Health Belief Model for modification etiological beliefs about Panic disorder resulting outbreaks infection of New Coronavirus (COVID 19)

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Abstract. Compensatory health beliefs and their relation to health self-regulation, the idea of health promotion is set from the philosophy that good health and outcome of the accumulative personal achievement. It includes, on the individual run, developing the health habits at an early stage. This study predicting of panic disorder with outbreaks of New Coronavirus' Health Risk in Algeria has greater attention should be paid to psychological crisis intervention among affected populations, developing health includes an intervention system aiming at helping people perform healthy practices and change those practices that damage health. Literatures indicate that individual when performing an unhealthy practice; this refers to certain health problem for example; Panic Disorder (PD) of outbreak New Coronavirus (COVID19) would lead to a change his behavior and activities a compensatory for the unhealthy behavior.

The sample included 300 Underwent quarantine with suspicions of infection who participated in this study treatments of Etiological beliefs about Panic Disorder (PD). Regression analyses revealed that sex, duration of PD and Positive psychological condition, Negative behaviors that increase outbreaks (COVID 19), and Etiological beliefs about Panic Disorder (PD). Results are preliminary and further research is needed to understand more the factors that etiological beliefs about Panic Disorder (PD) resulting from outbreaks infection of new Coronavirus (COVID 19) uses Health Belief Model (HBM).

In addition, the study draws important implications on others affected to overcome any psychological difficulties through using the health belief model.

Keywords: New Coronavirus (COVID 19), Panic Disorder (PD), Health Belief Model (HBM)

ملخص. جاءت هذه الدراسة التي لتتنبأ باضطراب الهلع مع تفشي المخاطر النفسية والصحية الناتجة عن فيروس كورونا المستجد في الجزائر وهذا اعتمادا على نموذج المعتقد الصحي باستخدامه بالتدخل في مساعدة الأفراد في تجاوز الأزمات النفسية الناتجة عن انتشار فيروس كورونا المستجد . ويهدف هذه النموذج إلى تطوير الصحة النفسية والبدنية من نظام تدخل يهدف إلى مساعدة الأفراد على أداء ممارسات صحية وتغيير تلك الممارسات التي تضر بالصحة . تشير الدراسات إلى أن الفرد عند قيامه بممارسات غير صحية قد تزيد من المشكلات النفسية والبدنية، فعلى سبيل المثال: اضطراب الهلع (PD) لتفشي فيروس كورونا الجديد(COVID19) قد يؤثر سلبا على المستوى النفسي والبدني للفرد والذي من شأنه أن يؤدي إلى تغيير سلوكه وأنشطته بشكل غير الصحي.

وقد شملت العينة 300 خضعوا للحجر الصحي للاشتباه في إصابتهم بالعدوى والذين شاركوا في هذه الدراسة كشفت تحليلات الانحدار ان المعتقدات المسببة لاضطراب الهلع (PD) ، وكذا تأثيرها على الحالة النفسية والبدنية للفرد ، والسلوكيات السلبية التي تزيد من تفشي المرض (COVID 19) وكذا المعتقدات المسببة لاضطراب الهلع(PD)، نتائج الدراسة أكدت ان هناك حاجة إلى مزيد من البحث لفهم المزيد من العوامل التي تستخدم فيها نموذج المعتقدات الصحية(HBM) وهذه المعتقدات المسببة لاضطراب الهلع (PD) الناتجة عن تفشي عدوى فيروس كورونا الجديد بالإضافة إلى ذلك ، ترسم الدراسة آثارا مهمة على الافراد للتغلب على أي صعوبات نفسية من خلال استخدام نموذج المعتقدات الصحية.

الكلمات الرئيسية. فيروس كورونا الجديد(COVID19) ، اضطراب الهلع (PD) ، نموذج المعتقدات الصحية(HBM)

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1 . Introduction

The health promotion is launched of idea philosophy that the perfect health that product a personal achievement cumulative, At individual level, it includes developing habits healthy and habits system in early stage of individual's life and maintaining them stages of adulthood and old age. On medical level, it includes teaching people how to reach healthy lifestyle and helping groups most exposed to certain health risks to behave that enables them attention and what they can be risks incurring [1]. That aims of this study to help people practice healthy behaviors and change those that harm health and improving health includes developing the intervention system, The literature indicates when the individual performs of unhealthy behavior, he feels that certain health problem and has that leads to changing his behavior to doing some behaviors and activities as compensation for unhealthy behavior in order to raise his own ability to overcome this health problem.

