MLS PSYCHOLOGY RESEARCH
https://www.mlsjournals.com/Psychology-Research-Journal

ISSN: 2605-5295

How to cite this article:

Sánchez Alonso, J. (2021). Drogodependencia y desregulación emocional: una revisión sistemática. MLS Psychology Research 4 (1), 59-78. doi: 10.33000/mlspr.v4i1.597.

DRUG DEPENDENCE AND EMOTIONAL DYSREGULATION: A SYSTEMATIC REVIEW

Javier Sánchez Alonso
Universidad Europea del Atlántico (Spain)
javier.sanchez1@alumnos.uneatlantico.es

Abstract. Introduction: Emotional regulation has been linked to a large number of mental disorders. Its definition has had some controversy and distinctions according to the author. Two explanatory models of emotional regulation are provided: the emotional regulation process model and the emotional regulation model based on emotional processing. Likewise, the relationship of this ability with the consumer population and the current state of consumption in Spain are explained. The objective of this study is to study the most recent scientific information, evaluate the usefulness of emotional regulation for prevention and intervention in drug addicts, and more specifically, identify and analyze the existing relationship, the evaluative techniques, and the sample used. Method: The selection of articles has been made from 2016 to 2020, these being related to emotional regulation and the drug dependent population. Searches were carried out in Scopus and Psycinfo, using the following terms: "emotional regulation" AND "drug addiction". Results: Of the total number of potential articles, 20 were selected that met the established inclusion and exclusion criteria. Numerous beneficial relationships between emotional regulation and drug addicts stand out, focusing the research found in adult populations. Likewise, a series of instruments used for the evaluation of the emotional regulation. Discussion: In this review it is concluded that emotional regulation has a great influence on the drug-dependent population, obtaining numerous benefits from its development, which are given at a level of both prevention and intervention.

Keywords: emotional regulation, emotional intelligence, drug dependence, addiction, systematic review.

DROGODEPENDECIA Y DESREGULACIÓN EMOCIONAL: UNA REVISIÓN SISTEMÁTICA

Resumen. Introducción: La regulación emocional se ha relacionado con gran cantidad de trastornos mentales. Su definición ha tenido cierta controversia y distinciones según el autor. Se aportan dos modelos explicativos de la regulación emocional: el Modelo procesual de regulación emocional y el Modelo de regulación emocional basado en el procesamiento emocional. Asimismo, se explica la relación de esta habilidad con la población consumidora, y el estado actual de consumo en España. El objetivo de este estudio es estudiar la información científica más reciente, evaluar la utilidad de la regulación emocional para la prevención y la intervención en personas drogodependientes, y de manera más específica, identificar y analizar la relación existente, las técnicas evaluativas, y la muestra empleada. Método: La selección de artículos se ha realizado desde el año 2016 hasta 2020, estando estos relacionados con la regulación emocional y la población drogodependiente. Fueron ejecutadas búsquedas en Scopus y Psycinfo, utilizando los siguientes términos: "emotional regulation" AND "drug addiction". Resultados: Del total de artículos potenciales, se seleccionaron 20 que se ajustaban a los criterios de inclusión y exclusión establecidos. Se destacan numerosas relaciones beneficiosas entre la regulación emocional y las personas drogodependientes, centrándose las investigaciones encontradas en poblaciones adultas. Asimismo, se distinguen y describen una serie de instrumentos empleados para la evaluación de la R.E. Discusión: En esta revisión se concluye que la regulación emocional tiene una gran influencia en la población drogodependiente, obteniéndose de su desarrollo numerosos beneficios, los cuales se dan a un nivel tanto de prevención como de intervención.

Palabras clave: regulación emocional, inteligencia emocional, drogodependencia, adicción, revisión sistemática.

Introduction

Emotional regulation (ER) is key in various disorders such as addictions, self-injurious behaviors, mood disorders, or anxiety disorders, being found in these dysfunctional regulation strategies (McNally, Palfai, Levine, & Moore, 2003; Gratz, 2003). In general, a person with less capacity to regulate his emotions will present difficulties in his daily life, appearing together with these psychological disorders; this is because emotions have an adaptive function to the environment, facilitating decision making and preparing the individual to act (Gross, 1999).

When analyzing the publications related to this topic, a marked increase can be seen in recent years. As can be observed in *Figure 1,* the published documents related to emotional regulation have a gradual increase in the last 20 years, indicative that there is a greater interest in what concerns this topic.

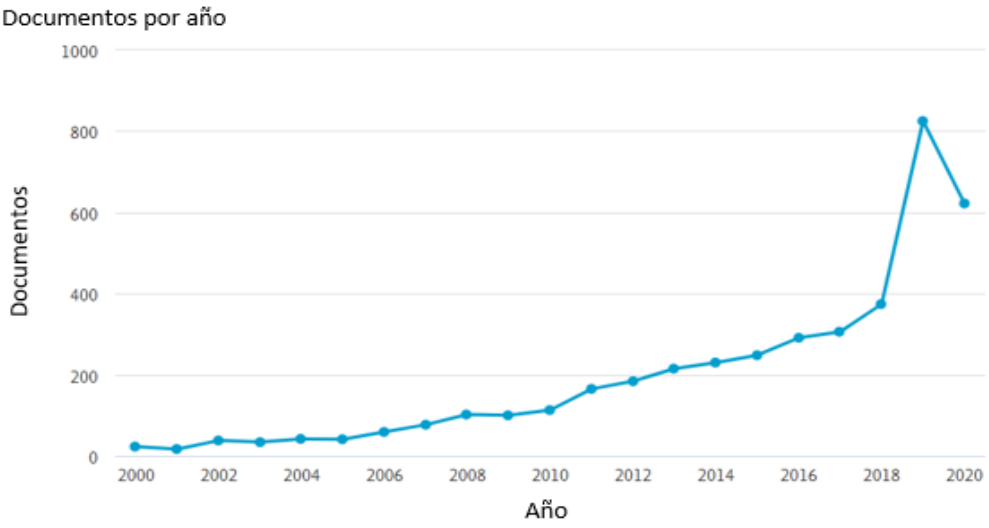

Figure 1. Documents by year published with the term "emotional regulation" in the area of psychology in the last 20 years. Copyright 2020 by Scopus.

In *Figure 2,* an increase in the interest of the ER related to substance addiction is observable, the increase in this case is not as marked as in the previous one, but it continues to show a tendency to grow.

