-harmful way (Blalock et al., 2015). Accordingly, we hypothesized that overall, secure attachment patterns would be correlated to more adaptive behavior, that is, to stronger adherence.

In this article, we aim to add to the existing literature on attachment (Mikulincer et al., 1993; Moccia et al., 2020) and the relationship between personality and adherence to health guidelines (Zhong et al., 2020). Importantly, we aspire to assist in the fight against COVID-19 by elucidating the role of attachment in real-life traumatic events. Specifically, we examine the impact of attachment style on psychological fear caused by COVID-19 and its consequent adherence to COVID-19 governmental directives.

2. Method

2.1. Sample

The sample was comprised of 245 Israelis (45.7% women; M_{age} = 40.62, SD = 12.8). Participants were recruited through an Israeli survey company and responded online. They were paid for their participation.

2.2. Procedure

Participants reported their adult attachment patterns (ECR - Experience in Close Relationship questionnaire), fear of the COVID-19, and their adherence to Israel's health ministry behavioral regulations. They then filled out a demographic questionnaire.

2.3. Measures

The presentation order of all statements in all scales was randomized, and all used a 7-point Likert-type scale ranging from "*strongly disagree*" (1) to "*strongly agree*" (7).

2.3.1. Attachment style measure

The *ECR* scale contains 36 statements taken from Brennan et al. (1998). It examines two orthogonal dimensions: *anxiety in close relationships* ($\alpha = 0.91$) and *avoidance of close relationships* ($\alpha = 0.89$), which assess adults' general attachment patterns in close relationships. On this continuous scale, the higher the *anxiety* dimension is, the stronger the fear of rejection in relationships, the need for others' approval, and distress in the absence of others. Additionally, the higher the *avoidance* dimension, the stronger the need for autonomy, self-reliance, and discomfort in intimacy. In contrast, low scores on both dimensions indicate a secure adult attachment orientation. Mikulincer and Shaver (2007) suggested that the scores on this two-dimensional conceptual scale – i.e., attachment anxiety and avoidance – reflect both the sense of attachment security in an individual and how s/he handles threats and distress.

2.3.2. COVID-19 fear measure

COVID-19 fear was assessed using five statements regarding fear of and concerns about COVID-19, including risk to oneself, one's closest environment, and Israeli society ($\alpha = 0.75$).

2.3.3. Guideline adherence measure

Guideline adherence was assessed using two items that corresponded to Israel's health guidelines ($r = 0.45$, $p < .001$).

Both *COVID fear* and *guideline adherence* measures were based on Maaravi and Heller (2020).

Attachment, fear of COVID-19, and guideline adherence scores were calculated using the mean of all items of their measure.

3. Results

To test our predictions, we based our investigation on Mikulincer et al.'s (2005) ECR measure analysis conceptualization and on the analysis method recommended in Preacher and Hayes (2008) PROCESS macro-Version 3 (Hayes, 2017). We used a double mediation analysis with percentile bootstrap estimation approach with 5000 samples to investigate whether fear of COVID-19 mediated the effect of attachment style (as measured by avoidance of and anxiety in close relationships) on COVID-19 guideline adherence. We ran two models: (1) indirect effect of anxiety in close relationships on guideline adherence through COVID-19 fear, controlling for avoidance of close relationships; and (2) the same model with avoidance of close relationships as the independent variable, controlling for anxiety in close relationships. As detailed below and illustrated in Fig. 1, results support those two mediation models where attachment patterns affect fear of COVID-19 and, thus, adherence to guidelines. Fig. 1 suggests a mediation model where fear of COVID-19 mediates the relationship between both dimensions of attachment to COVID-19 guideline adherence. Fear of COVID-19 serves as a suppressor for anxiety in close relationships.

