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Do Emotional Regulation Strategies Affect Alcohol Expectancies? A Study on the Link between Cognitive Reappraisal, Expressive Suppression and Alcohol Expectancies

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Abstract

Emotional regulation and alcohol expectancies is a phenomenon regularly investigated with findings supporting the notion that individuals' emotional regulation strategies impact outcomes expected when consuming alcohol. Emotional regulating strategies are commonly subcategorized as cognitive reappraisal (CR) (thinking differently about a given situation) and expressive suppression (ES) (an emotionally suppressive nature). Theoretical framework supports this notion postulating that some use alcohol to self-medicate, namely The Self-Medication hypothesis (SMH). In addition to current literature this study measured these relationships to decipher the interplay between emotional regulation and alcohol expectancies (AE's). A sample group *(n=36)* comprised of individuals whom were previous drinkers but were now abstinent, completed the Emotional Regulation questionnaire and the Alcohol Expectancy Questionnaire online. The main predicted hypothesis was that CR and ES abilities would have a direct link to AE's, with predictions also being that some AE's would interact with each other. Findings revealed no statistical links between CR, ES and AE's; suggesting no interplay between emotional regulation strategies and alcohol expectancy outcomes. However, some AE's did reveal significant positive correlations (i.e. sexual enhancement to relaxation/tension reduction) suggesting that some expectancies do indeed interact with each other. Results are discussed suggesting further exploration is required when understanding why individuals drink with consideration given to other contributory factors (i.e. psychological, biological, gender differences, drinking motives etc). Additionally, a proposal that theoretical framework (namely the SMH) could be expanded to be inclusive of these contributory factors is suggested; with practical implications and future research considered.

Keywords: Cognitive reappraisal; Expressive suppression; Alcohol expectancies

Abbreviations: CR: Cognitive Reappraisal; ES: Expressive Suppression; SMH: Self-Medication Hypothesis; AEs: Alcohol Expectancies; AEQ: Alcohol Expectancy Questionnaire; ERQ: Emotional Regulation Questionnaire.

Introduction

An emerging body of research claims links between some individuals' emotional regulation strategies and expectancies when related to alcohol use [1-3] with cognitive reappraisal and expressive suppression defined as the two common emotional regulation strategies. The literature outlines these two emotional strategies as differing in their nature, with CR being a strategy for cognitive change whereas ES is response focused [4]. Further, evidence suggests that CR and ES are two independent constructs with findings that claim a change in one of these emotional regulating styles does not predict a shift in the other [5]. In addition, theoretical framework in the field suggests strong links between alcohol use as a tool to manage emotional states namely the self-medication hypothesis (SMH) [6].

Evidence suggests that the positive reinforcing effects of alcohol is closely linked to the management of emotions when individuals desire to limit negative affect states, defined as alcohol outcome expectancies [7,8]. With that said these studies commonly measure emotional regulation in its entirety, rather than concentrating on the two differing components of emotional regulation (i.e. cognitive reappraisal and expressive suppression). With that in mind, the primary aim of this paper seeks to explore whether two important facets of emotional regulation strategies (Cognitive Reappraisal and Expressive Suppression) have an effect on outcome expectancies, when alcohol is consumed. An additional consideration is given as to how alcohol expectancies could interact with one another when specific outcomes are desired.

The Role of Cognitive Reappraisal when Linked to Alcohol Expectancies

It can be claimed that mood can be manipulated by using certain mechanistic methods to alter an emotional state to a more positive one, such as if an individual is feeling low by forcing themselves to smile, they will feel uplifted. The way in which individuals interpret initial signals of distress can significantly affect cognitive abilities, the ability to handle a specific situation and more importantly in view of the current study, the emotions an individual may feel. Research shows that by having a strong ability to cognitively reappraise oneself when in a stressful situation, this can have a positive impact on cognitive functions (i.e. the ability to think clearer) and physiological responses (i.e. emotional states, arousal etc) [9]. Interestingly findings claim that by using CR to modulate emotional reactivity when practiced in individuals suffering with anxiety, results evidenced higher self-efficacy in the trial group, evidencing an optimistic attitude can indeed have an effect on emotional experiencing [10]. Therefore, as research within the field of alcohol use already claims, there are correlations with drinking and the management of emotions [11,12], it could be plausible that one's ability to cognitively reappraise could have a direct impact on their possible expectancies when considering alcohol use.

