

Research Article

# The Relationship Between Mind Wandering and Vulnerability of Obsessive-Compulsive Disorder: Self-Regulation as a Moderator

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## Abstract

There is a scarcity of studies that have focused on studying individuals targeted for suffering from obsessive-compulsive disorder, as it has been found that these individuals have high levels of mental wandering, or more precisely, they are preoccupied with thinking about a group of ideas that are completely far removed from the current moment in which they are living, and they cannot ignore such ideas, except in the presence of high levels of self-regulation, which prompts them to reduce their involvement with these distracting thoughts and thus reduce the issuance of compulsive behaviors as a result of thinking about them. Purpose: The current study hypothesized that self-regulation modifies the relationship between mind wandering and vulnerability of obsessive-compulsive disorder among university students. Method: Forty-five university students (37 females and 8 males) aged between 18-30 years (Mean = 22.58, S.D = 3.306). The students completed The Four Factors of Mind Wandering Questionnaire (4FMWQ), The Short Self-Regulation Questionnaire (SSRQ) and Yale-Brown Obsessive Compulsive Scale (Y-BOCS). Results: The absence of a modifying role of self-regulation in the relationship between Mind Wandering and Vulnerability of Obsessive-Compulsive Disorder. Conclusion: This prompts further future studies to determine the nature of the interaction between mind wandering and self-regulation and the role of this interaction in determining the level of vulnerability of obsessive-compulsive disorder.

## Keywords

Mind Wandering, Self-Regulation, Vulnerability of Obsessive-Compulsive Disorder, University Students

## 1. Introduction

Obsessive-compulsive disorder (OCD) is a highly debilitating condition, affecting approximately 1.3% of the global population [17]. Clinically, OCD involves two main aspects: first, obsessive thoughts centering around perceived problems that induce heightened anxiety. These obsessions are characterized by repetitive, persistent, and unwanted thoughts, such as concerns about contamination, which often lead to signif-

icant distress and anxiety. Second, compulsions manifest as behaviors or thoughts aimed at alleviating the problem or anxiety [43]. Cognitive models of OCD typically emphasize how ordinary thoughts can evolve into psychopathological obsessions and mental distress. Individuals who misinterpret or dwell on normal mental phenomena are more susceptible to developing symptoms of obsessive-compulsive disorder [24,

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46].

Based on the previous information, Obsessive-compulsive disorder (OCD) is characterized by frequent and severe intrusive thoughts that are unwanted, along with repetitive or ritualistic behaviors. Some of these obsessions are related to external factors, but OCD also includes the experience of spontaneous and unwanted thoughts, known as unintentional mind-wandering (MW), which enter one's consciousness abruptly without any identifiable triggering stimuli [18, 26]. Mind wandering, also referred to as "self-generated thoughts" or "stimulus-independent thoughts," constitutes a significant part of our daily mental activity [25].

Some researchers [2, 25] have suggested that individuals who are susceptible to obsessive-compulsive disorder have high levels of mental wandering, in other words, they are preoccupied with thinking about thoughts that are completely distant from the current moment they are experiencing, and they are unable to ignore such thoughts, which leads them to engage in compulsive behaviors towards them. They believe that it is a way to reduce the severity of these thoughts or stop thinking about them, so the current study was interested in verifying this hypothesis, as it is an important part of identifying some of the factors that contribute to the development of obsessive-compulsive disorder, and then preventing it by controlling it even in light of there is a high predisposition to developing this disorder. The current study found that self-regulation is one of the most important factors that help achieve this. This can be explained in detail as follows:

### 1.1. Relationship Between Mind Wandering and OCD

Obsessive and compulsive tendencies are not exclusive to individuals with diagnosed OCD but are also known to occur in the general population [1]. At an individual difference level within the general population, occasional intrusive thoughts are a common experience. While these intrusive thoughts are often seen as nothing more than a nuisance, they can pose significant challenges in daily life for some individuals. One category of intrusive thoughts is referred to as "obsessions," which are associated with obsessive-compulsive disorder (OCD) and frequently lead to significant distress and anxiety [2]. In many cases, individuals engage in compulsive, repetitive, and time-consuming behaviors as a way to alleviate the distress caused by these obsessions [2].