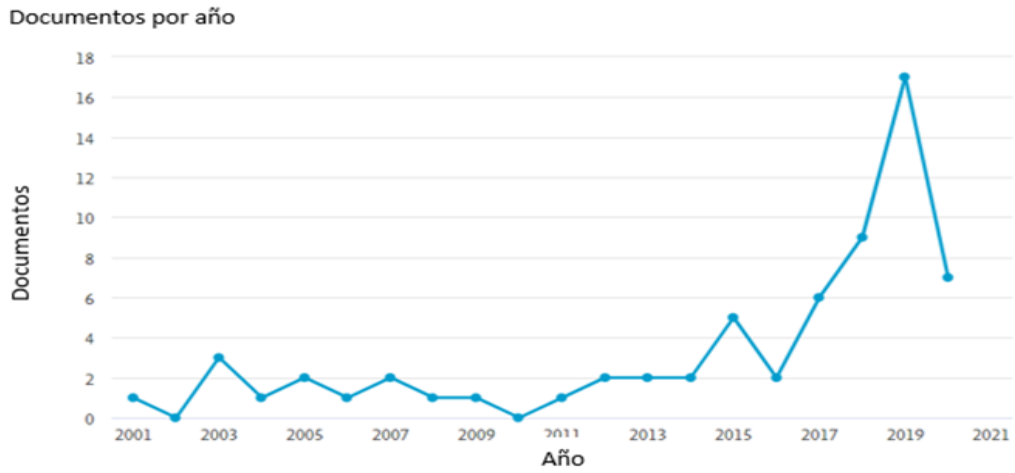

Figure 2. Documents published by year with the terms "emotion regulation" and "drug addiction" in the area of psychology in the last 20 years. Copyright 2020 by Scopus.

Thompson (1994) and Gross (1999) agree that ER consists of the control or management of our emotions; such management can be functional or dysfunctional. In addition to the above, emotion regulation can be understood as the key process of emotional intelligence (E.I.) (Brenner & Salovey, 1997; Extremera, Durán, & Rey, 2005; Jiménez & López-Zafra, 2008; Pérez & Castejón, 2006), this aspect makes certain authors refer to both concepts as similar, although to be exact, ER should be included as a skill within EI. There are four levels of interaction between behavior and emotion, being factors of great importance when carrying out functional and adaptive behaviors:

1. The perception, evaluation, and expression of emotion.
2. The facilitating effect of emotions with respect to thinking.
3. The understanding and analysis of emotions using emotional knowledge.
4. Reflective regulation of emotions to promote intellectual and emotional growth.

There are several explanatory models of ER; in this review, two models stand out: the *Process model of emotional regulation (*Gross, 1999) and the *Emotional regulation model based on emotional processing* (Hervás, 2011). The selection of these two models, over others, is because they encompass the characteristics of ER, complementing each other.

The process model of emotional regulation (Gross, 1999)

This author differentiates several phases: Situation-Attention-Interpretation-Response. Emotional regulation strategies can be established according to the phase in which one finds oneself. Gross (1999), differentiates regulation focused on the antecedents of the emotion, and regulation focused on the emotional response.

In the first phase, people can choose or avoid different situations based on our previous experiences, preferably choosing situations that provoke positive emotions. In addition, within the situation itself, the person can choose the path he or she wishes to take.

Regarding attention, it has been seen that the attentional focus has a great relevance in the emotional response of the person. Research has corroborated that this attention can be trained and automated using very few cognitive resources (Wadlinger & Isaacowitz, 2011).

Interpretation is the phase on which most therapies have focused by working on emotional regulation, through cognitive reappraisal, demonstrating its influence on the subsequent emotional response.

Finally, there is the emotional response; in this case, we can work on various aspects such as emotional experience, behavioral expression/manifestation, or physiological activation. At the clinical level, the aim is to reduce the psychobiological level of the emotion.

Several limitations have been highlighted around this model, among them: nothing is said about emotional acceptance as an emotional regulation strategy, when it has widely demonstrated its positive effects (e.g., Alberts, Schneider, & Martijn, 2012; Liverant, Brown, Barlow, & Roemer, 2008). Second, the way in which Gross poses this model can lead to elaborate maladaptive behaviors, mostly focused on avoidance.

Emotional regulation model based on emotional processing (Hervás, 2011).

There are authors who defend that in order to regulate emotions, an active process of understanding and elaboration of the emotion is necessary (Hunt, 1998).

Stanton, Kirk, Cameron, and Danoff-Burg (2000), integrate emotional processing as a type of emotional coping, considering the latter as the ability to cope with a high intensity emotion. This study differentiates between emotional expression, considering it as the ability to recognize the emotion and express it through a corresponding behavior; and emotional processing, as the ability to know and understand the emotion.

This model argues that emotional processing is not only valid for high intensity emotions, but that it has positive effects for any situation, establishing six phases necessary for optimal emotional processing.

1. Emotional openness. Ability to be aware of your emotions.
2. Emotional attention. A range of attentional resources must be devoted to emotion (Gratz & Roemer, 2004; Salovey, Mayer, Goldman, Turvey & Palfai, 1995).

The first two phases can be related to Gross's (1999) stage of attention.

3. Emotional acceptance. Avoid making a negative judgment about the emotion (Gratz & Roemer, 2004).
4. Emotional labeling. A person's ability to recognize what he or she feels and put a "name" to it (Gratz & Roemer, 2004; Salovey et al., 1995).
5. Emotional analysis. A person's ability to understand what he or she is feeling and to reflect on it (Stanton, Kirk, Cameron & Danoff-Burg, 2000).

In this phase, there are a series of elements to be analyzed: first of all, the origin, that is, *where* the emotion comes from; then it is necessary to understand *why* it has appeared, that is, *what it* means. Many times emotions are activated through a series of mechanisms by mistake, it is necessary to observe if the emotion is coherent in the situation experienced; and, finally, if the emotion is coherent, it is necessary to *learn* from it.

6. Emotional modulation. Using various strategies to manage the emotion felt (Gratz & Roemer, 2004; Salovey et al., 1995).

Regarding its relationship with drug dependence, the study conducted by Fernández, Jorge & Bejar (2009) revealed that both substance abuse and consumption is used as an external self-regulation technique, i.e., as a way of relieving negative emotional states. This is also appreciable in the research carried out by Echeburúa & Corral (1999), in which it was found that a person who presents a dependence or addiction would tend to perform the behavior in question, in order to reduce the negative emotional states present.

Taking into account the aforementioned results, it can be inferred that addicts lack essential tools such as how to discriminate between emotions, how to express and regulate them, as well as how to guide their thinking and behavior; these tools would be very useful to this group in order to face their problematic consumption.

