Mediating Role of Fatalism on the Relationship between Emotional Intelligence and Psychological Reactance in a Health Crisis Context (Covid-19)

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Abstract: **The messages on barrier gestures to COVID-19 rather seem to produce reactance. This study aimed the mediating effect of fatalism on the relationship between emotional intelligence and psychological reactance to COVID-19 barrier messages. Data were collected from 232 participants using a composite questionnaire containing the emotional intelligence, psychological reactance and fatalism scales. The simple mediation model were used for data processing because it fit with three variable mediational study design. The results showed that fatalism mediates the relationship between emotional intelligence and psychological reactance vis-à-vis messages on barrier gestures to COVID-19. Emotional intelligence inhibits fatalistic beliefs and eliminates psychological reactance. In the health crisis context it is important to take socio-emotional variables into account when designing awareness campaigns inviting individuals to adopt preventive behaviors, especially when those represent the main means of eradicating the pandemic. More implications of these results, as well as future perspectives were discussed.**

***Keywords*---** **COVID-19; barrier gestures; psychological reactance; emotional intelligence; fatalistic beliefs.**

I. INTRODUCTION

Coronavirus disease 2019 (COVID-19) is a respiratory and infectious disease identified in December 2019 in the city of Wuhan in China. Today it is present on all continents and in almost all countries of the world. As of January 22nd, 2022, 340,543,962 people worldwide had already tested positive for COVID-19 and a total of 5,570,163 deaths had been recorded (World Health Organization [WHO], 2022; www.who.int/). So far, the scientific community has struggled to develop an effective protocol to overcome this pandemic. COVID-19 has therefore emerged as the major health concern at the moment. It has several types of economic, social and even psychological consequences. In terms of psychological consequences, individuals who contracted or not COVID-19 experience dysfunctional emotions such as anger, nervousness, worry, fear, anxiety of being infected or dying (Brooks et al., 2020; Lima et al., 2020). Those emotional effects also tend to lead cognitive effects by directing individuals' discourse towards natural/supernatural attributions (Messanga, 2012).

The main cause of the COVID-19 rapid spread is behaviors adopted by individuals (WHO, 2020; www.who.int/); it appears that its eradication depends largely on non-pharmaceutical interventions ([i.e. political decisions and individual behaviors]; Ferguson et al., 2020). However, previous experience with similar pandemics shows that non-pharmaceutical action that involves free choices leads to more conflict when it involves political force (The Hastings Center, 2020). To this end, individual behaviors such as washing hands regularly, avoiding social contact, self-confinement, etc. remain the most adequate way to reduce the spread of the new coronavirus. Organizations and governments have therefore undertaken communication campaigns to raise awareness of those behaviors. Unfortunately, it seems individuals are reluctant and even opposed to engaging in such behaviors as the number of infected and dead is increasing day by day (WHO, 2020; www.who.int/). To account for this boomerang effect, psychological reactance is very often highlighted (Reynolds-Tylus, 2019).

Psychological reactance is an aversive motivational state that appears when an individual's freedom is eliminated or threatened (Brehm & Brehm, 1981). That motivational force is intended to allow the individual to regain his freedom, even if it is not accompanied by a beneficial effect on his health. Psychological reactance theory defines freedom as an individual's belief in their ability to engage in behavior, to decide when and how to engage in that behavior **(**Niesta Kayser et al., 2016). Thus, reactance is stimulated when a message such as that on barrier gestures, prohibits a specific behavior, asks an individual to abandon a desired goal or contains a perceived threat. It will manifest itself in an attempt to restore autonomy, which results in the desire to engage in the prohibited behavior, a refusal to adopt prescribed health behaviors, or an aggressiveness towards the message source **(**Bessarabova & Massey, 2019; Dhanya & Pricilda Jaidev, 2018). Psychological reactance is therefore reactive and not proactive. It is a mixture of negative emotions and cognitions (Dillard & Shen, 2005), which precede perception of a threatened freedom and lead to health communications resistance.