In a related vein if an individual is well adjusted at cognitively managing their emotional state then positive reinforcing AE's in relation to, for example tension reduction, could suggestively be less expected. Research in the field suggests this to be true in individuals whom have exhibited poorer CR abilities in the past when linked to their AE's. These findings suggest positive correlations in previously alcohol dependent individuals and alcohol related attentional bias's when linked to better practiced CR patterns. Moreover, in the sample tested findings revealed a more effective management of alcohol related craving and even altered memories in relation to past alcohol use. With that said, there are many facets to consider when understanding these links with a first important consideration given to whether the motivations behind why individuals may drink in the first instance, is related to cognitive functions leading to physiological or emotional regulation outcomes. Importantly researchers have found that when examining individuals' self-reported reasons behind why they began drinking in the first instance [13] the sample group did not understand important factors for their alcohol use (these being as a physiological or psychological aid). However, in other research describing the category named 'Personal-effect motives' by Mulford & Miller [14], findings were that there was a tendency to drink to avoid, escape and indeed regulate uncomfortable emotional states. Therefore, contrary to some findings, there is an awareness amongst varying individuals that the use of alcohol can perform tension reduction and aid in relaxation thus the outcome expectancy is grounded in the possibility of a positive outcome, if alcohol is consumed. Indeed, the SMH states similar claims that individuals utilize alcohol to alleviate uncomfortable emotional states, with evidence in the field

suggesting links between the use of alcohol to manage anxiety [15].

Self-medication has been found to be prevalent in individuals whom suffer from bouts of depression with alcohol being used to reduce low moods [16]. These findings were standalone in their nature as the sample group were only tested on their self-medicating behavior whilst using alcohol and not drugs as well, as many studies normally do [17-19]. Their expectancy outcomes were to aid in relaxation which further adds to evidence suggesting individuals expect certain outcomes when alcohol was consumed. Continuing from this, arguably if individuals evidence poor abilities to cognitively reappraise, one could suggest a likelihood of positive expectancies around what alcohol can achieve for them, when linked to altering cognitive functions and consequently physiological reactions. Empirical evidence points toward this in a trial on university students and their AE's with findings claiming that core reasons for drinking were related to the need to escape negative thought processes [3]. Findings in the same study also postulated that personality traits played a significant role (pointedly stress responsivity-related personalities) indicating that this had high influence on AE's. Such findings evidence a necessity for understanding that cognitive functions have a vital bearing on an ability to cognitively reappraise and suggest that individuals differ in their processing of stress related cues, directly linking tension reduction to cognitive reappraisal abilities.

Cognitive reappraisal abilities are reported to be less practiced in younger individuals with findings in the field asserting that the unintended acquisition of AE's (specifically social related expectancies) begins to impact young individuals before any consumption of alcohol is even experienced – with AE's empirically observed in children as young as 3-4 years old [20]. These influences are identified through media depictions (films and advertising) as well as attitudes of peers and family members, which when combined educates young children that the use of alcohol in social situations is positive [21]. What should be noted are findings in the field suggest that CR abilities heavily aid productivity in social situations [22], thus suggesting the importance of learning very early on that healthy CR is a vital emotional regulation skill. Disconcertingly the claims that AE's can begin extremely early in human development, suggests that this could impact the development of CR abilities. This could possibly lead to the understanding that alcohol is a necessity to aid social situations, at a very impressionable age. Building on this conceptualization the SMH has found evidence to suggest that individuals use alcohol in conjunction with difficulties in social abilities, evidencing links to a necessity to self-medicate when in a possible social related scenario [23].

In consideration of social skills, a key component in relating to others is the ability to be assertive. Researchers claim that being skilled in assertiveness includes the ability to outwardly express emotions and thoughts, which in turn assists in forming solid interpersonal relationships [24]. The adaptive orientation model [25] suggests that individuals expect alcohol to benefit them in the areas of skills where they may be deficient, suggesting that individuals that lack in being assertive, expect alcohol to achieve assertiveness for them. It could be argued therefore that by lacking in cognitive reappraisal skills this could be correlated to a lower ability to assert oneself, with a study providing evidence that consumption of alcohol aides the expectancy that the individual will achieve better assertiveness skills [26]. This empirical evidence suggests that when individuals exhibited a higher expectancy towards assertiveness when alcohol was consumed, heavier drinking ensued.