Considering that outbreaks of new coronavirus (COVID-2019), Which led to the emergence of Panic disorder is one of the most prevalent and disabling psychiatric disorders and prevalence estimates of Panic disorder are twice as high in women as in men [2,3]. At this point the literature indicates that when individual performs an unhealthy behavior, he feels that certain health problem has leads to changing his behavior and doing some behaviors and activities as compensation for unhealthy behavior in order to raise his own ability to overcome this health problem, for example The individual knows that a novel coronavirus is harmful to his health, as feels a kind of psychological imbalance (epistemic contention) and until this indemnity of compensated for performs compensatory behavior that relieves panic disorder. The new coronavirus (COVID-2019) has spread very rapidly all over China and several other countries like Algeria, causing an outbreak of acute infectious pneumonia [4]. The epidemic brought not only the risk of death from the viral infection but also panic disorder to people. The continuous spread of the epidemic, strict isolation measures and delays in starting schools, colleges, and universities across the country is expected to influence the mental health of college students. There have been reports on the psychological impact of the epidemic on the general public, patients, medical staff, children, and older adults [5, 6, and 7]. However, no detailed study on the mental health status of college students facing the epidemic has been conducted to date. Psychotherapists point out that this is the most appropriate time to make a change in an individual's behavior and obtain assistance to move to the stage of action and compensation, and therefore needs (moral) support in getting rid of the feeling of swing and eagerness and his awareness of the seriousness of diseases and realizing his self-efficacy [8]. Compensatory health beliefs are more like education process, as a program for changing behavior and modifying through external intervention such as listening to health lecture or submitting to educational health program or others, and studies on the effect of health education have proven to increase society's awareness of health problems and that helps to prevent them, For example, educating a person with diabetes and his family about how to control the disease that it may ensure that lives a longer life.

In this study The Health Belief Model (HBM) was selected as a basis for investigating this research problem, as it has proven to be one of the most influential theories for explaining and predicting an individual's preventive health behavior. The HBM, originally developed to

evaluate preventive health behaviors [9], has proven its ability to predict a variety of behaviors associated with positive health outcomes   including panic disorder limitation.

1.1. New Coronavirus (Covid19)

The outbreak of new coronavirus pneumonia (NCP, also called COVID-19) since January 2020 is a sudden public health crisis, which spread from the city of Wuhan, China, to the whole country within a month, posing serious threats to lives. In the current epidemic situation, psychiatric institutions have already implemented the protective requirements for infectious diseases based on the fifth edition of the ``New Coronavirus Pneumonia Diagnosis and Treatment Plan''. During the outbreak period of NCP, psychological crisis intervention (PCI) is urgently need for all affected, including patients, medical staff, close contacts, people in affected areas, as well as the general public [10].

The Corona viruses already identified might only be the tip of the iceberg, with potentially more novel and severe zoonotic events to be revealed [11]. Now, the 2019 novel CoV (2019-nCoV) have led to more than 17,400 cases and 362 deaths till February 2, 2020. The global burden of coronavirus needs to be determined. In 2018, the World Health Organization (WHO) held its annual review of the Blueprint List of Priority Diseases, where Corona viruses were considered and included. These diseases, given their potential to cause a public health emergency and the absence of efficacious drug and vaccine, are considered to need accelerated research and development [12]. Given the current situation of the 2019 nCoV in China and multiple countries in different continents affected, the WHO declared this outbreak as a Public Health Emergency of International Concern (PHEIC) on Thursday, January 30, 2020 [13, 14].

1.2. Panic Disorder (PD)

Panic disorder (PD) is a disabling anxiety condition characterized by recurring panic attacks, anticipatory fear of future attacks, and in some individuals, varying degrees of avoidance of situations where panic attacks are more likely to occur [15]. The etiological pathways of PD are unknown, but research points to a complex interaction between biological, psychological, and environmental factors [16]. Effective treatments for PD exist, with selective serotonin-reuptake inhibitors, serotonin-noradrenaline reuptake inhibitors, and cognitive behavior therapy (CBT) considered first-line interventions according to treatment guidelines [17]. The choice of treatment depends on several factors, including previous response to treatment, presence of comorbid psychological disorders, availability and cost of treatment, clinician-patient alliance, and importantly, patient values, beliefs and preferences.