Reactance theory explains how COVID-19 recommendations involving a significant change in an individual's lifestyle stimulate resistance and paradoxically desirability of proscribed behavior. Indeed, a message can lead to restrictions in the life of an individual without him perceiving a threat over his autonomy. The perception of a

threat to freedom depends on a limit point. That point is reduced when health communication involves preventive measures in an individual in the absence of all symptoms, an indefinite duration of prescriptions and proscriptions and/or encourages healthy behaviors and discourages unhealthy behaviors (Reynolds-Tylus, 2019). Psychological reactance thus seems to be a process to be taken into account when looking at the targets of persuasive health communication. It manifests itself consciously or unconsciously (Wellman & Geers, 2009), and is influenced by several factors. Because on the one hand, it is supported by negative emotions and cognitions (Dillard & Shen, 2005) and that current health context leads to those same type of emotions (Lima et al., 2020), and on the other hand, COVID-19 seems to direct discourse towards beliefs in the divine, fate, and luck; we will retain here two particular factors: emotional intelligence (EI) and fatalism.

Fatalism is a set of beliefs that the world and the individual's life course are pre-established by a supreme being and follow an inevitable way where the course of events get away human control (Mvessomba et al., 2017; Thornton et al., 2019). That set of beliefs leads to an information processing characterized by an inhibition of will and effort, because the fatalist believes destiny is defined from birth by a deity. That leads to perceptions of helplessness and despair as well as supernatural attributions about life events based on the concepts of fate, luck, predestination, divine (Messanga, 2012). **Shen et al.' (2009) fatalistic beliefs model** has shown that fatalism is both one-dimensional and multidimensional construct, composed of predetermination, luck and pessimism. Predetermination is a belief in a world predefined by the divine order, where COVID-19 is perceived as a punishment that only God can lift. Luck, on the other hand, is a belief in which health is a matter of destiny, chance or fate, and even our behaviors could not help us prevent or avoid disease. Being infected with coronavirus then appears as a blow of bad luck. Pessimism on the other hand, is a belief that our behaviors can only produce negative consequences and death is inevitable in case of infection. Fatalistic beliefs are universal (Maercker et al., 2019). They are accentuated by a very high exposure to health information through media and promote adoption of inappropriate behaviors to fight cancer, cardiovascular diseases, HIV/AIDS, etc. (Lee & Chae, 2016; Maercker et al., 2019; Mvessomba et al., 2017; Ramondt & Ramírez, 2017).

EI refers to a generic skill which includes ability to perceive, evaluate, understand, express, manage own emotions and those of others, and use feelings that facilitate thinking to promote harmonious emotional and intellectual development (Mayer et al., 2000). **Emotional intelligence theory** emphasizes how an individual processes emotional information for decision-making benefits. It postulates individuals who better perceive, understand, use and manage emotions are more adapted to everyday demands. Recent literature highlights three models of emotional intelligence (performance-based ability model, self-report ability model and self-report mixed model) that can explain health behaviors (Gong& Jiao, 2019). Those different models argue EI is characterized by expression, perception, understanding, use and effective management of emotional information and by social behaviors and functional relationship (Petrides & Furnham, 2003). Thus, emotionally intelligent individuals effectively cope with emotions induced by the pandemic and adopt the appropriate behaviors. However, only one study (Johnson, 2018) has already explored the relationship between EI and fatalism. It was about South American teenagers. It shows that less emotionally intelligent teenagers are fatalistic. They experience more negative affects, anger, frustration and irritation. The present study also explores the relationship between EI and fatalism, this time among African adolescents and adults.

While there are almost no studies on fatalism and EI, there are a few on EI and psychological reactance. With a clinical population, Dowd et al. (1994) showed certain characteristics of a weak EI such as lack of self-control and interpersonal skills, poor self-image, lack of attention to oneself and others were associated with high psychological reactance. Similar results were obtained in a prison population. Psychological reactance was positively related to stress and several aspects of anger such as angry excitement, hostile perspectives, a scope for angry situations (Dowd, 2002). With consumers, EI has been shown to be negatively related to an unfavorable predisposition to change, but it is a factor of individual adaptation to change (Provost, 2011). In general, EI and reactance are negatively associated and influence the same types of behaviors: withdrawal, conflict, conformism, etc. (Middleton et al., 2015). About health behaviors in general and prevention behaviors in particular, no studies have yet explored the relationship between EI and psychological reactance. However, separate studies (Jung et al., 2010; Willard, 2006) show reactants have difficulty complying with recommendations and emotional intelligent people observe prescriptions. Thus, another objective of this study is to explore the relationship between those two processes in a context of pandemic prevention (COVID-19).