In contrast, some findings suggest that in some individuals whom consider themselves to be able to practice abilities to think positively (i.e. strong CR skills) the AE's around assertiveness are in fact to become less adept at being assertive [7]. In fact, when individuals believed that less assertiveness would be achieved after drinking, this actually encouraged heavier drinking episodes within the sample whom were measured. One could suggest that this specific sample had perhaps experienced assertiveness in a negative context (i.e. aggression or anger) and their AE's are indeed a protective factor towards experiencing any uncontrollable future episodes. Further it could also be claimed that as well as assertiveness looking to be achieved, physical pleasure is an additional expectancy when consider these specific set of results. Indeed, other research suggests this to be a viable assertion when testing a sample in their loss of control related to their experiences of aggression, when alcohol was consumed [27]. Further the SMH upholds the notion that individuals manage aggression and anger by drinking which has sedative effects on individuals 'numbing' their uncontrollable emotions [28]. Thus, this confirms that there are detected correlations between one's ability to cognitively reappraise and expectancies in what alcohol will achieve when assertiveness is considered.

In concluding on the deliberation around links between CR and AE's, the literature discussed in the previous sections points towards evidence confirming that there are indeed relationships between these two. Furthermore, the theoretical position of the SMH arguably fits in relation to self-medicating behavior when specifically considering tension reduction, social/physical pleasure and assertiveness – as the previous paragraphs have outlined. When considering how cognitive reappraisal may work (either an ability to think positively) perhaps it is possible that less skilled CR abilities allows for an enhanced ability in alternative individual differences in emotional regulation – such as expressive suppression. It could be hypothesized therefore that because the ways in which these emotional regulation styles differ, alcohol expectancies may differentially be linked to these two emotional regulation strategies.

The Role of Expressive Suppression when Linked to Alcohol Expectancies

It is claimed that to enable individuals to practice effective skills in emotional regulation an awareness of emotions is vital by identifying, labelling and interpreting bodily sensations which in turn assists in tolerating and then verbally expressing difficult emotions [29,30]. Expressive suppression (ES) is an emotional regulation strategy characterized by an individual whom voluntarily suppresses their outward emotional expressions, which can affect the individuals experiencing of that emotion [31]. With rumination being a common trait in ES prone subjects, this mediates an association with stress-related reactions and is a key component in the development and maintenance of anxious and depressive related disorders [5]. Thus, this type of emotional regulation strategy can be detrimental, with evidence claiming that deficits in emotional expression can moderate issues with an individual's relationship with alcohol and indeed AE's [32].

Despite ES largely being viewed as a maladaptive form of emotional regulation, some research has found positive outcomes within a sample of individuals whom suppressed outward emotional responses [33]. These results claimed that when subjects repressed their facial expressions in relation to their experience of pain, the pain they experienced was in fact reported to have decreased. This doesn't necessarily point towards a positive view of ES though when linked to the management of pain, as when compared to CR suppressing of an individual's emotions is considered to be a less affective emotional regulation strategy [34]. With evidence linking ES techniques to physical and mental health problems [35] this suggests that when using this technique to manage pain the outcome may not, in the long term, be beneficial. This is reported to also lead to detrimental consequences including expectancies around alcohol use to manage physical pain as well as anxiety that chronic pain can conduce [36]. Thus it could be argued that there are links between ES and the expectancy that this will achieve tension reduction, when alcohol is consumed. Moreover, the SMH claims links between the use of alcohol to manage chronic pain as well as the anxious states that come with any form of chronic suffering, with a recent study confirming these links [37].

Conversely, with ES being largely claimed as maladaptive in its nature, when individuals are prone to practice this method they are inevitably uncommunicative in their nature. These individuals may naturally prefer methods that do not involve discussing how they feel with others and seek coping mechanisms that swiftly relieve unmanageable emotions, these methods being drinking to cope - thus affecting their expectancies around alcohol use [38]. Additionally, ES has been claimed to predispose some to the risk of the development of depression and anxiety, linking to alcohol use [39]. According to these findings it could therefore be argued that there are already vital links identified between emotionally suppressed individuals and their AE's around tension reduction. Moreover, as these types of emotionally suppressed individuals are commonly referred to as internalizers (feelings are internalized rather than verbally communicated) they also display struggles in motivation and self-efficacy when faced with difficult situations [39]. Interestingly this links with evidence when testing the SMH suggesting that individuals attempt to self-medicate anxiety levels with tension reduction related alcohol expectancies, which predicts consequences related to alcohol use and indeed heavier consumption [40]. Moreover, a study claims that alcohol outcome expectancies were largely based around the alleviation of guilt in a sample of individuals whom in fact criticized themselves for suffering the original stressor [41]. This caused severe anxiety in some, having an impact on socializing their abilities.