People often form personal beliefs about the origin of their illness, particularly when their symptoms disrupt their health and functioning [18]. Leventhal and colleagues [19, 20] developed a model of self-regulation of health and illness that posits that individuals from mental representations of health threats in order to understand them and manage them better.

1.3. Heath Belief Model (HBM)

The HBM was emerged by social psychologists, Godfrey Hochbaum and Irwin Rosenstock in the early 1950s [21]. It is the most common and most popular theoretical model in health-promotion behavior, and preventive health behaviors and focuses on people's beliefs about their decisions [22, 23]. HBM is one of the most applicable behavioral theories

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that predict two main categories of behavioral beliefs: perceived threat contains two sub-components perceived susceptibility and perceived severity. Perceived susceptibility or perceived vulnerability refers to people's perception of the risk or the chances of contracting health problems [24], perceived severity is defined as how serious a person judges the medical and social consequences of that problem to be. Perceived expectation also contains the positive outcomes that are achieved by healthy behavior as it pertains to the effectiveness of specific actions in decreasing the risk of health problem (perceived benefit) [25] and the obstacles a person thinks might prevent them from enacting a healthy behavior (perceived barriers) [26, 27].

2. The present study

This study is to synthesize the theoretical insights of the health belief model and seeks much needed empirical data on what is the nature of the relationship between compensatory health behavior and healthy self-regulation, and with the spread of epidemics such New Coronavirus (COVID19) and other epidemics and diseases in the world and particular in Algeria, the held that problem may be present in society by knowing the extent People practice compensatory behaviors for New Coronavirus (COVID19), and we as psychology specialists. In an attempt to study healthy compensatory behaviors where Panic Disorder is considered, it may affect a number of individual's sample of this study and may have the impact on health and the prevention New Coronavirus (COVID19), for the foregoing, and importance of this research emerges when dealing with these two variables; (PD, COVID19), whose study is one of the studies that participate in setting a new view of nature the relationship between the two variables.

The importance of our present study can be identified in following points; 1) uses a theoretical model (healthy belief) in measurement and interpretation, that great benefit in generating research and designing standards for healthy behavior. 2) Studies have proven its effectiveness and validity of high predictability that in diagnosis of individuals who transfer their health information and acquired at the level of actual behavior as in this study. 3) Through measuring the model healthy beliefs, it reveals the standard of health awareness among growing age group that becomes increasingly important for health practitioners which is youth segment.4) Detection the healthy self-organization has characterized of individuals who have fulfilled the conditions of healthy beliefs model in every details.5) Its serve of study results all individuals who suffer of panic disorder with regard to healthy aspect and their lives by directing their behavior so that they move within them that healthy self-regulation which ultimately leads to healthy beliefs that motivate them to practice healthy behavior. Glance (2002) [28]; explored etiological health beliefs model (HBM) in five variables are presented in (Table): 1) Perceptive Infection Susceptibility, 2) Perceptive Infection Cruelty, 3) Perceived Benefits, 4) Obstacles, 5) Motivated guides to act. Glance added to health beliefs model (HBM) with another five variables variable Self-efficacy it considered of responsible for people's readiness to behavior and its individual's confidence for ability to act successfully perform.

(Table 1): shows theoretical model of five components for health beliefs model (HBM) and adding self-efficacy.