Another objective of this study is to explore the relationship between fatalism and psychological reactance. In the literature that relationship has not yet been studied directly. Several studies have rather examined relationship between fatalism and some indicators of psychological reactance such as resistance to change or adoption of proscribed behaviors (Dowd, 2002). Those studies show fatalism has a negative correlation with screening behaviors (Espinosa de los Monteros & Gallo, 2011), prevention behaviors (Perfetti, 2017) and adherence (Cohn & Esparza del Villar, 2015; Mvessomba et al., 2017). Overall, work on fatalism shows how it operates in the individual personal and social life and leads to inaction both preventively and curatively. Fatalists have inappropriate health behaviors in terms of prevention, screening and treatment. However, although several studies show the relationship between fatalism and the adoption of proscribed behaviors, very few

studies (which were otherwise conducted on North American populations) examine that link empirically (Cohn & Esparza del Villar, 2015). This study empirically investigates that relationship on an African sample.

The main objective of this research is to study the relationship between EI and psychological reactance, mediated by fatalism. It explores why a fatalist may not be reactant. So far no study in the literature highlights the mediating effect of fatalistic beliefs on the relationship between EI and psychological reactance. Moreover, given that the work of Shen et al. (2009) conceptualizes fatalism from a one-dimensional and multidimensional perspective, this study examines the mediating effect of fatalism and each of its dimensions in that ternary model. That approach has the advantage of being able to determine which of the fatalism dimensions has the most important effect in the mediation relationship, and even on psychological reactance. Indeed, one of the limitations of previous studies was not to empirically show the dimension of fatalism which affects health behaviors the most (Cohn & Esparza del Villar, 2015). That main objective and secondary objectives presented above, are underpinned by the following four hypotheses: predetermination (H1), luck (H2), pessimism (H3), fatalism (H4) mediates the relationship between EI and psychological reactance vis-à-vis messages on barrier gestures to COVID-19.

II. METHOD

Participants and Procedure

The participants in this study came from two major cities in Cameroon, from March to July 2020. They were randomly recruited either on the street or in their homes. In their entourage, they either had a person with COVID-19 (n = 27), or they did not have one (n = 205). They had different intellectual levels (no university degree n = 135; university degree n = 97) and were divided into several socio-professional spheres (study n = 121; security n = 21; formal sector n = 32; informal sector n = 40; unemployed n = 18). Individuals in the health sphere were systematically excluded from the study because of their proximity and their knowledge of the pathology. The sample was therefore composed of 232 individuals, aged between 15 and 61 years (M = 27.89, SD = 8.88). They were either male (n = 130) or female (n = 102), completed a self-administered questionnaire and returned it to the interviewer.

Instruments

Hong Psychology Reactance Scale ([HPRS], Hong & Page, 1989; Shen & Dillard, 2005**).** The HPRS measures personality trait relative to the propensity to feel psychological reactance from a self-reported scale of 14 items. Reactance is evaluated as both a one-dimensional and multidimensional construct. As a multidimensional construct, it has four dimensions: emotional response to a limited choice (four items), reactance to obedience (four items), resistance to the influence of others (four items), and resistance to recommendations (two items). Participants were invited to make decision about government's recommendations to fight against COVID-19, on a five-point Likert-type response system ranging from strongly disagree (1) to completely agree (5). Analysis of the internal coherence index *(α)* showed that the one-dimensional construct was better adjusted to our population *(α* = .58).

Trait Emotional Intelligence Questionnaire ([TEIQue-SF], Mikolajczak et al., 2007; Petrides & Furnham, 2003). The TEIQue-SF is the reduced version of the TEIQue. It assesses emotional intelligence trait using a 30 items self-reported scale. That short form version mainly measures emotional intelligence trait as a one-dimensional construct. The items are presented to the participants with a seven-point Likert-type response system ranging from strongly disagree (1) to strongly agree (7). **The** analysis of the internal coherence index (*α*) led to cancel item 25 which derived value of Cronbach's alpha below the acceptable threshold. Following that operation we obtained a more adequate Cronbach value *(α* = .70).