Social skills vary but a common trait of being capable of strength in this area is good communication and as ES prone individuals tend to struggle in verbally communicating, it could be argued that social scenarios cause issues for them. Evidence suggests this to be true with ES being known to be linked with impaired social

functions in individuals whom struggle with social interactions [42]. Subjects expressed high expectancies when linked to the consumption of alcohol and the management of social situations, including their assertiveness. Moreover as these types of individuals are suppressive in their nature, findings claim that alcohol expectancies related to managing social anxiety, correlate with a desire to become more confident in social scenarios [43]. This indicates strong links to expressive suppression strategies and alcohol expectancies around social and physical pleasure. The SMH supports this notion with findings suggesting that individuals with social anxiety use alcohol in an attempt to self-medicate, reducing anxiety linked to social situations and enhancing their experience of physical pleasure [44].

Along with research claiming links between social interactions and ES some studies also postulate suppression related emotional responses correlate to aggressive behavior. Indeed, this could have some baring on AE's associated to arousal and interpersonal power. Even though evidence suggests situational and individual based factors are important to consider, individuals whom habitually suppress thoughts that could lead to an emotional expression, are at risk of alcohol related aggression [45,46]. Findings also suggested that ES was common in male subjects, fully mediating associations between gender related masculine 'norms' and aggressive expectancy outcomes in relation to alcohol consumption [47]. Additionally, self-medicating in relation to anger is also closely linked to the use of alcohol due to its attenuating affects, with the SMH claiming that specifically alcohol is chosen by individuals attempting to alleviate angry emotional states [48,49]. It could be claimed therefore that in understanding how ES and differing AE's interact with each other; this could influence relevant interventions when this type of emotional regulation strategy is practiced in an individual struggling with possible alcohol abuse.

In closing it can be claimed that when considering these two emotional suppressor systems, CR is considered a more adaptive regulation strategy when compared to ES with literature confirming this to be the case [50,34]. It also seems apparent that the theoretical underpinning of the SMH is well evidenced when considering the links between CR to AE's and also ES to AE's as well. Moreover, although the preceding paragraphs do evidence findings in the field around ES and AE's (specifically tension reduction, social/physical pleasure and arousal/interpersonal power) and CR (specifically social/physical pleasure, tension reduction and assertiveness) - there is less research connecting other vital alcohol expectancy outcomes. Additionally, it could be argued that there are many other expectancy outcomes when considering why individuals use alcohol when their emotional regulating techniques are of a suppressing nature – of which the current study proposes to consider. With that said AE's as a standalone aside of a correlation with cognitive or expressing functions, could be an additional emotive area to consider. There could be some crucial interactions between expectancies that would be impactful for possible preventative measures and interventions in the future. Thus it is essential to establish etiological mechanisms that could influence AE's and risk factors that are inevitably involved in leading to the possibility of alcohol issues in vulnerable individuals.

Alcohol Expectancies

In the field of research there is clear evidence that emphasizes cognitive factors and indeed alcohol outcome expectancies and their consistent link to problem drinking and heavy alcohol consumption, in adults as well as adolescents [8,51,52]. Grounded in the roots of the Alcohol Expectancy Questionnaire (AEQ) [53] these empirical studies commonly discuss the correlations between alcohol use and sensation seeking as a result of drinking; although not all AE's are positive, with some defined as negative in their nature. With that said it could be argued that by expecting negative outcomes this would predict reduced alcohol use in individual's but evidence suggests otherwise, insinuating that there are more factors to be considered including how some expectancies could interact with one another [54]. It could be claimed therefore that it is important to understand whether certain AE's interrelate because despite repeated negative consequences, use can still persist leading to frequent psychosocial issues, resulting in alcohol abuse [55].

Heavy drinking is linked with the expectancy outcome that tension will be reduced when the analgesic qualities of alcohol take affect [56]. Additionally, alcohol expectancies in relation to arousal/interpersonal power has been found to positively relate to continued drinking episodes namely the expectancy that when alcohol is consumed, the individual feels more powerful. Moreover, a recent study claims that combined expectancies of tension reduction and arousal/interpersonal power is a desired outcome for drinkers whom wish to achieve results of relaxation as well as more confidence when around other people [57]. This literature already indicates an understanding how AE's can interact with

each other, with some inevitably fitting with the expectancy of another.

However, despite evidence that suggests the positive reinforcing effects of alcohol, some findings suggest that even though the original expectancy was to achieve tension reduction quite the opposite happened, with subjects reporting an increase in anxiety post drinking. Along with this some literature also claims individuals expect negative reinforcement and indeed alcohol expectancies actually alter, when at differing stages of one's drinking career i.e. after becoming abstinent. This is a vital consideration when understanding how AE's can alter from being positive outcome expectancy to a negative one throughout the trajectory of a person's drinking career. One could even suggest that because AE's change especially after a person stops drinking, this could have an impact on relevant interventions when individuals may seek help for their alcohol use.