In Spain, one of the latest carried out surveys on alcohol and drugs (EDADES Study 2017-2018) identifies that the age of onset of consumption is less than 13 years, although the average age of consumption would be at 32 years. Likewise, there is an increase in legal drugs such as alcohol and tobacco, and with regard to non-legal drugs, it is worth highlighting the increase in cannabis consumption, especially in adolescents and young adults. All of this shows the importance of providing help for this problem, both in terms of prevention and intervention.

It is true that the study on the relationship between EI and substance addiction is still recent; however, there are studies that seem to indicate and affirm that such intelligence intervenes in a positive way in its relationship with addictions. Apart from the aforementioned studies, it is worth highlighting significant studies such as the following:

- The study on EI and alcohol conducted by Petterson, Malouff & Thorsteinsoon, (2011) in which significant type relationships were found between a low level of emotional intelligence and high consumption.
- The research on cocaine use conducted by Aranda, González, Salguero, Gualda & Herero (2009), it was concluded that EI acts as a direct protective factor against cocaine use.
- The article on legal drug use by Trinidad & Johnson (2002), in which it was observed that EI correlates negatively with substance use, adding also that adolescents with high EI are more able to resist peer pressure.

With the aforementioned conclusions, we can see the importance of emotional intelligence in drug dependence, as well as the important role that an adequate emotional regulation plays.

Taking into account all the aspects reviewed in relation to the ER and drug addictions, this work presents the following objectives:

General objectives:

- Study the most recent scientific information on the subject in question, in order to provide a clear current view of addictions and the possible aspects that may be of help for this problem.
- Evaluate the usefulness of emotional regulation for both prevention and intervention with drug addicts.

Specific objectives:

- Identify the relationship between emotional regulation and substance abuse.
- Know the different techniques for the evaluation of emotional regulation and analyze the most used ones.
- Analyze the groups of participants based on age and gender.

Method

Two databases, Psycinfo and Scopus, were used to search for articles with the following search terms: "emotional regulation" and "drug addiction." In this review, the following inclusion and exclusion criteria were applied in the selection of articles.

Criteria that had to be met in order to be included are:

- Published in the last 5 years, 2016-2020
- Original studies
- Academic publications
- Articles in English or Spanish
- An investigation in which emotional regulation was evaluated in order to look for a relationship with drug dependence.

As exclusion criteria, it was established that articles would not be included:

- Whose analyzed population was not that of drug-dependent patients.
- That they were not finished.

Results

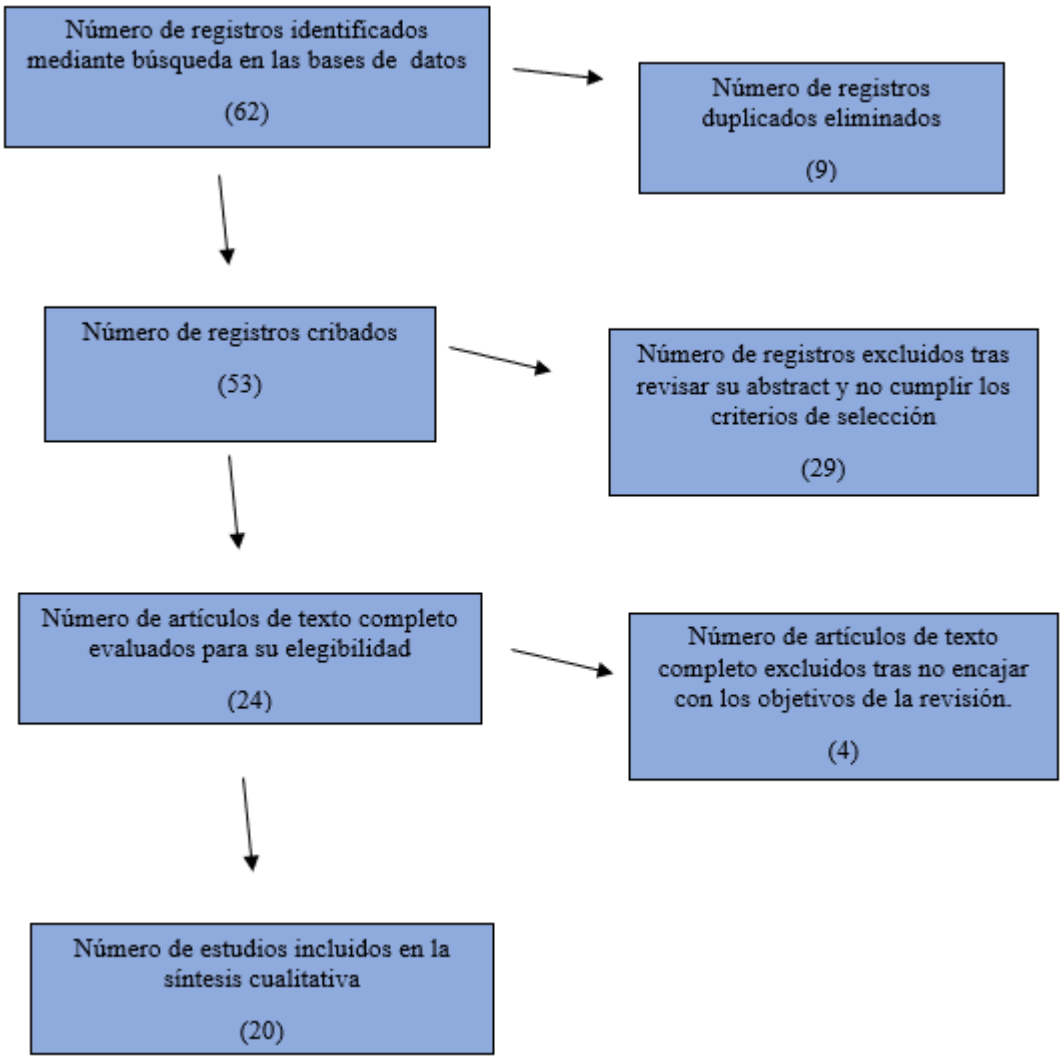

Figure 3. Flow diagram.