Another type of intrusive thought that is extensively studied in contemporary psychology is "mind wandering." Similar to the obsessive thoughts often seen in OCD, mind wandering is commonly described as unintentional thoughts that occur spontaneously [44]. It is a potentially problematic psychological phenomenon estimated to happen in approximately 50% of conscious thought processes [25]. Mind wandering has been linked to costly errors and accidents, and it can pose difficulties in various contexts, ranging from educational

settings [42], to the workplace.

Obsessive-compulsive tendencies have been found to be associated with experiences of mind wandering (MW) [43]. This connection is explained by the conceptual overlap between these constructs: MW involves a shift of attention towards inner cognitions rather than the external world, which can encompass memories, daydreams, semantic knowledge, and future thoughts. Similarly, OCD tendencies also involve this inward focus, and both can occur unexpectedly [1, 28]. More specifically, the intrusive nature of obsessional-compulsive (OC) thoughts aligns with the concept of spontaneous mind wandering, which refers to cognitions that arise without intention and with limited control over their content. In a recent study, it was found that spontaneous, as opposed to deliberate, MW predicted the type and severity of OCD symptoms in a non-clinical student population [44]. This highlights the conceptual differences between deliberate and spontaneous MW and opens up new avenues for research into OCD [43].

According to a dynamic framework of thought proposed by Christoff, Irving, Fox, Spreng, and Andrews-Hanna (2016), Mind Wandering (MW) is seen as a distinctive form of spontaneous thinking that is characterized by being less constrained and more goal-oriented when compared to rumination and obsessive thinking. MW has been found to be predictive of stress, depression, and anxiety, making it a prominent area of study in cognitive psychology [14]. Furthermore, MW offers a novel perspective by suggesting that spontaneous thoughts may have a role in the development and maintenance of OCD [43]. Additionally, MW is considered a specific subtype of out-of-context thought. Fradkin and Huppert discovered that individuals with OCD have a higher likelihood of recalling negative (as opposed to non-negative) out-of-context thoughts, implying that MW could be a potential risk factor for OCD [18]. Although there is an association between MW and OCD, the precise nature of their relationship is not well understood [47].

### 1.2. Relationship Between Self-Regulation and OCD

Self-regulation is a complex and systematic process that encompasses various individual abilities, including thinking, emotions, attention, and concentration [20]. This capacity plays a crucial role in shaping an individual's decisions, development, personality, and social behavior as they strive to attain their desired goals and adhere to behavioral standards [10]. The ability to regulate one's own behavior is fundamental for the establishment and maintenance of healthy habits, as well as for steering clear of engaging in risky behaviors like alcohol or drug consumption. While other factors can serve as motivators for adopting healthy habits, it's unlikely that these factors will lead to enduring behavioral changes unless individuals acquire the means to exert control over their motivation and health-related behavior [8]. The

significance of developing self-regulation becomes particularly evident during adolescence. Adequate self-regulation serves as a resilience factor when adolescents encounter the common risk-laden situations of this life stage. Moreover, it is recognized as one of the most critical psychological variables for promoting well-rounded personal, social, and academic development during adolescence.

Self-regulation plays a pivotal role in empowering individuals to formulate plans, select from various options, suppress unwanted thoughts especially among individuals who suffer from obsessive-compulsive disorder. Self-regulation also helps in managing their actions, even in situations where conflicts arise [23]. More specifically, once an individual sets a goal as a reference point to achieve, self-regulation becomes the mechanism through which they assess, approach, and ultimately attain that goal [11]. In the pursuit of this goal, individuals need to govern their thoughts and behaviors by channeling their effort and attention toward the required tasks [11]. Traditionally, the regulation of one's behavior in the pursuit of personal goals was believed to be a consciously controlled process, implying that it required minimal executive resources [22, 39]. However, recent evidence suggests that a significant portion of our cognitive and behavioral regulation can occur nonconsciously through the interaction of situational cues, mental representations of desired outcomes, and ingrained behaviors that can be executed efficiently yet adaptably [39].