Despite the argument that expectancies differ throughout the trajectory of an individual's drinking experiences, tension reduction remains a common thread in many empirical studies [52,58]. There are also links between a need to reduce tension and enhance the experience of sexual encounters with findings confirming these expectancies do interact [59]. Researchers claim that individuals can use alcohol with a desire to manage insecurities around their sexual performance, with an added expectancy that this will assist them in relaxing enabling a more enjoyable experience [60]. Moreover, some individuals report that their alcohol expectancies can be largely based around a need to feel less lonely (i.e. positive global changes in experience) with a study suggesting a link between the desire to be assertive to alter these feelings of loneliness [54]. Indeed, it could also be claimed that a necessity to feel differently about a given expected outcome after alcohol is consumed, is also correlated to the desire to self-medicate. The SMH claims that individuals use alcohol as a tool to limit negative affect with the outcome expectancy that their mood would be elevated after consuming alcohol [61], which fits with the concept that AE's have reinforcing affects. Although as the above states links between varying AE's are already well documented but how they interact with each other seems a phenomenon that requires further exploration, of which the current study aims to achieve.

Introduction Conclusion

To summarize the preceding paragraphs made explorations in to the current literature when considering how emotional regulation strategies could have an impact on individuals' expectancies when alcohol is consumed. With specific concentration given to cognitive reappraisal, expressive suppression and indeed how the SMH may fit into these dynamics as well. Along with this due to the complex nature of why individuals may drink an understanding of how AE's may interrelate with each other, remains a facet to consider. It was also determined that AE's most certainly shift and alter over the course of an individual's drinking career thus making a case for understanding how this could differ when an individual decides to become abstinent. This could provide useful insight into possible practical interventions if these predictions are true.

Thus, the aim of the current study sought to examine how cognitive reappraisal and expressive suppression resources link to alcohol expectancies, along with testing how alcohol expectancies may interact with one another. Examinations were carried out by using a sample of previously alcohol dependent individuals whom completed two questionnaires first The Alcohol Expectancy Questionnaire (AEQ) [53] which measures AE's in six subscales (positive global changes, sexual enhancement, social and physical pleasure, assertiveness, relaxation/tension reduction, arousal/interpersonal power). Second The Emotional Regulation Questionnaire (ERQ) [35] categorized in to the subscales of Cognitive Reppraisal (CR) and Expressive Suppression (ES) abilities. Predictions were that cognitive reappraisal would evidence negative relationships with alcohol expectancies, specifically; relaxation/tension reduction, social and physical pleasure and assertiveness. As an example; a higher score on an individuals' ability to cognitively reappraise (on the ERQ), would indicate less expectancies towards alcohol achieving tension reduction (a lower score on the AEQ). It was also expected that expressive suppression would show positive relationships with alcohol expectancies with specific relationships predicted between; arousal/interpersonal power, relaxation/tension reduction and social and physical pleasure. Therefore, a higher score on expressive suppression strategies would indicate a higher score on an alcohol expectancy towards (for example) sexual enhancement. Finally, when testing how AE's interrelate positive relationships were predicted to be found, with specific relationships to be found between; positive global changes in experience linking to assertiveness, sexual enhancement linking to relaxation/tension reduction and finally arousal/interpersonal power linking to relaxation/tension reduction.

Methodology

Design

The current study used a correlational design with emotional regulation and alcohol expectancy as dependent variables. These dependent variables were further subcategorized in to six subscales for the AEQ *(positive global changes in experience, sexual enhancement, social and physical pleasure, assertiveness, relaxation/tension reduction, arousal/interpersonal power)* and to two subscales for the ERQ *(cognitive reappraisal and expressive suppression).* These dependent variables were measured with the first focus being the indication of consistent correlations between AE's and emotional management as well as a secondary analysis of correlations linking AE's to one another, in relation to past alcohol use.