Table 1

Classification of the articles selected for review in this article

Author-Year	Participants	Evaluation instruments	Relationship between ER-Observed drug dependence	Brief conclusion
Bakhshaie, Rogers, Kauffman, Tran, Buckner, Ditre & Zvolensky, (2019).	N (Males/Females): 2080 (443/1637) Young adults (Average 21 years old)	The Positive Affect Negative Affect Scale *(PANAS)*; Difficulties in Emotion Regulation Scale *(DERS).*	Emotional dysregulation explained, in part, the association between negative affect and nonmedical opioid use among a large number of people.	- Role of emotional dysregulation as a possible mechanism in the association between negative affect and nonmedical opioid use. - Further work is needed in the future to assess the value and feasibility of brief emotion regulation interventions in young adults for emotional distress and non-medical opioid use.
Cavicchioli, Ramella, Vassena, Simone, Prudenziati, Sirtori & Maffei (2020).	N (Men/Women): 319 (186/133) Adults (Average 46 years)	Difficulties with emotion regulation scale *(DERS).*	An influence of emotional dysregulation on the co-occurrence of compulsive behaviors (such as gambling, compulsive sex, compulsive shopping, eating problems...) was found.	- This is the first study to show empirically the role of emotional dysregulation and conscious self-regulation of attention as psychological processes involved in the co-occurrence between alcohol use disorder and other addictive behaviors. - Studies are recommended to empirically test the therapeutic role of conscious self-regulation of attention in various addictive behaviors.
Clarke, Lewis, Myers, Henson & Hill (2020).	N (Men/Women): 179 (98/81) Adults (Average 40 years old)	Difficulties with emotion regulation scale *(DERS);* Emotion Regulation Questionnaire *(ERQ)***.**	A relationship was found between well-being, emotion regulation, and relapse in outpatient treatment patients. Difficulties in emotion regulation were associated with higher odds of relapse days.	- A negative correlation was observed between emotional regulation and relapse. - Future research is needed to clarify and extend the current results.
Decker, Morie, Hunkele, Babuscio, & Carroll (2016).	N (Men/Women): 72 (34/38) Adults (Average age 41 years)	Emotion Regulation Questionnaire *(ERQ***).**	Neither cognitive reappraisal nor emotional suppression was related to cocaine withdrawal during treatment as measured by self-report or urinary toxicology.	- Cognitive reappraisal (CR) was not associated with cocaine abstinence before or during treatment, although a previous study found that low CR and high emotional suppression were associated with heroin use. - This research needs to be replicated; still, it is possible that cocaine and heroin have different associations with emotion regulation.

Dingle, Neves, Alhadad & Hides (2018).	N (Men/Women): 70 (46/24) Young Adults (Average 25 years)	Difficulties in Emotion Regulation Scale *(DERS).*	The representative sample of drug addicts obtained higher levels of dysregulation than the control group.	- A difference was observed between the emotional regulation present in the experimental group (patients with drug dependence) and the control group, with a lower ER in the experimental group. - They highlight the need for future longitudinal studies to assess how emotion regulation relates to the initial onset, severity, and progression of substance use disorder in adults.
El-Rasheed, ElAttar, Elrassas, Mahmoud & Mohamed (2017).	N (Males/Females): 60 (60 males) Young Adults (Average 20 years)	Toronto Alexithymia Scale-20 *(TAS-20).*	A significant relationship was found between addiction potential and emotion (mainly in aspects such as acceptance, intentional behaviors, and impulsivity). All this influencing and exacerbating addictive behavior.	- Adolescents with substance abuse were observed to have worse mood regulation than controls. - The association between emotion control and substance abuse may exacerbate increased motivations to use substances as regulators of uncontrollable emotions.
Estevez, Jáuregui, Sanchez-Marcos, López-González, & Griffiths (2017).	N (Males/Females): 472 (229/243) Teenagers (Average: 15 years)	Difficulties in Emotion Regulation Scale *(DERS).*	Substance addictions (alcohol and drugs) and non-substance addictions (Internet, video games, and gambling) were positively correlated with emotion dysregulation.	- Emotion regulation difficulties predict substance and non-substance addictions. - This study provides new evidence for future research on the risk and protective factors involved in addiction.
García, Luque, B., Ruiz, & Tabernero (2017).	N (Men/Women): 53 (45/8) Adults (Average: 40 years)	Regulatory Emotional Self-Efficacy scale *(RESE).*	It was found that a person with a good ability to regulate his or her emotions would be less likely to suffer from depression and therefore have better cognitive performance.	- The variable of self-regulation of positive emotions can be worked on in order to avoid depression, and therefore cognitive deterioration in the consumer population.
Hardy, Fani, Jovanovic, & Michopoulos, (2018).	N (Males/Females): 229 (229 females) Adults (Average of 39)	The Difficulties in Emotion Regulation Scale *(DERS).*	Emotional dysregulation in women with addiction is related to eating problems.	- Common features of food addiction and substance use disorder are described, particularly depression and patterns of emotional dysregulation. - The need for further research is highlighted.

Jalali, Hashemi, Hasani, & Fakoor Sharghi (2017).	N (Males/Females): 52 (52 males) Adults (Average: 31 years)	Cognitive Emotion Regulation Questionnaire *(CERQ)*	It was observed that better emotional regulation increased the self-esteem of prisoners with addiction, and stabilized their emotions, allowing them to have greater control over their consumption.	- Working on the regulation of emotions in prisoners with addiction allowed them to improve their management of emotions in the face of consumption. - It is recommended that the results be extrapolated with caution, as they cannot be extrapolated to the entire consumer population.
Jara-Rizzo, Navas, Catena, & Perales (2019).	N (Men/Women): 196 (162/34) Adults (Average: 34 years)	Emotion Regulation Questionnaire *(ERQ).*	A relationship between emotional dysregulation and pathological gambling was observed. In particular, reappraisal was positively associated with gambling cognitions.	- The basic neurocognitive mechanisms of gambling disorder are related to emotional regulation. - Not only are the emotional roots of gambling cognitions corroborated, but also their overlap with higher-order models of emotion regulation strategies.
Jauregui, Estevez, & Urbiola, (2016).	N (Males/Females): 274 (274 males) Adults (Average: 36 years)	The Difficulties in Emotion Regulation Scale *(DERS).*	It was found that pathological gamblers tended to have more difficulties with respect to emotional regulation. Pathological gambling may be a way of regulating negative emotions and a consequence of failures in self-control.	- Pathological gamblers may present emotional regulation difficulties, which may also be a predictor of pathological gambling and comorbid disorders. - The treatment of pathological gambling can benefit from the improvement and promotion of emotional regulation skills.
Kumar, Kumar, Benegal, Roopesh, & Ravi (2019).	N (Males/Females): 50 (50 males) Adults (Average: 34 years)	Affect Regulation Checklist *(ARC).*	A positive relationship is observed between cognitive remediation and mind-body exercises, with emotional regulation, in dependent people. Adequate emotional regulation reduces anxiety and stress levels and facilitates self-control.	- A comprehensive model is recommended for the intervention of alcohol-dependent persons, with special emphasis on the promotion of emotional regulation skills.