Components	Variable	Belief	Application
1	Perceptive Infection Susceptibility	Person's opinion opportunities of Receive precautions Healthy for New Coronavirus (COVID19)	Knowing people at risk in sight Levels of that risk and diagnosed itS Health Risk based on the person's behavior awareness perceptive infection susceptibility.
2	Perceptive Infection Cruelty	Person's opinion in seriousness of situation and its results	Determine of situation and risk contexts
3	Perceived Benefits	Person's belief of efficacy Prevention to reduce infection risks	Knowing the homework (how, where) between positive expected influences
4	Obstacles	Person's opinion of materialism perceptible cost and psychological resulting cost about the prevention act	Knowing and reducing obstacles Through affirmations certainty and stimulus to lend a hand.
5	Motivated guides to act	Energizing strategies (Activate) preparatory behavior	Processing, how to information display, Improve awareness and guidance on how to Perform the act
6	Self-efficacy	Person's confidence of his ability to act	Training, coaching and guidance through Perform the act

In hypothesis model Fig (1); shows variables of health beliefs model (HBM) according to Glanz [28]; hi built this model on the basis of understand that a person will resort to act health-related when:

1) He avert feels negative Psychological condition, for example panic disorder (PD) he can modify current etiological beliefs about (COVID19) infect.

2) At the same time, it is expected to complied with avoidance recommendations (Such as; Avoid touching and friction with others), limit negative behaviors that increase outbreaks (COVID 19).

3) He believes that a healthy action we can be taken and continued with confidence to modify current etiological beliefs about Panic Disorder (PD).

4) Demonstrates adding self-efficacy with other variables of health beliefs model (HBM) before etiological beliefs about panic disorder (PD) and limit behaviors that increase outbreaks (COVID 19)
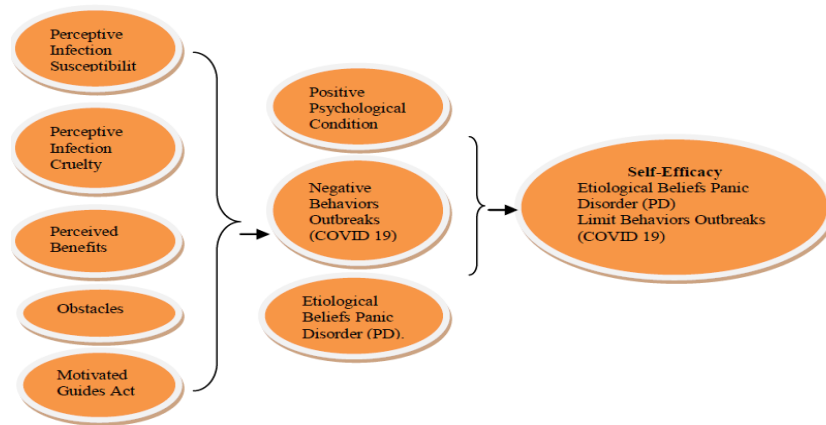
Fig. 1. Hypothesis health beliefs model (HBM)

3. Material and Methods
3.1. Participants

Participants were 300 patients suspected of being infected New Coronavirus (COVID19) with who underwent stone healthy in hotels where we contacted them via social media who met DSM-IV criteria for Panic Disorder (PD) (with or without agoraphobia) assessed by a interview and the structured clinical interview for DSM-IV (SCID; First et al., 1997) [29]. Participants had to: (a) be ≥ 18 years; (b) having a history of Panic Disorder (PD); and (c) is able to read and write. Participants support groups between 1 March 2020 and 30 March 2020. The coordinator of each on-line group was contacted for permission to contact group members. If permission was granted, all group members were sent an e-mail message containing a brief description of the study, an invitation to participate, and a link to a web-site containing the study survey. A survey was conducted to collect socio-descriptive (age, gender, educational level, and occupation).

3.1. Measures
3.1.1. Etiological model questionnaire (ETMQ)

Etiological beliefs were measured with the Etiological Model Questionnaire (ETMQ), adapted from Waikar [30] Etiological Beliefs Questionnaire (ETBQ). The ETBQ was developed by psychiatrists and psychologists with expertise in anxiety disorders in order to assess individuals' beliefs about the cause of their anxiety symptoms. The ETBQ consists of 22-items divided into biological and psychological scales. The items were chosen for their face validity, ease of classification and relevance, as judged by a small sample of participants. The adapted ETMQ used in the current study consisted of 30 items that were rated on a 0 ("not important at all") to 8 ("extremely important") scale. Participants indicated the extent to which they believed each item caused their initial panic attack and their current problems with anxiety and (PD) of New Coronavirus (COVID19) infection. The questionnaire was divided into Positive psychological condition, Negative behaviors that increase outbreaks (COVID 19), and Etiological beliefs about Panic Disorder (PD) subscales. The ETMQ was found to have a good level of internal consistency (Cronbach's alpha = 0.70) in the current sample.