Participants

Participants were recruited using a snowball methodology. Recruitment of the samples was initially advertised through online forums (Facebook and Twitter) via a post explaining the requirements to participate in the study. The calls included requests for the interested participants to share the post to any other relevant parties whom would potentially like to take part (however making it clear that the prerequisite is being free from alcohol for at least 3 months). This was also emphasized within the original posting for the request of participants, with narrative explaining that to be deemed eligible to take part participants must have a minimum of 3 months of abstinence from alcohol use and considering themselves to be in 'recovery'. Although ages, ethnic origin and gender of the participants was not collected, it was clearly stated that participants must be at least a minimum of 18 years of age. Additionally, recruitment for participants was aimed at an adult sample of individuals up to the age of 60 years old. The population therefore that the data was drawn from was an age range of 18 years old up to a possible 60 years old. From this sample 60 individuals were recruited, with 53 beginning the surveys and 36 of these individuals fully completing both surveys through to the end.

Materials

To measure the predicted differences participants were asked to complete the two survey questionnaires, with each survey detailing at the beginning that in answering these questions they should be considering their responses retrospectively i.e. based on the period of time in which they were still using alcohol. Some participants whom scored from zero to below the minimum total score of expectancy for each of the surveys were omitted from the study.

The Emotional Regulation Questionnaire (ERQ)

A 7-item scale questionnaire, this measured participants' ability to regulate emotions in two differing measures categorized as: cognitive reappraisal and expressive suppression. This was a Likert-type scale survey which ranges from 1 (strongly disagree) up to 7 (strongly agree) with neutral as an option at number 4. Participants were asked to score each question in terms of how they perceived they felt when they were using alcohol, as opposed to current day. They were also unaware of the underpinning categories that the questions were based on, which are detailed below [35].

Cognitive Reappraisal

CR questions comprised of: When I want to feel more positive emotion (such as joy or amusement) I change what I am thinking about; When I want to feel more negative emotion (such as sadness or anger) I change what I am thinking about; When I am faced with a stressful situation I make myself think about it in a way that helps me stay calm; When I want to feel more positive emotion I change the way I am thinking about a situation; I control my emotions by changing the way I think about the situation that I am in; When I am want to feel less negative emotion I change the way I think about the situation that I am in. Scores for CR had a potential culminated total ranging from a minimum of 6 to a maximum of 42. Higher scores indicated a greater ability to practice CR as the individuals' emotional regulation strategy.

Expressive Suppression

ES questions comprised of: I keep my emotions to myself; When I am feeling positive emotions I am careful not to express them; I control my emotions by not expressing them; When I am feeling negative emotions I make sure not to express them. For ES total scores varied from a minimum of 4 to a maximum of 28. Much the same for CR higher scores in totality for participants indicated a greater ability to practice ES as the individual's emotional regulation strategy.

The Alcohol Expectancy Questionnaire (AEQ)

The AEQ questionnaire is a 5-part scale survey ranging from 1 (strongly disagree) to 5 (agree strongly). The

survey is based on indicating a consistent correlation between AE's and indeed alcohol consumption. Derived of 6 factor-analytically designed subscales, the survey is intended to assess reinforcement expectancies in relation to an individual's alcohol use. The subscales are defined as: Positive global changes in experience, *(alcohol generally has powerful positive effects on people; makes a person feel good or happy; future seems brighter),* Sexual enhancement *(alcohol improves sex; more enjoyable; feels more romantic or sexual; makes it easier to have sex),* Social and physical pleasure *(alcohol hurts how people think and hurts their coordination; run into things; act silly, have a hangover),* Assertiveness *(alcohol can help or hurt how well a person gets along with others; makes people want to have fun together; makes people mean to others),* Relaxation/tension reduction *(alcohol makes a person relax, feel less tense, and can keep a person's mind off of mistakes at school or work)* and Arousal/interpersonal power *(alcohol makes a person feel more powerful; easier to fight, speak in front of others, stand up to others).* Being a 120-question survey, scores are calculated within a minimum of 120 ranging to a maximum of 600. Claiming to be predictive of current and future drinking habits, the survey also asserts to estimate probability of relapse as well [53].

Procedure

Each of the participants were required to manually click that they agree with the content of the consent form online, before having the ability to move through to the surveys and thus prior to any involvement in the study. Participants were assured that all results would be completely confidential and in the initial email were offered additional support with completing the questionnaires, if they so needed this. The debrief clearly offered support services in relation to addiction and any struggle they may experience post survey completion, should they have felt impacted in any way whatsoever. Autonomy and respect for the dignity of the potential participants was of paramount and considered throughout the process of the study, which was communicated through to debrief.

Ethics

Due to the nature of this study being completely voluntary participants were given the option not to take part if they felt necessary with particular notice considered as to the background of the subject's populations. This study was approved by the London Southbank ethical committee and any data that were collected has been stored on a password protected computer.