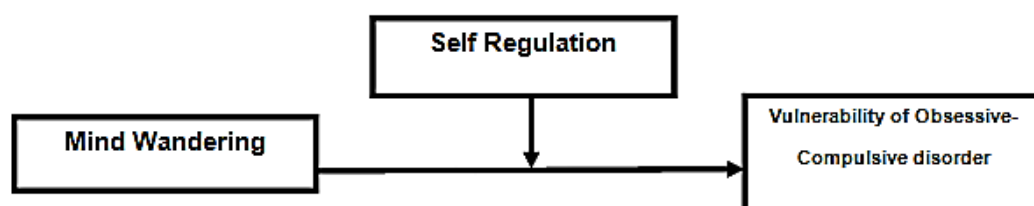
### 1.3. Relationship Between Mind Wandering and Self-Regulation

Kanfer and Ackerman proposed three interdependent activities of self-regulation: self monitoring, self-evaluation, and self-reaction [22]. Self monitoring refers to “the individual’s allocation of attention to specific aspects of his or her behavior as well as the consequences of the behavior” [22].

Self-monitoring usually occurs in response to internal or external goals. For example, if performance outcomes are considered important, then more attentional resources are allocated to observe those outcomes. Self-evaluation (i.e., performance evaluation) involves “a comparison of current performance with the desired goal state; individuals check their progress against a standard or referent” [22]. Lastly, self-reaction involves self-satisfaction and perceptions of task-specific capabilities [22].

Self-regulation theories explain how attentional resources are directed toward a goal [15]. Mind wandering, on the other hand, signifies attentional resources being redirected inward, away from tasks related to the goal [44]. Therefore, mind wandering could be seen as a self-regulatory breakdown, possibly influenced by self-regulation factors that haven't been explored in mind wandering research. Mind wandering can lead to a loss of control over attention. In tasks like Sustained Attention to Response Tasks (SART), mind wandering is linked to reduced performance [13]. This means that when people's minds wander, they may fail to detect new stimuli and may also struggle to suppress automated responses. SART is so closely associated with mind wandering that it's often used as a behavioral marker for it. However, mind wandering can also have positive outcomes, such as enhancing creative performance. In divergent thinking tasks, participants generated more creative solutions after experiencing mind wandering [7]. Nevertheless, it's challenging to determine whether participants are mind wandering about the task itself or unrelated life matters. If their minds are drifting to irrelevant concerns, it's possible that mind wandering might not have the same impact on creativity.

Based on the above, the current study assumes that self-regulation is a modifying variable in the relationship between mental wandering and Vulnerability of Obsessive-Compulsive disorder.



**Figure 1.** The relation between mind wandering and vulnerability of obsessive-compulsive disorder: self-regulation as a moderator.

Individuals who have high levels of self-regulation are able to control the amount of thoughts flowing through their minds, and not indulge in them excessively, which reduces the possibility of them developing obsessive-compulsive disorder, despite their high predisposition to developing this disorder.

## 2. Literature Review

## 2.1. Mind Wandering

From the beginning of the 21st century onward, there has been a renewed and growing scientific interest in the examination of self-generated mental activity, often referred to as MW [see Smallwood & Schooler, 2006]. This reflects a significant shift in psychological research away from the exclusive focus on conscious thought and observable behaviors [45]. Indeed, the delay in the exploration of MW can be partly ascribed to the dominance of behaviorism within the realm of psychological research during the latter half of the 20th century. The preference for this approach caused influential senior psychologists and esteemed journals to disregard this topic [36]. Consequently, it has been suggested that the focus on analyzing external tasks has led to erroneous conclusions regarding self-directed mentation (Smallwood & Schooler, 2014) [36].