Lutz, Gross, & Vargovich, (2018).	N (Males/Females): 149 (61/88) Adults (Average: 54 years)	The Difficulties in Emotion Regulation Scale *(DERS).*	Greater difficulties in emotion regulation are associated with higher levels of pain-related disability and increased risk of opioid abuse.	- It is important to assess and address emotion regulation in patients with chronic pain. - Difficulties in emotion regulation are associated with poorer functioning and increased risk of opioid abuse in this population. - More research is needed regarding this topic, and how it can be included in the prevention and intervention of these addictions.
Paulus, Vujanovic & Wardle, (2016).	N (Men/Women): 119 (67/52) Adults (Average: 36 years)	The Difficulties in Emotion Regulation Scale *(DERS).*	Emotional dysregulation was related to an increase in the frequency of alcohol consumption, more problems related to consumption, and the degree of problems observed by the drug addicts themselves.	- Felt anxiety may be a risk factor for alcohol-related problems, but not consumption. - Difficulties in regulating emotions may explain these associations, suggesting a relevant avenue for clinical development.
Sloan, Hall, Simpson, Youssef, Moulding, Mildred, & Staiger (2018).	N (Men/Women): 10 (4/6) Young adults (Average: 19 years)	The Difficulties in Emotion Regulation Scale *(DERS).*	A relationship between emotional regulation and improvements during rehabilitation is observed.	- There are quite favorable data on the treatment of emotional regulation in young age groups; a population that is quite complex when it comes to dealing with problems such as substance abuse. - Further research along these lines is recommended.
Wang, Burton, & Pachankis, (2018).	N (Males/Females): 218 (127/91) Adults (Average: 36 years)	Difficulties in Emotion Regulation Scale *(DERS).*	Emotional dysregulation is related to the stigma associated with depression, increasing the tendency of individuals to use substance abuse as a coping technique.	- Deficits in emotional regulation are implicated in the development of problematic substance use, employed by the individual to cope with psychological distress. - It is recommended that this line of research be pursued for both preventive and substance abuse intervention purposes.
Weiss, Bold, Sullivan, Armeli & Tennen (2017).	N (Males/Females): 1640 (754/886) Young adults (Average: 19 years)	Emotion Regulation Questionnaire *(ERQ).*	A relationship was found between the use of emotional regulation strategies and a lower tendency to subsequent consumption.	- There are reciprocal relationships between emotion regulation strategies and substance use. - Higher daytime use of distraction, reappraisal, and problem solving predicts lower evening substance use, whereas higher evening substance use predicts higher next-day avoidance and reappraisal.

Weiss, Forkus, Contractor, & Schick (2018).	N (Men/Women): 311 (106/205) Young adults (Average: 19 years)	Difficulties with emotion regulation scale *(DERS).*	A relationship was identified between difficulties in regulating positive emotions and alcohol and drug abuse.	- Findings suggest utility of addressing difficulties in regulating positive emotions in treatments aimed at reducing alcohol and drug abuse among college students.
Zohreh & Ghazal (2018).	N (Men/Women): 320 (320 men) Young adults (Average: 21 years)	Difficulties with emotion regulation scale *(DERS).*	A positive correlation was observed between behavioral inhibition, behavioral activation systems, and difficulties in emotional regulation. Likewise, emotional dysregulation explained an important part of the variance in addiction potential.	- Emotional regulation predicts some of the potential for addiction. - It can be used to facilitate intervention techniques that can help in the treatment of substance abuse.

Considering *Table 1*, the total number of evaluated participants amounts to 6874, counting the smallest sample with only 10 participants (Sloan, Hall, Simpson, Youssef, Moulding, Mildred, & Staiger, 2018) and the largest sample with 2080 participants (Bakhshaie, Rogers, Kauffman, Tran, Buckner, Ditre & Zvolensky, 2019). Of the total there are 3755 females (54.64%) and 3118 males (45.36%). It is worth noting that there are both articles in which the sample is represented only by females (Hardy, Fani, Jovanovic, & Michopoulos, 2018), and studies only consisting of males (El-Rasheed, ElAttar, Elrassas, Mahmoud & Mohamed, 2017; Jalali, Hashemi, Hasani, & Fakoor Sharghi, 2017; Jauregui, Estevez, & Urbiola, 2016; Kumar, Kumar, Benegal, Roopesh, & Ravi, 2019; Zohreh & Ghazal, 2018).

In relation to age, three age groups were differentiated: adolescents (under 18 years), young adults (18-29 years) and adults (30-65 years). It was observed that most of the research is aimed at an adult population (60%), a smaller proportion at the young adult group (35%) and, finally, one study was presented with adolescents (5%) (Estevez, Jáuregui, Sanchez-Marcos, López-González, & Griffiths, 2017).

About the total number of instruments 22 were identified, almost all of them are specific to emotional regulation, except one of them where it is assessed indirectly (4.5%) through the "*Toronto Alexithymia Scale-20" (TAS-20) (*El-Rasheed, ElAttar, Elrassas, Mahmoud & Mohamed, 2017). Six instruments used are distinguished: "*Difficulties in Emotion Regulation Scale*" *(DERS) (*59.2%); "*Emotion Regulation Questionnaire*" *(ERQ)* (18.3%); "*The Positive Affect Negative Affect Scale*" *(PANAS)* (4.5%); "*Regulatory Emotional Self-Efficacy scale*" *(RESE)* (4.5%)**;** "*Cognitive Emotion Regulation Questionnaire*" *(CERQ)* (4.5%)**;** "*Affect Regulation Checklist*" *(ARC)* (4.5%)**.**

Regarding the relationship observed, we studied consumer populations with addictions to various substances such as opioids, alcohol, cannabis, cocaine and non-substantial addictions such as Internet, video games or gambling. In all of them, an improvement in E.R. brought them benefits such as:

- An improvement during rehabilitation (such as in experienced well-being and a reduction in relapses).
- A lower frequency of subsequent consumption.
- Anxiety and stress reduction.
- Decrease in depression in the consumer population.
- Improvement of eating problems associated with consumption.
- Increased self-esteem and self-control.

In general, the ER has relevance and influence both at the beginning of consumption, as well as in the severity of addiction and subsequent progression; therefore, a preventive, rehabilitative, maintenance, and of intervention function is appreciated.