Scale of Fatalism (Shen et al., 2009). This scale evaluates the degree of fatalistic belief as both a one-dimensional and multidimensional construct. It is composed of 20 items divided into three dimensions: predetermination (10 items), luck (4 items) and pessimism (6 items). For each item, participants were invited to position themselves on a five-point Likert-type response system ranging from strongly disagree (1) to strongly agree (5). Analysis of the internal coherence index (*α*) showed values oscillate between low to good (one-dimensional fatalism *α* = .77; predetermination *α* = .76; chance *α* = .74; pessimism α = .46).

Ethical considerations

Potential participants were first informed verbally about study purpose, confidential and voluntary nature of their participation as well as the possibility of withdrawing from the study at the desired time. They were then given an informed consent form that they had to read and sign if they approved the study. For participants under the age of 18, they were recruited only in their parent' homes and after their parents had signed the informed consent form.

Data analysis

The data collected was processed from correlation and mediation analyses on SPSS version 23 software. Correlation analysis tested linear relationship between the different variables. When that analysis was significant, we performed a mediation analysis. The latter relied particularly on the Hayes method (2018). In particular, we used the PROCESSv3.4.1 macro with 5000 *boostraps.* It allowed us to test the mediating effect of fatalistic beliefs on the relationship between EI and psychological reactance. The mediation is ultimately a causal explanation system. According to Hayes (2018), that analysis model has the strength to allow some mathematical procedures in order to neutralize data collection

and design limitations. Given the fact that the design of current study is cross-sectional, performing that mediation analysis model allowed to claim causal relations between variables as it require in studies of mediational effects. The analysis was specifically the simple mediation model because three variables were considered in the study: EI (independent variable), Fatalism (mediator variable) and Psychological Reactance (Dependent variable).

III. RESULTS

Before conducting mediation analyses, we first conducted preliminary analyses (Table 1).

It emerges (Table 1) that those who are emotionally intelligent, not only do not seek to recover a freedom restricted by barrier gestures $r(232) = -.21$, $p \leq .01$, but also do not think that the course of events relating to COVID-19 escapes the human will $r(232) = -.20$, $p \leq .01$. Similarly, people who have difficulties for managing their emotions and those of others, think their health depends on destiny $r(232) = -.16$, $p \leq .05$, and they will only have the corona virus if they are unlucky $r(232) = -.22$, $p \leq .01$. The latter are also motivated to take action to recover their reduced autonomy by barrier gestures $r(232) = .44$, $p \leq .01$. It is the same about those who are pessimistic $r(232) = -.22$, $p \leq .01$. However, no relationship was observed between pessimism and EI $r(232) = -.09$, $p > .05$. These results, although edifying, do not yet allow us to decide concerning our hypotheses.

Tableau 1. Means, Standard Deviation and Correlations

		Mean	Standard Deviation	1.	2.	3.	4.	5.	6.
1.	Emotional Intelligence	4.82	.74						
2.	Psychologial Reactance	2.84	.51	-.21**					
3.	Fatalism	2.63	.57	-.20**	.44**				
4.	Pessimism	3.20	.69	-.09	.22**	.65**			
5.	Chance	2.06	.87	-.22**	.23**	.60**	.21**		
6.	Predetermination	2.52	.74	-.16*	.44**	.88**	.35**	.33**	
Note. *$p \leq .05$. **$p \leq .01$.									

Structural equations were performed for each mediation model of the study, corresponding to each of our hypotheses (Figure 1). Model 1 shows that EI is a relevant and negative predictor of predetermination $\beta = -.16$, $t(232) = -2.45$, $p \leq .01$; and *reactance* $\beta = -.10$, $t(232) = -2.44$, $p \leq .05$. This means the ability to understand and use emotional information reduces the belief that health depends on fate and the need to behave contrary to COVID-19 recommendations. Thus, predetermination is a relevant and positive predictor of psychological reactance $\beta = .28$, $t(232) = 6.73$, $p \leq .01$. This means thinking someone will have COVID-19 if they are supposed to have led to a sense of frustration when decisions about it are not made independently. The results of Model 1 are similar to Model 2 based on luck. Indeed, ability to express, regulate, perceive one's emotions and those of others dilutes the belief that health depends on luck $\beta = -.26$, $t(232) = -3.35$, $p \leq .01$;and the tendency to consider as unwelcome the government's recommendations on barrier gestures $\beta = -.12$, $t(232) = -2.61$, $p \leq .01$. The latter is accentuated by the belief in luck $\beta = .11$, $t(232) = -2.90$, $p \leq .01$.