Since 2006, there has been a remarkable surge in the use of the term "MW" which distinguishes it from other related concepts [36]. Previously, various terms such as "absence of mind," "attention distraction," and "daydreaming" were employed to convey the idea of MW, as it inherently diverts an individual's attention away from the current task and directs it towards unrelated topics. However, these terms failed to provide a comprehensive explanation of the phenomenon of mental wandering [29]. Researchers came to the conclusion that while individuals sometimes intentionally engage in MW, it can also occur spontaneously and doesn't necessarily indicate a failure of cognitive abilities. Consequently, they began to adopt a different term that more accurately captures the essence of this cognitive trait [43]. MW occurs when an individual's focus shifts from the present task or external surroundings to internal thoughts, such as memories and future-oriented thoughts that are unrelated to the task at hand [41, 40, 44]. While MW continues to be a subject of study, its theoretical foundations remain somewhat inconsistent, and experimental methods are still in the process of development [37].

## 2.2. Self-Regulation

Various authors have identified self-regulation as the capacity to manage and demonstrate appropriate behaviors, considering it a cyclical process that consists of three components: forethought, performance control, and self-reflection [50, 38]. Despite differences in the conceptualization of self-regulation, there is a strong consensus that self-regulatory skills play an important role in many areas of life. For instance, a high level of self-regulation is positively related to school achievement. The ability to self-regulate is also associated with well-being and mental health. In contrast, people with poor self-regulation skills can be more vulnerable to external stimuli like social stressors and more likely to fall into addictions and psychosomatic diseases (Pichardo-Martínez, Cano, Umerenkova, Jesus de la Fuente, Peralta-Sánchez & Amate,

2018).

In general, self-regulation refers to self-control and evaluation behavior. As stated by Hude that self-regulation refers to control of emotion in certain situation in order to stop or manage the emerged emotion before reacting on certain events [47]. Also self regulation is a complex, multicomponent construct operating across several levels of function (e.g., motor, physiological, social-emotional, cognitive, behavioral and motivational), which, in its broadest sense, represents the ability to volitionally plan and, as necessary, modulate one's behavior(s) to an adaptive end [33]. While differences in experience, environment and ideas of individuals can influence the behavior they do. Self-regulation is influenced by several factors such as individual characteristics and personality, believed culture and religion, motivation, confidence and triggering situation that causes the emergence of regulation process [47, 49].

Self-regulation is a "normative developmental process" influenced by "bio psychosocial factors [34]. It means that every individual develops self-regulation with age. The trajectory of this development is determined by temperament but can also be stimulated by social contexts and environmental factors [16, 21]. The influence of the environment on self-regulation is especially prominent in early childhood and adolescence. In early childhood, self-regulation develops dynamically through co-regulation and modeling from caregivers. Role models with high self-regulation skills who offer a warm, responsive, and supportive environment are important at that stage [33]. During adolescence, intense social interactions with peers and romantic partners have a further impact on the development of self-regulation skills [16, 19].

## 2.3. Vulnerability of Obsessive-Compulsive Disorder

Vulnerability means the probability or likelihood of experiencing a certain disorder or encountering a problem if its causes are present. In the clinical psychological context, the concept of targeting describes the extent to which individuals are susceptible to being exposed to circumstances referred to as "risk or Vulnerability factors," which are statistically associated with an increased likelihood of danger occurring. This concept also indicates that targeting factors consist of behavioral, structural, environmental, or personal characteristics that are linked to an increased probability of experiencing the disorder [9].

Cognitive models concerning OCD underscore the significance of how individuals interpret intrusive thoughts, particularly regarding their personal significance, the likelihood of harm, and a sense of responsibility. These models explain the shift from normal to abnormal experiences through these catastrophic interpretations. Individuals who interpret their intrusive thoughts problematically are seen as more susceptible to obsessions. To clarify the origins of such interpretations, Rachman (2006) outlined four factors contributing to



vulnerability: (1) heightened moral standards, (2) cognitive biases like thought-action fusion, (3) depression, and (4) a tendency toward anxiety. Salkovskis, Shafran, Rachman, and Freeston (1999) highlighted early life experiences as a source for developing an inflated sense of responsibility. There is evidence suggesting that certain dysfunctional beliefs, like feelings of responsibility and overestimation of threat, attaching significance and control to thoughts, perfectionism, and a lack of tolerance for uncertainty, could serve as susceptibility factors in OCD [12, 48].