Results

Thirty-six individuals completed surveys on their expectancies around alcohol use and perceived emotional regulation previous to any length of abstinence from alcohol use. Table 1 presents the findings of the entire sample using Pearson's correlation matrix which tested for comparisons between the sub categories CR and ES (by completion of the ERQ) and the sub categories of the AEQ (positive global changes in experience, sexual enhancement, social and physical pleasure, assertiveness, relaxation/tension reduction, arousal/interpersonal power). Upon analysis findings revealed that there was no direct relationship between the two subcategories of the ERQ (CR and ES) and all of the alcohol expectancy subscales *(r(36) = .002, ps>.091)*. Significant positive associations were however identified between Positive global changes and Assertiveness *(r(n=36) = .59, p<.001),* Sexual enhancement and Relaxation/tension reduction *(r(n=36) = .44, p = .006)* and Relaxation/tension reduction and Arousal/interpersonal power *(r(n=36) = .40, p = .02).*

Measure	Mean (SD)	1.	2.	3.	4.	5.	6.	7.
1. Cognitive Reappraisal	5.14(1.22)							
2. Expressive Suppression	3.27(1.42)	-0.252						
3. Positive Global Changes in Experience	3.77(1.37)	0.002	0.003					
4.Sexual Enhancement	3.50(1.53)	-0.159	0.026	0.175				
5.Social & Physical Pleasure	4.38(0.90)	0.286	-0.108	-0.043	0.021			
6.Assertiveness	4.44(1.02)	0.268	0.167	.588**	0.054	0.116		
7.Relaxation/Tension Reduction	4.13(0.93)	0.033	-0.116	0.203	.449**	0.138	0.263	
8.Arousal/Interpersonal Power	4.27(0.97)	0.135	-0.119	0.133	0.171	-0.224	0.13	.397*

Note: N = 36. *p<.05, two-tailed. **p <.01, two-tailed.

Table 1: Descriptive statistics and Pearson's correlations between measured variables.

Discussion

The aim of the present study was to investigate whether there were links between emotional experiencing and alcohol expectancies during the participants' use of alcohol, by surveying a sample of previously alcohol dependent individuals. With a final sample size of 36 individuals, execution to test these variables was two detailed surveys around emotional regulation (The Emotional Regulation Questionnaire,) [35] and expectancies in relation to alcohol use (The Alcohol Expectancy Questionnaire) [53]. The main hypothesis predicted a statistical link between cognitive reappraisal and expressive suppression (which were subscales of the ERQ) and the subscales of expectancies (outlined by the AEQ) related to alcohol use. Final analysis of the statistical data found that there was no specific relationship between cognitive reappraisal and alcohol expectancies nor expressive suppression and alcohol expectancies. Thus the main predicted hypothesis that CR and ES ability is directly linked to possible AE's, was not upheld. However, findings did reveal statistical links between certain alcohol expectancies adding support to current literature in the field as to how AE's outcomes do interact with one another. In the following paragraphs practical and theoretical implications are discussed along with suggestions towards future research in relation to theoretical framework that supports the notion that alcohol use and expectancies are correlated with a desire to self-medicate, which in the context of these results, could be questionable.

The current findings indicate that alcohol expectancies and emotional related behaviors aren't linked and the two systems that were tested are in fact completely separate. With that said it could be argued that these systems do have links however it could be moderated by other factors these being ethnicity, gender or external environmental factors. Indeed, according to the current set of results, the ability to cognitively reappraise or practice expressive suppression does not have any effect on an individual's alcohol expectancies. These results are consistent with other current findings claiming the use of alcohol and alcohol related outcomes as a tool to self-medicate is mediated by a plethora of varying elements specifically ethnicity, gender and additionally other external environmental factors [62]. This supports the notion that these are important factors that need to be considered when understanding emotional regulation abilities and expectancies around alcohol use.

With that said the views of the SMH (that individuals drink to self-medicate) could be viewed as singly dimensional in its nature, which doesn't take in to account the multidimensional complexities of drinking behaviors. Other crucial factors to take in to account are the assessment of biological and psychological reasons as to why individuals may drink with a recent critique of the SMH stating this to be vital information that must be considered [63]. It has been found to be common for individuals to be curious about how they 'fit in' especially young adults between 18-25, which is considered emerging adulthood and a crucial period of identity formation [64]. This can be considered a pressurized period of an individual's life which can psychologically impact some, leading to drinking behaviors to manage psychological distress [65-67]. Further some biological research postulates risk of drinking is linked to genetics, with a plausible claim being that a propensity to drink is already predicted through inherited genes [68]. Thus the postulation that alcohol use is merely an expectation that an individual will avoid ambiguous emotions for a positive expectancy outcome (i.e. to achieve tension reduction or relaxation) does not seem to explain adequately why people choose to drink. It could be argued that individuals may drink to manage negative emotional states but these reasons may not be dependent upon their levels of cognitive reappraisal nor expressive suppression, as the current study seemed to find.