First, we tested the mediation model with anxiety in close relationships as the independent variable, controlling for avoidance of close relationships. Anxiety in close relationships significantly positively predicted COVID-19 fear ($B = 0.18$, SE $= 0.05$, t $= 3.08$, $p = .007$), but alone (when COVID-19 fear was not controlled for) it did not predict guideline adherence ($B = -0.06$, SE $= 0.06$, t $= -0.98$, $p = .32$). However, in the final model ($R^2 = 0.14$, $F(3,241) = 13.05$, $p < .001$), i.e., when COVID-19 fear was added, anxiety in close relationships became a significant negative predictor of guideline adherence ($B = -0.13$, SE $= 0.06$, t $= -2.14$, $p = 03$; indirect effect $B = 0.07$, SE $= 0.03$, 95% CI $= 0.02,0.13$). Additionally, COVID-19 fear significantly positively
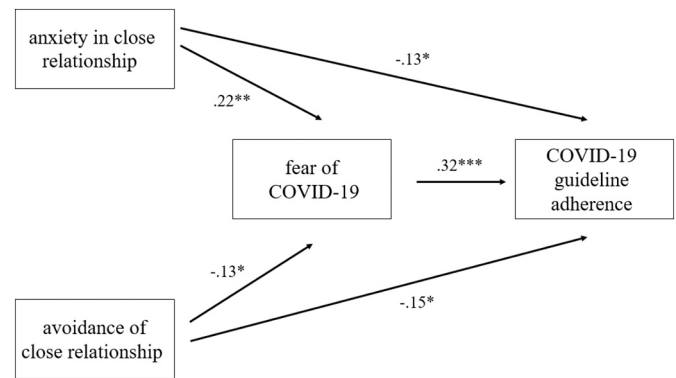

Fig. 1. Path diagram of the correlations between attachment styles, fear of COVID-19, and COVID-19 guideline adherence.
$*p < .05$, $**p < .01$, $***p < .001$.
Note: Coefficients are standardized regression weights.

predicted guideline adherence ($B = 0.37$, SE $= 0.07$, t $= 5.23$, $p < .001$).[1]

Second, we examined the mediation model with avoidance of close relationships as the independent variable, controlling for anxiety in close relationships. Avoidance of close relationships alone negatively predicts guideline adherence ($B = -0.21$, SE $= 0.07$, t $= -2.99$, $p = .003$). In addition, avoidance of close relationships alone was a significant negative predictor of COVID-19 fear ($B = -0.19$, SE $= 0.06$, t $= -2.01$, $p = .04$). As aforementioned, in the total model, COVID-19 fear was a significant positive predictor of guideline adherence ($B = 0.37$, SE $= 0.07$, t $= 5.23$, $p < .001$). Confirming partial mediation, while avoidance of close relationships alone remained a significant negative predictor of guideline adherence ($B = -0.16$, SE $= 0.07$, t $= -2.45$, $p = .01$), its impact significantly decreased from the direct path ($B = -0.04$, SE $= 0.02$, 95% CI $= -0.09$, -0.01).

Overall, and based on Mikulincer et al.'s (2005) data analysis conceptualization, our results indicate that the higher the anxious attachment pattern, the higher the fear of COVID-19. However, the higher the avoidant attachment pattern, the lower the fear of COVID-19 was. Moreover, the higher the fear of COVID-19, the higher COVID-19 guideline adherence was. Importantly, when controlling for COVID-19 fear, the higher both patterns of avoidance of close relationships and anxiety in close relationships, the lower COVID-19 guideline adherence, i.e., the higher secure attachment patterns were, the higher COVID-19 guideline adherence was.

4. General discussion

The COVID-19 pandemic, with its sudden nature and infectiousness, causes psychological distress, anxiety, depression, and other stress reactions (Huang & Zhao, 2020; Wang et al., 2020). Moreover, COVID-19

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[1] At first glance, the results might not be intuitively perceived as a classic mediation model. Yet according to Jose (2013), this pattern of results indicates a partial mediation model wherein the mediator, that is, COVID-19 fear, is a suppressor variable for anxiety in a relationship. Based on Jose (2013), COVID-19 fear reduces the unexplained variance in the relationship between anxiety in close relationships and guideline adherence, and therefore, the partial correlation between anxiety in close relationships and guideline adherence increases when COVID-19 fear is controlled. Moreover, we find a negative relationship between anxiety in close relationships and guideline adherence, while there is a positive relationship between COVID-19 fear and anxiety in close relationships, and between COVID-19 fear and guideline adherence. Such a state of inverted signs may point to a suppression mediator. When COVID-19 fear is not controlled, it suppresses the relationship between anxiety in close relationships and guideline adherence, whereas when fear is controlled (added to the model) the actual relationship between anxiety in close relationships and guideline adherence is discernible.

is a stress inducer (Roy et al., 2020) that may serve as a trauma reminder (Li et al., 2020). As such, the pandemic outbreak may evoke stress-related cognitive and emotional working models that have been activated in previous stressful experiences (Crum et al., 2017). One of the prisms through which the effects of the COVID-19 pandemic on emotional and cognitive working models can be analyzed is attachment theory, as mental strain often triggers the attachment system. Thus, attachment patterns are salient in times of distress (Levy et al., 2011).