Unlike Models 1 and 2, Model 3 which emphasizes pessimism shows that it is not affected by EI $\beta = -.08$, $t(232) = -1.29$, $p = .20$. On the other hand, EI retains its effect on psychological reactance $\beta = -.13$, $t(232) = -3.04$, $p \leq .01$; and being pessimistic predisposes to reacting behaviors $\beta = .15$, $t(232) = 3.15$, $p \leq .01$. Model 4, which is focus on fatalism in a global way, reinforces results of models 1 and 2. It shows that the ability to use emotions to facilitate thinking not only eliminates the propensity for supernatural attributions related to COVID-19 $\beta = -.15$, $t(232) = -3.07$, $p \leq .01$, but also the desire to engage in proscribed behavior $\beta = -.09$, $t(232) = -2.16$, $p \leq .05$. Similarly, that belief that the course of life in the pandemic context follows an inevitable march leads to a motivation for transgression even if it can be dangerous for health $\beta = .36$, $t(232) = 6.60$, $p \leq .01$. All these results therefore tend towards the confirmation of our mediation models.

Figure 1. Differents Mediation Models of the Study

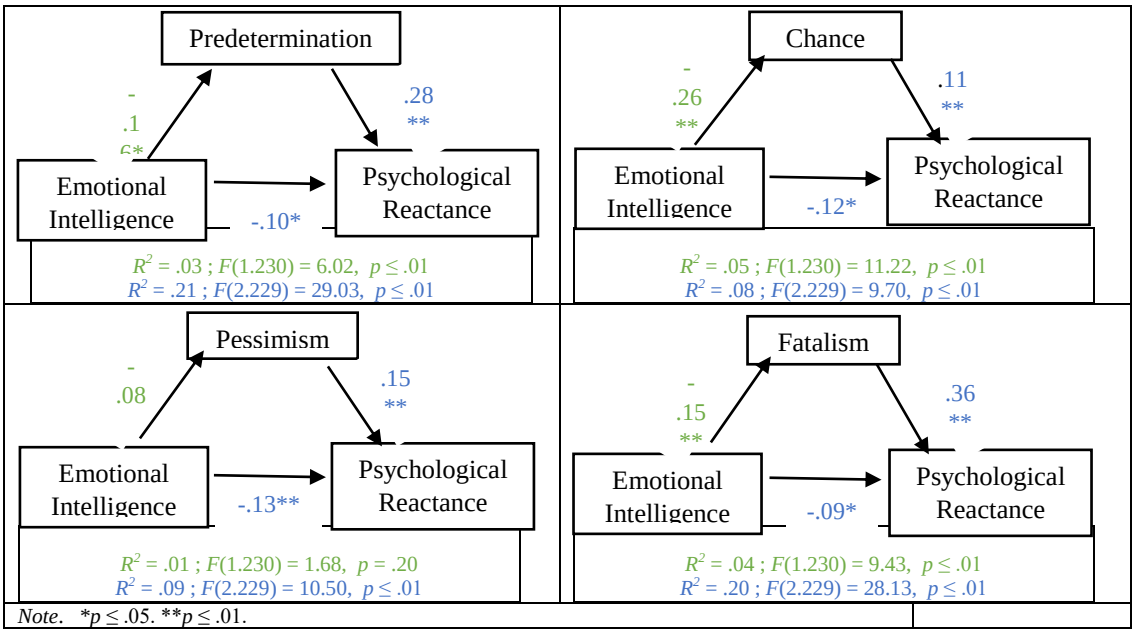

Tableau 2. Total Effect C, Direct Effect C' And Indirect Effect Ab of Ei On Fatalism

	Mediatine Variables	Total effect *c*	Direct effect *c'*	Indirect effect *ab*
1.	Predetermination	-.15**	-.10*	-.07*
2.	Chance	-.15**	-.12**	-.04*
3.	Pessimism	-.15**	-.13**	-.02
4.	Fatalism	-.15**	-.09*	-.08*
Note. *p ≤ .05. **p ≤ .01.				