3.1.2. Body sensations questionnaire (BSQ)

The Body Sensations Questionnaire (BSQ) [31] is a 17-item self-report scale that assesses the degree to which participants fear somatic sensations associated with panic. Items are rated on a five point scale ranging from 1 ("Not frightened or worried by this sensation") to 5 ("Extremely frightened by this sensation"). The BSQ has been shown to have good psychometric properties including high internal consistency (Cronbach's alpha = 0.88), acceptable test-retest reliability ($r = 0.77$), and a positive construct validity [32]. The BSQ had a good internal consistency in the current sample (Cronbach's alpha=0.78).

3.1.3. Agoraphobic cognitions questionnaire (ACQ)

The Agoraphobic Cognitions Questionnaire (ACQ) [31] is a 14-item self-report scale that catastrophic thinking about anxiety and panic [31]. Items were rated on a five point scale ranging from 1 ("Thought never occurs") to 5 ("Thought always occurs"). The instrument has good psychometric properties including test-retest reliability ($r = 0.69$), internally consistency (Cronbach's alpha = 0.80) and convergent and discriminant validity [32]. In the current sample, the internal consistency of the ACQ was acceptable (Cronbach's alpha = 0.75).

3.1.4. Sheehan disability scale

The Sheehan Disability Scale (SDS) [33] is a self report measure of impairment in the domains of work, social life and family life [33]. The degree of impairment in these domains is rated from 0 ("Not at all") to 10 ("Extremely") and the three subscales can be summed to provide a single dimensional measure of global functioning. The scale has been shown to have good internal consistency (Cronbach's alpha = 0.89) [34]. In the current sample however, the internal consistency of the SDS was relatively low (Cronbach's alpha = 0.60), although comparable to other studies of panic disorder that report alpha coefficients that range from 0.56 to 0.74 [35]. These alpha levels are considered acceptable for a scale comprised of only 3 items [35].

4. Results
4.1. Baseline predictors of etiological beliefs

Descriptive statistics and frequency distributions of linear regression analyses for the ETMQ- Positive psychological condition revealed that the full regression model was statistically significant ($F_{(4, 300)} = 5.04$, $p \leq 0.001$), with $R^2 = 0.31$ (R^2 Adjusted = 0.26). Inspection of individual beta coefficients (Table 1) revealed that four baseline variables contributed significantly to prediction of psychological etiological beliefs: age at baseline and scores on the BSQ, ACQ and SDS-Total. For the ETMQ- negative behaviors that increase outbreaks (COVID 19), the full regression model was statistically significant ($F_{(4, 300)} = 3.32$, $p \leq 0.001$), with $R^2 = 0.25$ (R^2 Adjusted = 0.17). Inspection of individual beta coefficients (Table 2) revealed that six baseline variables contributed significantly to prediction of etiological beliefs: age at baseline, sex, duration of PD, Perceptive Infection Susceptibility, Perceptive Infection Cruelty, Perceived Benefits, Obstacles, Motivated guides to act, and scores on the BSQ and ACQ. For the ETMQ- etiological beliefs about Panic Disorder (PD), the full regression model was statistically significant ($F_{(4,300)} = 3.79$, $p = 0.001$), with $R^2 = 0.15$ (R^2 Adjusted = 0.07). Inspection of individual beta coefficients (Table

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3) revealed that three baseline variables contributed significantly to the prediction of Self-efficacy etiological beliefs about panic disorder (PD) and limit behaviors that increase outbreaks (COVID 19) scores on the ACQ and SDS-Total.

(Table 2). Results of multiple linear regression analysis for baseline variables predicting positive psychological condition.