Discussion and conclusions

Taking into account the situation of the last few years of consumption in our country of both legal and non-legal drugs, there is a problem that is increasing, and that has increased even more due to the pandemic that we are experiencing, which has triggered consumption. Therefore, it is important to seek new ways to prevent and intervene in addictions and, of these, working with the ER is a key factor, since the consuming population stands out for having difficulties to control their emotions and uses drugs to make up for the shortcomings at this level.

Regarding the differences in the year 2020 in *Figure 1* and *Figure 2*, in the introduction section, it should be noted that the number of articles in both graphs seems to drop significantly. This is understandable due to the pandemic experienced during this year that has caused, on the one hand, a reduction in the number of studies in general, and on the other hand, these studies are focused on consequences caused by confinement.

After the analysis of the 20 selected articles, it is observed that, by working emotional regulation in the addictions collective, such people obtain a series of benefits. These benefits seem to be of great importance, improving both the intervention and subsequent rehabilitation (Dingle, Neves, Alhadad & Hides, 2018). All this is related to the fact that people who present an addiction, whether substantial or non-substantial, tend to use consumption as a way to regulate their emotions, mainly in particularly stressful moments in their lives (Estevez, Jáuregui, Sanchez-Marcos, López-González, & Griffiths, 2017). Because of this, ER would allow increasing the number of tools of this group and would promote regulation skills that would replace consumption, avoiding the subsequent development of addiction and the related consequences.

The benefits found include self-control, reduction of stress, depression, and anxiety and as a result of the above, a lower frequency of consumption as indicated by the results (El-Rasheed, ElAttar, Elrassas, Mahmoud & Mohamed, 2017; García, Luque, B., Ruiz, & Tabernero, 2017; Jalali, Hashemi, Hasani, & Fakoor Sharghi, 2017; Kumar, Kumar, Benegal, Roopesh, & Ravi, 2019). These benefits are particularly important in the early stages of the problem, leading to greater control over the addiction and a

reduction in the severity of subsequent damage; and in the intervention, being related to an increase in the effectiveness of the intervention (although this should continue to be studied in future research). It should be noted that only in the research by Decker, Morie, Hunkele, Babuscio, & Carroll (2016), a relevant influence of emotional regulation in cocaine addicts was not found. In the same article, it is mentioned that more research is needed, but that it seemed to indicate that emotional regulation was not as relevant as in other addictions, for example, opioids, alcohol, gambling disorders, among others.

In this review, a wide range of instruments to assess emotional regulation has been observed, but of all of them the most employed were the *DERS* and the *ERQ*. A brief description of the two tests mentioned will be given below:

- *DERS (Gratz & Roemer, 2004).* It is a 36-item questionnaire, whose purpose is the evaluation of the global capacity that the person presents to respond adaptively to distressing emotions in life. It focuses on six domains: (a) lack of emotion acceptance; (b) inability to perform certain behaviors in the face of negative emotions; (c) impulsive behaviors in the face of negative emotions; (d) limited access to effective emotional regulation strategies; (e) lack of emotional awareness; and (f) lack of emotional clarity. The DERS has been shown to be sensitive to change over time (Gratz & Gunderson, 2006), exhibiting good test-retest reliability, (Gratz & Tull, 2010) and exhibited high internal consistency ($\alpha = .951$), in research by Fisher, Atzil-Slonim, Bar-Kalifa, Rafaeli, & Peri, (2019).
- *ERQ (Gross & John, 2003).* Questionnaire consisting of 10 items, it aims to measure two emotional regulation strategies, suppression (4 items) and reappraisal (6 items) on a 7-point Likert-type scale. Adequate validity and reliability of the test has been observed in reviews (Sánchez, González & Adánez, 2020).

After the exposed characteristics, it is understandable that they tend to be the most used, being adequate instruments for the evaluation of ER (Sánchez-Teruel & Robles-Bello, 2018; Guzmán-González, Trabucco, Urzúa, Garrido & Leiva, 2014).

The limitations found in this study are mentioned below. Firstly, the studies found do not focus on the elderly, and there is only one study on adolescents; therefore, part of the general population is not reflected in this review. This is because many of the studies found did not work with this type of sample and others, despite having a sample of this type, it did not work on ER directly but acted as a secondary factor, which is why it was not included in this review.

Likewise, this review has focused on articles written in English or Spanish. Research written in other languages may yield new information on the topic addressed.

In general, emotional regulation is an essential mechanism to maintain a functional and adaptive behavior, especially for problems such as addictions, whose central axis are emotions and their mismanagement, mainly derived from a lack of tools or strategies to manage them properly, reaching, for example, the use of drugs as a mechanism to reduce negative emotions.

This review concludes that emotional regulation has a great influence on the drug-dependent population, obtaining from its development numerous benefits, which occur at a level of both prevention and intervention, so that working with this skill is essential to reduce both the incidence and collateral damage of this problem. In addition to this, when analyzing the evaluative techniques used, it can be appreciated that these have a correct scientific support, allowing an adequate and professional analysis of the ER in the sample.

Regarding future lines of research, it is recommended to use samples with both adolescent and elderly populations to observe whether the same problems occur and whether emotional regulation plays a greater role. Similarly, they should focus on the use of ER in aspects of primary prevention, and how the promotion of these abilities can help to avoid later addictions.

Another aspect to highlight is that articles strictly pertaining to psychology have been used. Articles from other areas of interest should be taken into consideration, which may shed new light on this topic, such as those pertaining to neurosciences, in which case future reviews/research should be carried out to observe the involvement of emotional regulation in the brain, both in the population with and without addiction.

Finally, it is considered necessary to improve drug dependence intervention programs focused on improving emotional regulation skills, which would allow the implementation of more complete and effective interventions to address this problem.

References

Alberts, H. J., Schneider, F., & Martijn, C. (2012). Dealing efficiently with emotions: Acceptance-based coping with negative emotions requires fewer resources than suppression. *Cognition & Emotion, 26*(5*),* 863-870. https://doi.org/10.1080/02699931.2011.625402.

Aranda, D. R., González, R. C., Salguero, J. M., Gualda, R. C., & Herero, V. G. (2009). Emotional intelligence and cocaine use in adolescents. In *Advances in the study of emotional intelligence* (pp. 367-372). Marcelino Botín Foundation.

Bakhshaie, J., Rogers, A. H., Kauffman, B. Y., Tran, N., Buckner, J. D., Ditre, J. W., & Zvolensky, M. J. (2019). Emotion dysregulation as an explanatory factor in the relation between negative affectivity and non-medical use of opioid in a diverse young adult sample. *Addictive behaviors*, *95*, 103-109. https://doi.org/10.1016/j.addbeh.2019.02.025.