Table 2 presents the regression coefficients that allow us to decide on our assumptions. For Model 1, in the absence of any control over predetermination, there is a total effect of EI on psychological reactance c = -.15, t(232) = -3.26, 95% CI = [-.24; -.06]. That effect is always observed even when controlling for predetermination c' = -.10, t(232) = -2.44, 95% CI = [-.18; -.02]. There is also an effect of EI on psychological reactance through predetermination ab = -.07, 95% CI = [-.13; -.01]. In other words, the ability to regulate emotions to promote intellectual development and emotional well-being inhibits anger related to the restrictions imposed by barrier gestures by eliminating the belief that the course of life is predefined in advance regardless of the behaviors adopted. Those results are similar to those of Model 2. Indeed, chance is mitigated by the ability to express and use one's emotions and those of others, and leads to reduction of the need to adopt risky health behaviors ab = -.04, 95% CI = [-.08; -.01].

However in Model 3 even if the total effect c = -.15, t(232) = -3.26, 95% CI = [-.24; -.06] and the direct effect c' = -.13, t(232) = -3.04, 95% CI = [-.22; -.05] are significant, indirect effect analysis invalidates the mediation of the relationship between EI and reactance by pessimism ab = -.02, 95% CI = [-.06; .01] . However, analysis of indirect effect of model 4 confirms a mediation hypothesis. Specifically, ability to effectively convey emotional information, neutralizes beliefs about the inevitability of future events, denial of personal control and reduces motivation to regain one's sense of freedom by engaging in behavior that contradicts COVID-19 recommendations ab = -.08, CI 95% = [-.14; -.02]. Overall, these results support our assumptions 1, 2 and 4. They highlight complementary mediation (Zhao et al., 2011). On the other hand, they invalidate hypothesis 3. This shows that the one-dimensional and multidimensional aspects of fatalism do not produce entirely the same results.

IV. DISCUSSION

Individual behaviors are currently the most effective solution to eradicate the spread of COVID-19. To this end, awareness-raising communications on appropriate actions are multiplying through the media. But, those messages tend to produce a boomerang effect that is amplified by belief that our health is defined in advance by a supernatural being and attenuated by our ability to effectively process emotional information. The aim of this study was to explore the mediating role of fatalism on the relationship between EI and psychological reactance vis-à-vis messages on barrier gestures. Analysis of the results shows that EI's skills eliminate fatalistic beliefs (predetermination, luck, pessimism) and reduce responsiveness to COVID-19 barrier messages.

Several explanation possibilities of these results are available. The first relates to theory of EI. Indeed, effective processing of emotional information also involves functional

cognitive processing (Mayer et al., 2000). It justifies why emotionally intelligent individuals are less reactive to messages about barrier gestures. Their ability to perceive, understand and manage emotions neutralizes beliefs in health based on divinity and/or bad luck, which are responsible for psychological reactance. EI is directing supernatural discourses about COVID-19 towards rational discourses that advocate place of human will in eradicating the spread of this pandemic. Supernatural attributions that are indicative of fatalistic beliefs rely on fear, despair, feelings of helplessness and stimulate risky behaviors (Messanga, 2012; Mvessomba, 2017). However, such emotions are taken care of by EI. That explains why EI alters predetermination, luck, fatalism and inhibits any motivation to regain freedom involving health problematic behaviors.

It should also be noted that EI theory highlights a set of skills. Among them: ability to stay positive and see life on the bright side, ability to adapt emotions and thoughts to new situations, ability to harmonize emotions and thoughts with objective reality (Bar-On, 2012; Petrides & Furnham, 2003). Thase abilities dilute beliefs that coronavirus infection is predefined by a deity or depends on luck and reduces reactance. In addition, EI makes it possible to effectively manage fear and adapt one's reactions to the situation. Indeed, the insistence on the number of deaths and infected with COVID-19 constitutes a form of persuasive communication by appeal to fear, which causes reactance (Maillard, 2006). However, our results show EI helps to cope with dysfunctional emotions, inhibits beliefs over the course of life based on fatality and promotes the adoption of barrier gestures to COVID-19.