There are additional significant vulnerability factors that are not exclusive to OCD but are thought to contribute to the development of cognitive vulnerabilities specific to OCD. Low self-esteem, for instance, is one example, as individuals with pre-existing negative self-perceptions are believed to be more inclined to interpret their intrusive thoughts in personally significant and catastrophic manners. Negative affectivity is another non-specific factor associated with metacognition. Likewise, certain personality traits such as neuroticism, psychoticism, and introversion have been found to be linked to OCD [48].

### 3. Method

The Materials and Methods section should provide comprehensive details to enable other researchers to replicate the study and further expand upon the published results. If you have multiple methods, consider using subsections with appropriate headings to enhance clarity and organization.

#### 3.1. Sample

The study sample consisted of 45 university students of both genders (8 males and 37 females), and it was a non-probability sample (Volunteer sample). The ages of the study sample ranged from 18 to 30 years, with an average age of (22.58) years and a standard deviation of (3.306) years. All participants were equivalent in intelligence and socioeconomic level.

#### 3.2. Tools

##### 3.2.1. The Four Factors of Mind Wandering Questionnaire (4FMWQ)

Developed by [27], the 4FMWQ is a 16-item self-report questionnaire that comprises four subscales assessing different facets of mind wandering as a trait: Failure in social interaction (i.e., Lose the thread of the discourse because, while you were talking, you were thinking of something else), Failure in interaction with objects (i.e., Put back an object in the wrong place (put the keys in the wardrobe), Unawareness (i.e., Realize you were doing or did something without thinking about it), and Inattention (i.e. Think how hard it is to concentrate).

Failure in social interaction and Failure in interaction with objects represent the outcomes of MW during interactions with other people and with objects such as personal belongings, respectively. Unawareness captures a lack of disposition to be aware of one's own feelings, thoughts, and proprioception. Finally, Inattention often manifests as a generally limited attention span, distractibility, or forgetfulness (e.g., Chervin et al., 2002). This lack of ability to focus on a given task, event, or situation interferes with individual cognitive functioning [27].

In the current study, Item (16) which is among the items that measure the inattention component, was deleted due to the similarity of its content to Item (8). Therefore, the number of final items for the scale became 15 items. The items are rated on a 5-point Likert-type scale ranging from 1 (never or very rarely true) to 5 (very often or always true). For each scale, higher total scores indicate higher levels of mindfulness. The measure is reported to have good reliability (Cronbach's alpha) and construct validity (measured through Exploratory analysis) (Table 1).

##### 3.2.2. The Short Self-Regulation Questionnaire (SSRQ)

Self-regulation is the ability to develop, implement, and flexibly maintain planned behavior in order to achieve one's goals. Building on the foundational work of Frederick Kanfer (Kanfer, 1970a, 1970b), Miller and Brown formulated a seven-step model of self-regulation [32]. In this model, behavioral self-regulation may falter because of failure or deficits at any of these seven steps: Receiving relevant information, Evaluating the information and comparing it to norms, Triggering change, Searching for options, Formulating a plan, Implementing the plan, Assessing the plan's effectiveness [32, 35].

The Short Self-Regulation Questionnaire (SSRQ; Carey et al., 2004) The SSRQ is a 31-item scale that was designed to assess self-regulation capacity across the seven processes of self-regulation. based on the Self-Regulation Questionnaire (SRQ) [32] Items are scored on a 5-point scale from 1 – strongly disagree to 5 – strongly agree. and can be summed to create a total score. A previous study by Neal and Carey (2005) indicates that the SSRQ has two distinct factors; an impulse control and a goal-setting factor. Questions on the impulse control factor include for example: "It's hard for me to notice when I've had enough (alcohol, food, sweets)," or "I am able to resist temptation." Questions on the goal setting factor include for example: "Once I have a goal, I can usually plan how to reach it" or "I am able to accomplish goals I set for myself" (Pichardo, Justicia, Fuente & Martínez-vicente, 2014). Researchers in the current study used the short version of the self-regulation questionnaire, with some modifications such that two items (9-26) were deleted, and 13 items were added from the full version of the scale. The measure is reported to have good reliability (Cronbach's alpha) and construct validity (measured through Exploratory analysis) (Table 1).