Brenner, E. M., & Salovey, P. (1997). Emotion regulation during childhood: Developmental, interpersonal, and individual considerations. *Emotional development and emotional intelligence: Educational implications*, 168-195.

Cavicchioli, M., Ramella, P., Vassena, G., Simone, G., Prudenziati, F., Sirtori, F., ... & Maffei, C. (2020). Mindful self-regulation of attention is a key protective factor for emotional dysregulation and addictive behaviors among individuals with alcohol use disorder. *Addictive Behaviors*, *105*, 106317. https://doi.org/10.1016/j.addbeh.2020.106317.

Clarke, P. B., Lewis, T. F., Myers, J. E., Henson, R. A., & Hill, B. (2020). Wellness, Emotion Regulation, and Relapse During Substance Use Disorder Treatment. *Journal of Counseling & Development, 98*(1*),* 17-28. https://doi.org/10.1002/jcad.12296. https://doi.org/10.1002/jcad.12296

Decker, S. E., Morie, K., Hunkele, K., Babuscio, T., & Carroll, K. M. (2016). Brief Report: Emotion regulation strategies in individuals with cocaine use disorder

maintained on methadone. *The American journal on addictions*, *25*(7), 529. https://doi.org/10.1111/ajad.12439

Dingle, G. A., Neves, D. D. C., Alhadad, S. S., & Hides, L. (2018). Individual and interpersonal emotion regulation among adults with substance use disorders and matched controls. *British Journal of Clinical Psychology*, *57*(2), 186-202. https://doi.org/10.1111/bjc.12168.

Echeburúa, E., & Corral, P. (1999). Advances in the cognitive-behavioral treatment of personality disorders. *Análisis y Modificación de conducta*, 25(102), 585-614.

El-Rasheed, A. H., ElAttar, K. S., Elrassas, H. H., Mahmoud, D. A., & Mohamed, S. Y. (2017). Mood regulation, alexithymia, and personality disorders in adolescent male addicts. *Addictive Disorders & Their Treatment, 16*(2), 49-58. https://doi.org/10.1097/ADT.0000000000000098

Survey on alcohol and drugs in Spain 2017-2018 (EDADES 2017-2018). Directorate General of the National Plan on Drugs (DGPNSD). Spanish Observatory on Drugs (OED). Madrid, 2018: Government of Spain.

Estevez, A., Jáuregui, P., Sanchez-Marcos, I., López-González, H., & Griffiths, M. D. (2017). Attachment and emotion regulation in substance addictions and behavioral addictions. *Journal of behavioral addictions*, *6*(4), 534-544. https://doi.org/10.1556/2006.6.2017.086

Extremera, N., Durán, A., & Rey, L. (2005). Perceived emotional intelligence and its influence on life satisfaction, subjective happiness and engagement in workers of centers for people with intellectual disabilities. *Anxiety and Stress*, *11*(1).

Fernández, B., Jorge, V., & Bejar, E. (2009). Protective role of emotional skills in the prevention of tobacco and alcohol consumption: an intervention proposal. *Psicooncología*, *6*(1), 243-256. Retrieved from https://revistas.ucm.es/index.php/PSIC/article/view/PSIC0909120243A

Fisher, H., Atzil-Slonim, D., Bar-Kalifa, E., Rafaeli, E., & Peri, T. (2019). Growth curves of clients' emotional experience and their association with emotion regulation and symptoms. *Psychotherapy Research*, 29(4), 463-478. https://doi.org/10.1080/10503307.2017.1411627.

García, V. G., Luque, B., Ruiz, M. S., & Tabernero, C. (2017). Emotional self-regulation in depression and cognitive impairment in psychoactive substance users. *Salud y drogas*, *17*(2), 125-136. https://doi.org/10.21134/haaj.v17i2.312

Gratz, K. L. (2003). Risk factors for and functions of deliberate self-harm: An empirical and conceptual review. *Clinical Psychology: Science and Practice*, *10*(2), 192-205. https://doi.org/10.1093/clipsy.bpg022. https://doi.org/10.1093/clipsy.bpg022

Gratz, K. L., & Roemer, L. (2004). Multidimensional assessment of emotion regulation and dysregulation: Development, factor structure, and initial validation of the difficulties in emotion regulation scale. *Journal of psychopathology and behavioral assessment*, *26*(1), 41-54. https://doi.org/10.1023/B:JOBA.0000007455.08539.94

Gratz, K. L., & Gunderson, J. G. (2006). Preliminary data on an acceptance-based emotion regulation group intervention for deliberate self-harm among women with borderline personality disorder. *Behavior therapy*, *37*(1), 25-35. https://doi.org/10.1016/j.beth.2005.03.002

Gratz, K. L., & Tull, M. T. (2010). Emotion regulation as a mechanism of change in acceptance-and mindfulness-based treatments. *Assessing mindfulness and acceptance processes in clients: Illuminating the theory and practice of change*, 107-133.

Gross, J. J. (1999). Emotion regulation: Past, present, future. *Cognition & emotion, 13*(5*),* 551-573. https://doi.org/10.1080/026999399379186.

Gross, J. J., & John, O. P. (2003). Individual differences in two emotion regulation processes: implications for affect, relationships, and well-being. *Journal of personality and social psychology*, *85*(2), 348. https://doi.org/10.1037/0022-3514.85.2.348

Guzmán-González, M., Trabucco, C., Urzúa, A., Garrido, L., & Leiva, J. (2014). Validity and reliability of the Spanish-adapted version of the Difficulties in Emotional Regulation Scale (DERS-E) in Chilean population. *Terapia psicológica*, *32*(1), 19-29. http://dx.doi.org/10.4067/S0718-48082014000100002.

Hardy, R., Fani, N., Jovanovic, T., & Michopoulos, V. (2018). Food addiction and substance addiction in women: common clinical characteristics. *Appetite*, *120*, 367-373. https://doi.org/10.1016/j.appet.2017.09.026

Hervás, G. (2011). Psychopathology of emotional regulation: the role of emotional deficits in clinical disorders. *Behavioral Psychology*, *19*(2), 347.

Hunt, M. G. (1998). The only way out is through: Emotional processing and recovery after a depressing life event. *Behaviour Research and Therapy*, *36*(4), 361-384. https://doi.org/10.1016/S0005-7967(98)00017-5.