Therefore, consistent with Moccia et al. (2020), we hypothesized a strong relationship between attachment patterns and the stress response to COVID-19. Consistent with studies on attachment and stressful events (Bowlby, 1982; Mikulincer et al., 1993; Moccia et al., 2020; Myers & Wells, 2015), we suggest that adult attachment patterns may be related to fear of COVID-19, and in turn, to adherence to COVID-19 health guidelines.

Our findings imply that ambivalent-anxious attachment patterns may be related to intense, unregulated fear of COVID-19, and in turn, reduce adherence, harm adaptive behavior, and thus compromise mental and physical health. Also, avoidance of close relationship patterns may be related to reduced negative valence emotional response. Consistent with Moccia et al. (2020), this, in turn, may be linked to lower fear of COVID-19 and serve as a protective factor against mental distress. However, low emotional responsiveness may impair compliance with COVID-19 guidelines and, in turn, impair adaptive behavior. Overall, secure attachment patterns, i.e., low anxiety in close relationships and low avoidance of close relationship patterns, were correlated to higher guideline adherence levels. This may suggest that, when taking the fear of COVID-19 into account, individuals with secure attachment behave adaptively by complying with guidelines, in contrast to individuals with insecure attachment patterns.

To the best of our knowledge, this study, examining personality, emotional, and behavioral factors together, is the first to propose a relationship between one's attachment system and compliance with COVID-19 guidelines.

This study presents evidence of the mental distress aroused by COVID-19, which has received less attention than has COVID-19's health and economic burdens. Moreover, this study provides further evidence of the importance of the parental and social environment wherein children grow up and through which people build their emotion regulation mechanisms. Feelings of security, attained by close relationships, facilitate secure attachment patterns and may serve as a personal resource that promotes successful coping with future stressful situations (Mikulincer et al., 1993). Thus, the current research supports the notion that attachment patterns are related to responses to stressful situations. Our results point to adaptive responses in the case of a secure attachment and maladaptive responses in the insecure attachment. The present study suggests that in facing COVID-19, not only is the physiological immune system used for protection but also the emotional immune system plays a role and could be strengthened by successful experiences of close relationships.

This study may assist decision-makers in preventing the spread of COVID-19. Because the disease is highly contagious, maladaptive behavior wherein individuals refrain from adhering to government guidelines may pose risks to both the individuals themselves and their environment (Zajenkowski et al., 2020). For example, wearing a mask and maintaining social distance limit one's exposure to being infected and protect others from being infected. Our findings can help policy-makers, and health agencies understand the diversity of media messages needed to induce guideline adherence and, therefore, boost resilience and limit populations' exposure to the virus. Furthermore, therapists and social workers may assist those with attachment patterns that hinder their adherence by implementing intervention programs to improve their adaptation to the new situation, based on their previous experiences in close relationships.

This study has several limitations. Firstly, the presented findings of maladaptive behavior among insecure individuals may involve several

underlying mechanisms and other factors that were not explored in this study. For example, ambivalent-anxious individuals tend to constantly need attention and need others to make them feel worthy and meaningful. Thus, it is plausible that they may find it challenging to maintain isolation from others, and therefore fail to maintain social distance during the COVID-19 pandemic. Another example of a plausible mechanism stems from the difficulty in trusting others that may characterize attachment-avoidant individuals (Mikulincer et al., 1993). This may lead them to mistrust the government and health agency decisions and thus disobey the guidelines. Follow-up studies should examine the specific mechanisms responsible for the maladaptive behavior of individuals with insecure attachment. In addition, as we used self-report questionnaires asking about behavior, our findings are susceptible to social desirability and other biases related to self-perception. Also, studies have shown an association between adherence to guidelines and various other personality factors that may also be related to attachment. For example, conscientiousness (Carvalho et al., 2020), openness, perceptions of social endorsement (Bogg & Milad, 2020), need for structure, and victimhood (Maaravi et al., 2020). Therefore, future studies should measure other psychological variables and control them while examining the mentioned relationship. Finaly, this study examined only Israelis in a limited sample size. Because each country has handled the crisis differently and has differing cultural, economic, and health characteristics, it is worth conducting the study in other countries and use a wider sample size (Maaravi et al., 2021).

Data availability statement

The data that support the findings of this study are openly available at: https://osf.io/8fa9k/?view_only=051fe96f447c4f469efdbc58ff64970c.

CRediT authorship contribution statement

Sandra Segal: Conceptualization, Methodology, Formal analysis, Data curation, Writing – original draft, Visualization, Project administration. **Ruth Sharabany:** Conceptualization, Methodology, Writing – review & editing, Supervision. **Yossi Maaravi:** Conceptualization, Methodology, Resources, Writing – review & editing, Supervision.

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