Another possibility of explanation likely to find a favorable echo is that relating to the work on persuasive communication in health. Indeed, messages with a high level of control, insisting on duty or obligation lead to reactance (Rosenberg & Siegel, 2017). As a result, the psychological reactance noticed from participants can already be justified by the fact that messages on COVID-19 barrier gestures disseminated through the media use an injunctive tone. In addition, repeated exposure to health communication through the media stimulates fatalism (Ramondt & Ramírez, 2017). In this time of pandemic, all media are constantly disseminating information on the health situation. They insist on the disasters of the disease and the lack of complete treatment. It can lead participants to develop negative emotions (fear, despair, etc.) and beliefs which allow to thing COVID-19 is inevitable and can be avoided just too little regardless of the measures taken. That belief in the inability of the human will to fix the situation therefore accentuates psychological reactance and justifies resistance to barrier gestures adoption (Bessarabova & Massey, 2019; *Reynolds-Tylus, 2019).* In such a context, EI offers the individual skills to actively process aversive emotions and cognitions and adopt health behaviors conducive to their well-being (Bar-On, 2012).

This study also has a number of limitations. First, the hypothesis of mediation based on pessimism has been refuted. That result can be explained by very low internal coherence of pessimism dimension *(*α = .46). It can also be explained by the fact that about 62% of our participants are under the age of 30. At this age, it seems that individuals nurture projects and invest in them despite environmental and structural barriers. That may therefore predispose them to a certain optimism about life in general. Another limitation of this study is related to a causal interpretation of our results. Although the direct and indirect effects are significant for three of our mediation models, an interpretation in terms of linear causality cannot be advanced. This requires an experimental study which will also provide more details. Finally, this study is also limited by the fact it used self-reported measurements to empirically demonstrate a model that was still unexplored in the literature. Indeed, it has been proven those types of measures often lead to social desirability (Spector, 2006), which may justify why the direct and indirect effects observed were small.

This study contributes to the existing literature by demonstrating the mediating role of fatalistic beliefs about the relationship between EI and psychological reactance. It has the merit of demonstrating mediating effect of fatalism at both one-dimensional and multidimensional levels. This study also fills another gap observed in the literature, by prioritizing dimensions of fatalism according to their effect on health behaviors (Cohn & Esparza del Villar, 2015). To this end, predetermination proved to be the most influential factor, followed by luck and pessimism respectively. Moreover, it empirically demonstrates relationships that were either non-existent in the literature or very little explored. In this sense it highlights a direct link between fatalism and psychological reactance. In addition, it reinforces and complements on the one hand the work of Middleton et al. (2015) on relationship between EI and reactance; and on the other hand, Johnson's work (2018) on relationship between EI and fatalism. However, the causal relationship between fatalism and preventive health behaviors is still unexplored empirically (Cohn & Esparza del Villar, 2015). The fact that the results reinforce our mediation model with fatalism as a mediator, however, provide actionable insights.

V. CONCLUSION

The literature on health behaviors pays great attention to psychological reactance. Very few studies examine its relationship to fatalism or EI and none explore the relationship between the three. This research has filled this gap by examining the mediating role of fatalism on the relationship between EI and psychological reactance. The results confirmed our hypothesis with the exception of pessimism hypothesis. Overall, resistance to preventive behaviors adoption in the fight against COVID-19 is determined by the cognitive treatments stimulated by the related awareness messages. Those messages can be perceived as less threatening if we add at the end *postscript restorations* or if we modify their content so that it stimulates pleasant

emotions (Rosenberg & Siegel, 2017) instead of fatalism. Our results have shown fatalism amplifies reactance while EI dilutes those processes and leads to the adoption of barrier gestures. It is therefore important to consider cognitive and emotional characteristics of the target when designing health messages. However, further studies are required to test causality without resorting to self-reported measures. In view of the EI importance further studies will need to explore application of an EI intervention program at community level.

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