Jalali, F., Hashemi, S. F., Hasani, A., & Fakoor Sharghi, N. (2017). The effectiveness of cognitive group therapy based on schema-focused approach on self-esteem and emotion regulation in drug addicted prisoners under the methadone maintenance treatment (MMT). *Journal of Groups in Addiction & Recovery, 12*(4*),* 284-295. https://doi.org/10.1080/1556035X.2017.1337532

Jara-Rizzo, M. F., Navas, J. F., Catena, A., & Perales, J. C. (2019). Types of emotion regulation and their associations with gambling: A cross-sectional study with disordered and non-problem ecuadorian gamblers. *Journal of Gambling Studies*, *35*(3), 997-1013. https://doi.org/10.1007/s10899-019-09868-7.

Jauregui, P., Estevez, A., & Urbiola, I. (2016). Pathological gambling and associated drug and alcohol abuse, emotion regulation, and anxious-depressive symptomatology. *Journal of Behavioral Addictions*, *5*(2), 251-260. https://doi.org/10.1556/2006.5.2016.038

Jiménez, M. I., & López-Zafra, E. (2008). Emotional self-concept as an emotional risk factor in university students. Gender and age differences. *Psychology Bulletin*, 93(1), 21-39.

Kumar, R., Kumar, K. J., Benegal, V., Roopesh, B. N., & Ravi, G. S. (2019). Effectiveness of an Integrated Intervention Program for Alcoholism (IIPA) for enhancing self-regulation: Preliminary evidence. *Asian journal of psychiatry*, *43*, 37-44. https://doi.org/10.1016/j.ajp.2019.05.006.

Liverant, G. I., Brown, T. A., Barlow, D. H., & Roemer, L. (2008). Emotion regulation in unipolar depression: The effects of acceptance and suppression of subjective emotional experience on the intensity and duration of sadness and negative affect. *Behaviour research and therapy*, *46*(11), 1201-1209. https://doi.org/10.1016/j.brat.2008.08.001.

Lutz, J., Gross, R. T., & Vargovich, A. M. (2018). Difficulties in emotion regulation and chronic pain-related disability and opioid misuse. *Addictive behaviors*, *87*, 200-205. https://doi.org/10.1016/j.addbeh.2018.07.018.

McNally, A. M., Palfai, T. P., Levine, R. V., & Moore, B. M. (2003). Attachment dimensions and drinking-related problems among young adults: The mediational role of coping motives. *Addictive behaviors*, *28*(6), 1115-1127. https://doi.org/10.1016/S0306-4603(02)00224-1

Paulus, D. J., Vujanovic, A. A., & Wardle, M. C. (2016). Anxiety sensitivity and alcohol use among acute-care psychiatric inpatients: The mediating role of emotion regulation difficulties. *Cognitive Therapy and Research*, *40*(6), 813-823. https://doi.org/10.1007/s10608-016-9792-y

Pérez, N., & Castejón, J. L. (2006). Relationships between emotional intelligence and IQ with academic performance in university students. *Electronic Journal of Motivation and Emotion*, IX, 22.

Peterson, K., Malouff, J., & Thorsteinsson, E. B. (2011). A meta-analytic investigation of emotional intelligence and alcohol involvement. *Substance Use & Misuse, 46*(*14)*, 1726-1733. https://doi.org/10.3109/10826084.2011.618962

Salovey, P., Mayer, J. D., Goldman, S. L., Turvey, C., & Palfai, T. P. (1995). Emotional attention, clarity, and repair: Exploring emotional intelligence using the Trait Meta-Mood Scale. https://doi.org/10.1037/10182-006

Sánchez, J. P., González, A. R. D., & Adánez, G. P. (2020). Psychometric properties of the scores of the most commonly used tests in the assessment of emotional regulation. *Papeles del psicólogo*, *41*(2), 116-124.

Sánchez-Teruel, D., & Robles-Bello, M. A. (2018). Assessment instruments in emotional intelligence: a quantitative systematic review. *Perspectiva Educacional*, *57*(2), 27-50. http://dx.doi.org/10.4151/07189729-vol.57-iss.2-art.712

Scopus (2020). Papers per year related to the term "emotion regulation" (Graph).

Scopus (2020). Papers per year related to the terms "emotion regulation" and "Psychotherapy" (Graph).

Stanton, A. L., Kirk, S. B., Cameron, C. L., & Danoff-Burg, S. (2000). Coping through emotional approach: scale construction and validation. *Journal of personality and social psychology*, *78*(6), 1150. https://doi.org/10.1037/0022-3514.78.6.1150.

Sloan, E., Hall, K., Simpson, A., Youssef, G. J., Moulding, R., Mildred, H., & Staiger, P. K. (2018). An emotion regulation treatment for young people with complex

substance use and mental health issues: a case-series analysis. *Cognitive and Behavioral Practice*, *25*(3), 427-441. https://doi.org/10.1016/j.cbpra.2017.12.006

Thompson, R. A. (1994). Emotion regulation: A theme in search of definition. *Monographs of the society for research in child development*, 25-52. https://doi.org/10.1111/j.1540-5834.1994.tb01276.x

Trinidad, D. R., & Johnson, C. A. (2002). The association between emotional intelligence and early adolescent tobacco and alcohol use. *Personality and individual differences*, *32*(1), 95-105. https://doi.org/10.1016/S0191-8869(01)00008-3

Wadlinger, H. A., & Isaacowitz, D. M. (2011). Fixing our focus: Training attention to regulate emotion. *Personality and Social Psychology Review*, *15*(1), 75-102. https://doi.org/10.1177/1088868310365565.

Wang, K., Burton, C. L., & Pachankis, J. E. (2018). Depression and substance use: Towards the development of an emotion regulation model of stigma coping. *Substance use & misuse, 53*(5*),* 859-866. https://doi.org/10.1080/10826084.2017.1391011

Weiss, N. H., Bold, K. W., Sullivan, T. P., Armeli, S., & Tennen, H. (2017). Testing bidirectional associations among emotion regulation strategies and substance use: a daily diary study. *Addiction*, *112*(4), 695-704. https://doi.org/10.1111/add.13698.

Weiss, N. H., Forkus, S. R., Contractor, A. A., & Schick, M. R. (2018). Difficulties regulating positive emotions and alcohol and drug misuse: A path analysis. *Addictive behaviors*, 84, 45-52. https://doi.org/10.1016/j.addbeh.2018.03.027.

Zohreh, A., & Ghazal, Z. (2018). Behavioral systems and difficulty with emotional regulation predict adolescents' addiction potential. *Journal of Child & Adolescent Substance Abuse, 27*(5-6), 272-276. https://doi.org/10.1080/1067828X.2018.1474824

Receipt date: 03/03/2021
Revision date: 06/09/2021
Acceptance date: 06/15/2021