Predictors	B	β	t	p
Age	− 0.01	− 0.13	−2.15	0.03
Gender	0.05	0.02	0.35	0.73
Duration of PD	0.00	− 0.004	0.06	0.95
Perceptive Infection Susceptibility	− 0.03	− 0.01	− 0.20	0.85
Perceptive Infection Cruelty	− 0.24	0.10	1.88	0.06
Perceived Benefits	0.01	0.003	0.05	0.96
Obstacles	0.04	0.02	0.30	0.77
Motivated guides to act	0.48	0.11	1.91	0.06
Self-efficacy	0.11	0.04	0.79	0.43
ETMQ;				
ACQ	0.08	0.25	3.72	< 0.000
BSQ	1.06	0.14	2.12	0.04
SDS-Total	0.04	0.17	2.54	0.01

Note. N = 300. ETMQ = Etiological Model Questionnaire; BSQ = Body Sensations Questionnaire; ACQ = Agoraphobic Cognitions Questionnaire; SDS = Sheehan Disability Scale. B-unstandardized beta coefficient; β= standardized beta coefficient.

4.2. Outcome Analysis

Logistic regression for categorical treatment outcomes revealed that the etiological belief subscale by Hypothesis health beliefs model (HBM) group interaction coefficients were significant (0.05), indicating that Hypothesis health beliefs model (HBM) group did modify the association between any of the ETMQ subscales and Self-efficacy etiological beliefs about panic disorder (PD) and limit behaviors that increase outbreaks (COVID 19). As shown in (Table 2, 3), of the ETMQ subscales were significant predictors of categorical Hypothesis health beliefs model (HBM) outcomes.

(Table 3). Results of multiple linear regression analysis for baseline variables predicting negative behaviors that increase outbreaks (COVID 19).

Predictors	B	β	t	p
Age	− 0.01	− 0.14	− 2.04	0.042
Gender	− 0.11	− 0.12	− 2.01	0.046
Duration of PD	0.01	0.18	2.69	0.008
Perceptive Infection Susceptibility	− 0.01	− 0.01	− 0.01	0.90
Perceptive Infection Cruelty	0.10	0.11	1.74	0.083
Perceived Benefits	0.07	0.08	1.25	0.21
Obstacles	− 0.02	− 0.02	− 0.31	0.76
Motivated guides to act	− 0.05	−0.03	− 0.45	0.66
Self-efficacy	0.18	0.19	3.10	0.002
ETMQ;				
ACQ	0.41	0.24	3.31	0.001
BSQ	0.01	0.20	2.78	0.006
SDS-Total	0.00	0.004	0.05	0.96

Note. N = 300. ETMQ = Etiological Model Questionnaire; BSQ = Body Sensations Questionnaire; ACQ = Agoraphobic Cognitions Questionnaire; SDS = Sheehan Disability Scale. B-unstandardized beta coefficient; β= standardized beta coefficient

(Table 4). Results of multiple linear regression analysis for baseline variables predicting etiological beliefs about Panic Disorder (PD)

Predictors	B	β	t	p
Age	0.001	0.01	0.11	0.91
Gender	0.25	0.09	1.36	0.18
Duration of PD	− 0.01	− 0.07	− 0.95	0.35
Perceptive Infection Susceptibility	− 0.38	− 0.12	− 1.66	0.10
Perceptive Infection Cruelty	0.31	0.11	1.78	0.08
Perceived Benefits	0.02	0.01	0.10	0.92
Obstacles	− 0.39	− 0.13	− 2.04	0.04
Motivated guides to act	0.24	0.04	0.68	0.50
Self-efficacy	0.34	0.11	1.81	0.07
ETMQ;				
ACQ	0.77	0.15	1.96	0.05
BSQ	0.01	0.05	0.68	0.50
SDS-Total	0.05	0.16	2.17	0.03

Note. N = 300. ETMQ = Etiological Model Questionnaire; BSQ = Body Sensations Questionnaire; ACQ = Agoraphobic Cognitions Questionnaire; SDS = Sheehan Disability Scale. B-unstandardized beta coefficient; β= standardized beta coefficient

Linear regressions for the Hypothesis health beliefs model (HBM) subscales in (Table 5), also revealed that the ETMQ subscale by model indicators interaction coefficients were significant. Thus, a model was interaction with our indicators (Perceptive Infection Susceptibility, Perceptive Infection Cruelty, Perceived Benefits, Obstacles, Motivated guides to act). Etiological beliefs significantly predicted scores at Positive psychological condition, Negative behaviors that increase outbreaks (COVID 19), and Etiological beliefs about Panic Disorder (PD). For the overall regression model was significant for ETMQ-Positive psychological condition ($F_{(2, 300)} = 8.27$, p< 0.001), with $R^2 = 0.063$ (R^2 Adjusted = 0.055), Negative behaviors that increase outbreaks (COVID 19) ($F_{(2,300)} = 4.64$, p = 0.01), with $R^2 = 0.036$ (R^2 Adjusted = 0.028), and Etiological beliefs about Panic Disorder (PD) ($F_{(2, 300)} = 8.04$, p<0.001), with $R^2 = 0.061$, R^2 Adjusted = 0.053).