### 3.2.3. Yale-Brown Obsessive Compulsive Scale (Y-BOCS)

The Y-BOCS scale, which is a 10-item scale, was designed to assess the severity of symptoms of obsessive-compulsive disorder, and it has been used in many studies [1, 28] to determine who is targeted by this disorder by obtaining 8 degrees or higher on this scale (and this is what was relied upon in The current study). The Y-BOCS provides five rating dimensions for obsessions and compul-

sions: time spent or occupied; interference with functioning or relationships; degree of distress; resistance; and control (i.e., success in resistance). The 10 Y-BOCS items are each scored on a four-point scale from 0 = "no symptoms" to 4 = "extreme symptoms." The sum of the first five items is a severity index for obsessions, and the sum of the last five an index for compulsions [6]. The measure is reported to have good reliability (Cronbach's alpha) (Table 1), and the acceptable validity of this scale has been verified on various samples in several studies [4, 3].

**Table 1.** Reliability and Validity of tests (4FMWQ, SSRQ & Y-BOCS).

Variable	Alpha Cronbach Reliability N=45	Exploratory Factor Analysis N=100	
		KMO	Saturation coefficient by the first factor before rotating
The Four Factors of Mind Wandering Questionnaire (4FMWQ)	0.775	0.796	From 0.353 to 0.565
The Short Self-Regulation Questionnaire (SSRQ)	0.758	0.725	From 0.497 to 0.688
Yale-Brown Obsessive Compulsive Scale (Y-BOCS)	0.700		

Table 1. indicates that the reliability coefficient and construct validity of all the measures were acceptable.

### 3.3. Data Collection

Before completing the measures, the participants informed that participation was voluntary. Furthermore, they assured of anonymity and confidentiality with regard to their responses and were not required to write their names on the form. The application relied on the use of the Internet for easy access to a large number of participants from different segments, as the tool was designed electronically using Google Form. In designing the electronic survey, it was taken into account that all responses to its items are obligatory and that the participant responds only once. The electronic survey begins by providing a definition of the nature of the research and urging participants to cooperate. The application took a month (December 2023), and answering the scale took approximately 10 minutes.

## 4. Results

### 4.1. Correlations

Pearson's product moment correlations were performed to reveal the relationships between the variables in the current study. The results are displayed in Table 2.

**Table 2.** Pearson correlation among mind wandering and vulnerability of obsessive-compulsive disorder.

Independent variable	Dependent variable	R
mind wandering	vulnerability of obsessive-compulsive disorder	0.438**

\*\*. Correlation is significant at the 0.01 level (2-tailed).

An examination of Table 2 reveals a moderate positive and significant relationship between mind wandering and vulnerability of obsessive-compulsive disorder.

### 4.2. Moderator Analyses

Based on the linear regression results SPSS, vulnerability of obsessive-compulsive disorder as dependent variable and mind wandering and self regulation as the independent variables (Table 3).

A study of table 3 shows that There is no effect of the interaction between mind wandering and self-regulation on vulnerability of obsessive-compulsive disorder, which indicates the disappearance of the modifying role of self-regulation in the relationship between mind wandering

and vulnerability of obsessive-compulsive disorder.

**Table 3.** Multiple Linear Regression of mind wind wandering and self-regulation (independent variables) and vulnerability of obsessive-compulsive disorder (dependent variables).