(Table 5). Summary of the logistic regression analyses predicting presence of Perceptive Infection Susceptibility, Perceptive Infection Cruelty, Perceived Benefits, Obstacles, Motivated guides to act from mean scores of the ETMQ for the samples.

Predictors	B	SE	Wald	P	OR (95% CI)
Perceptive Infection Susceptibility					
ETMQ- Positive psychological condition.	− 0.07	0.19	0.14	0.71	0.93 (0.64, 1.36)
ETMQ- Negative behaviors that increase outbreaks (COVID19)	− 0.13	0.16	0.67	0.41	0.88 (0.64, 1.20)
ETMQ- Etiological beliefs about Panic Disorder (PD)	0.12	0.17	0.51	0.48	1.13 (0.81, 1.57)
Perceptive Infection Cruelty					
ETMQ- positive psychological condition	0.07	0.13	0.26	0.61	1.07 (0.83, 1.39)
ETMQ- Negative behaviors that increase outbreaks (COVID19)	− 0.003	0.11	0.001	0.98	1.00 (0.80, 1.25)
ETMQ- Etiological beliefs about Panic Disorder (PD)	0.06	0.11	0.28	0.59	1.06 (0.86, 1.30)
Perceived Benefits					
ETMQ- Positive psychological condition	− 0.18	0.17	1.15	0.28	0.83 (0.60, 1.16)
ETMQ- Negative behaviors that increase outbreaks (COVID19)	− 0.02	0.14	0.01	0.91	0.98 (0.75, 1.30)
ETMQ- Etiological beliefs about Panic Disorder (PD)	0.12	0.13	0.06	0.35	1.13 (0.87, 1.47)
Obstacles					
ETMQ- Positive psychological condition	− 0.07	0.19	0.14	0.71	0.93 (0.64, 1.36)
ETMQ- Negative behaviors that increase outbreaks (COVID19)	− 0.13	0.16	0.67	0.41	0.88 (0.64, 1.20)
ETMQ- Etiological beliefs about Panic Disorder (PD)	0.12	0.17	0.51	0.48	1.13 (0.81, 1.57)
Motivated guides to act					
ETMQ- Positive psychological condition	0.07	0.13	0.26	0.61	1.07 (0.83, 1.39)
ETMQ- Negative behaviors that increase outbreaks (COVID19)	− 0.003	0.11	0.001	0.98	1.00 (0.80, 1.25)
ETMQ- Etiological beliefs about Panic Disorder (PD)	0.06	0.11	0.28	0.59	1.06 (0.86, 1.30)

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For the overall regression model was also significant for ETMQ Positive psychological condition, Negative behaviors that increase outbreaks (COVID 19), (F=7.71 (2, 173), p = 0.001), with R^2 b = b 0.082, (R^2 Adjusted = 0.071) and and Etiological beliefs about Panic Disorder (PD), (F(2, 173) = 6.90, p = 0.001), with R^2 = 0.074 (R^2 Adjusted = 0.063). The beta coefficients for each ETMQ subscales for the total sample are displayed in for the sample, participants with higher scores on the three ETMQ subscales were rated by blinded clinicians as having more a severe illness at Indicators ((Perceptive Infection Susceptibility, Perceptive Infection Cruelty, Perceived Benefits, Obstacles, Motivated guides to act).