Predictor	Dependent	R <sup>2</sup>	B	Beta	T	sig
Mind wandering	vulnerability of obsessive-compulsive disorder	0.438	0.220	0.436	3.178	0.003
Self-Regulation	vulnerability of obsessive-compulsive disorder	0.133	-0.062	-0.129	-0.939	0.353
Interaction Mind wandering * Self-regulation	vulnerability of obsessive-compulsive disorder	0.464	0.413	0.091	0.618	0.540

\* p < .05

## 5. Discussion

The current study indicated the absence of a moderating role for self-regulation in the relationship between mental wandering and vulnerability of obsessive-compulsive disorder. In this context, we tried to provide several explanations for the result of the current study, at two levels: the first level includes explanations related to theoretical aspects, while the second level is concerned with providing methodological explanations and includes the nature of the study sample.

### First: Explanations Related To Theoretical Aspects

Self-regulation as a mediating variable in the relationship between mental wandering and vulnerability of obsessive-compulsive disorder: This is due to the nature of the sample used in the current study, which consists of individuals who have a high vulnerability of obsessive-compulsive disorder. Some studies have indicated that these people have low levels of self-regulation, and this leads them to their inability to control their mental wandering, whether at the level of the flow of thoughts. Or thinking about it for long periods of time, which makes them perform compulsive actions in the belief that this will take them out of the cycle of continuous thinking about a specific idea.

Determine how the subcomponents of mind-wandering and self-regulation interact and the extent to which this influences increased susceptibility to developing obsessive-compulsive disorder: The current study relied on the total score for the variables to be studied, and this may somewhat overlook the deep relationships between them, as calculating the total score for the variables may hide their features to a large extent, and thus do not show the effect of the interactions between them in a clear and accurate manner.

### Second: Explanations Related To Methodological Aspects

Sample of the current study: Although the sample of the current study was chosen with an appropriate number of male and female university students, from various theoretical and

practical faculties, it lacks many aspects, which contributed to the introduction of some extraneous variables, and then re-considering the results that were reached. The extraneous variables were represented in the following:

Sex variable: A review of previous studies that focused on studying creative abilities indicated that there are differences between males and females in the variables of the study [31, 30] and therefore the modifying role that self-regulation plays in the relationship between mental wandering and the predisposition to developing obsessive-compulsive disorder may differ. Despite this, it was not The current study is unable to establish differences between genders, due to the significantly smaller number of males in the study sample compared to females, so the comparison is not fair.

Application conditions: Some of the sample members participated in the current study after the end of their school day, and then they felt tired or bored during the application, which negatively affected the results of the study.

## 6. Conclusions

Although some studies indicate the relationship between the study variables, there are still unanswered questions about determining the type of interaction between mental wandering and self-regulation and the extent of their contribution to increasing the vulnerability of obsessive-compulsive disorder. Accordingly, the purpose of this study was to investigate the hypothesis that self-regulation plays a modifying role in the relationship between mind wandering and vulnerability of OCD. The results showed that the hypothesis of the current study was incorrect. The current results require further investigation and validation by revealing differences between males and females in the level of mental wandering and self-regulation, and knowing the nature of the interaction between them and its role in determining the level of vulnerability of obsessive-compulsive disorder. It is recommended to explore this phenomenon in future studies.

## 7. Limitations and Future Research

Although the study contributes to the existing literature, it has two limitations. First, the results cannot be generalized because a nonrandom sample was used. Secondly, various factors such as gender were not taken into account in this study. This factor may have influenced the results.

## Abbreviations

OCD: Obsessive-Compulsive Disorder

4FMWQ: The Four Factors of Mind Wandering Questionnaire

SSRQ: The Short Self-Regulation Questionnaire

Y-BOCS: Yale-Brown Obsessive Compulsive Scale

## Author Contributions

**Mona Kotb Mohamed:** Conceptualization, Resources, Writing - original draft, Methodology, Visualization, Project administration

**Rehab Mohamed Ahmed:** Resources, Data curation, Formal Analysis, Supervision, Validation, Investigation, Methodology, Writing – original draft, Project administration, Writing – review & editing

## Conflicts of Interest

The authors declare no conflicts of interest.

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