5. Discussion

The present study exploring baseline predictors of causal attributions of panic disorder with outbreaks of New Coronavirus' Health Risk (NCHR) in Algeria as well as the impact these beliefs have on outcome in Negative behaviors that increase outbreaks (COVID 19), and Etiological beliefs about Panic Disorder (PD). Participants who experienced PD symptoms for a longer duration for lack of availability Positive psychological condition causes for their disorder. Similar to our finding, a study of causal attributions for Etiological beliefs about Panic Disorder (PD) that participants who endorsed Negative behaviors that increase outbreaks (COVID 19) causes for their condition reported a and Etiological beliefs about Panic Disorder. This study reached results based on a postulated that individual with Positive psychological condition explanations of symptoms may grow to believe that their condition is Able and develop prognostic factors (Perceptive Infection Susceptibility, Perceptive Infection Cruelty, Perceived Benefits, Obstacles, Motivated guides to act). Conceivably, possessing a fatalistic Healthy psychological explanation of illness could interfere with motivation and readiness to change as well as treatment seeking, engagement and outcome expectancies, which in turn, may contribute to a more of Self-efficacy etiological beliefs about panic disorder (PD) and limit behaviors that increase outbreaks (COVID 19). Unlike previous research that reported an association between the use of psychotropic medication and biological explanations of anxiety [30], and [36], we found no evidence that Positive psychological condition predicted etiological beliefs about the cause of PD. We did however find that Negative behaviors that increase outbreaks (COVID 19), and Etiological beliefs about Panic Disorder (PD). Several variables predicted multiple etiological beliefs. Younger age was found to predict psychological etiological beliefs of PD. Similar findings have been reported by others. Bann et al. (2004) [36] reported that older adults were less likely to attribute depressive symptoms to internal factors such as stress and thought processes and a large population-based study of causal beliefs about mental illness found that older adults (34–49 years) were less likely to endorse psychological beliefs than younger adults (18–34 years) [37]. Catastrophic thinking about anxiety and panic predicted all three etiological beliefs about PD, whereas fear of bodily sensations of arousal predicted both psychological etiological beliefs. The finding that negative beliefs about anxiety and panic predicted psychological causal attributions of PD is of interest considering the ACQ includes items related to psychological (e.g., fear of going crazy, being paralyzed by fear) concerns about anxiety symptoms. The relationship between fear of bodily sensations of arousal and psychological etiological beliefs is also notable and may influence how people with PD

experience the somatic symptoms of panic. It is well documented that individuals with PD are hypervigilent to bodily sensations of arousal [38].

Individuals with PD, especially those with agoraphobia, show less autonomy, self-confidence and affirmation, use more negative coping skills, exhibit more neurotic traits, are more irritable, hostile, and self-criticism [39]. Although it is unclear whether these negative psychological tendencies precede or are a consequence of PD, our findings suggest that greater functional impairment is linked with psychological attributions of PD. The present study is not without its limitations. First, our results did not reveal strong associations and findings should therefore be interpreted with caution. Second, we examined a limited number of demographic and clinical characteristics and it is possible that other factors such as education attainment, socioeconomic status, cultural background and response to previous treatments are stronger predictors of causal attributions of PD. Second, analysis of baseline characteristics and etiological beliefs was based on cross-sectional data and we cannot confirm that these variables of health beliefs model (HBM); (Perceptive Infection Susceptibility, Perceptive Infection Cruelty, Perceived Benefits, Obstacles, Motivated guides to act) are causal in shaping beliefs about the causes of PD.

5. Conclusion

Despite these limitations, the present study contributes to knowledge about causal attributions in PD. While we identified some demographic and clinical predictors of etiological beliefs about PD, additional research is needed to understand more fully how these beliefs are shaped, if beliefs change over the course of increase outbreaks (COVID 19) and the relative impact of etiological beliefs on treatment seeking behavior and treatment preference, perception of credibility, outcome expectancy, adherence and efficacy. It would also be important to explore how clinician allegiance to a health beliefs model (HBM) and how clinician and client beliefs about the cause of PD interact to influence treatment decision-making and outcomes. Finally, although this study was conducted within the context of a Survey study, our findings may have implications for usual care of PD and health education. Routine exploration of infected patients (COVID 19) explanatory health beliefs model (HBM) of PD during clinical interview may uncover misconceptions they have about the disorder and its treatment and allow for proper psycho educational interventions. As well, sensitivity to infected patients (COVID 19)' explanatory health beliefs model (HBM) of PD can help clinicians tailor their interventions so that they are better aligned with Infected patients(COVID 19).

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