Consequentially these views could offer practical and theoretical implications when considering the complexities of alcohol use in adolescents and adults. Additional consideration is given to the implications both towards theoretical models which uphold the original hypothesis in this study (namely the SMH) and practical psychotherapeutic suggestions. It could be argued that the SMH may require a broader view of the complexities when considering alcohol expectancy outcomes when linked to emotional regulation, indicating that in fact some of the framework that underpins the SMH may need reinvestigating. Moreover, despite empirical research confirming links between alcohol expectancy outcomes and emotional related management [69,70] this does not necessarily mean that these methods of emotional regulation have any bearing on alcohol expectancy outcomes. With that said, common sample groups used for these studies were individuals still drinking in the current day.

It could be argued therefore that when trialing a group of individuals whom are still drinking on their emotional management and alcohol expectancies, a more

comprehensible set of results are achieved. It could be suggested therefore that practical elements to consider are interventions unrelated to the framework that claims self-medication is the precursor to alcohol use and outcome expectancies. Psychotherapeutic interventions aimed at the identification of external environmental factors, biological factors, social standing and gender as resultant of alcohol use, is a starting point.

In a related vein, suggestions for future research and expansion of the theoretical view that alcohol expectancies are linked to emotional regulation would be to incorporate contributory factors, such as gender differences. The current body of evidence supports this notion however these studies are generally measured on males and females as a subject whole [71,72]. It seems that researchers typically do not look at the interaction between emotional regulation and the expectancy outcomes when alcohol is consumed, with the focus solely being on males or females, separately. Furthermore, specifically the view that societal pressures influence the male generation in relation to expressing their emotional needs. Studies do confirm that there can be an increased endorsement in stigmatization in relation to male's mental health which prevents males from seeking support when struggling in that area, and future research could build on this conceptualization. Additionally, within this context, future recommendations for research could emphasize whether there were clear differences in males and females and whether their CR or ES abilities have any bearing on alcohol expectancy outcomes.

In light of these results another conception to consider is the possibility that the two systems tested (CR/ES and AE's) are indeed unrelated and completely separate from each other. It could be argued that individuals whom require affect regulation are not expecting for alcohol nor its outcomes to fill that gap. Whether someone is capable of adept abilities to cognitively reappraise a given situation has no bearing on whether they would expect alcohol to aid their behaviors around, for example, sexual behavior (or at least according to the current findings.) Moreover, whether an individual is more emotionally suppressive in their nature this does not suggest at all that they will have any alcohol expectancies when they do drink, specifically any outcomes expectancies around tension reduction. Arguably these individuals could have specific motivations in relation to their alcohol consumption but not necessarily expectancies. With findings in the field suggesting that individuals who drink earlier on in life are more likely to engage in risky sexual behavior, this does not necessarily mean that a sexual related expectancy was the outcome that was intended after consumption of alcohol [73]. The motivation could indeed be the precursor to the behavior which would therefore influence an individual's sexual behavior after alcohol consumption, meaning there is no relation to alcohol expectancy when motives are considered. Current literature supports this conceptualization with motivational models of drinking postulating that certain people consume alcohol to achieve outcomes that they desire, learning that these are valued outcomes which further motivate them to want to drink again [74]. Interestingly drinking motives theory claims that each motive predicts differing patterns of alcohol use and is directly linked to an individual's predilection to achieve varying outcomes [75,76].

It should be noted that risky drinking behavior is linked to motives related to positive reinforcement, which identifies negative drinking outcomes when these motivations are ingrained [77].

In terms of practical implications, a suggestion towards addressing factors that maintain risky drinking by utilizing psychotherapeutic techniques to reduce positive reinforcement when motives are concerned. In line with the findings in this study as opposed to utilization of techniques related to what individuals may expect as an outcome when alcohol is consumed, relevant interventions could target alcohol related attentional bias in connection with an individual's perceived motives. In terms of further research this could perhaps seek to understand whether emotional regulation strategies (namely CR and ES) have any bearing on an individual's motivation (rather than alcohol expectancy) to drink. Moreover, with the suggestion that the SMH and other supporting theoretical framework could need reevaluation further studies could look to involve a more in depth awareness of how one experiences emotional regulation when linked to alcohol use, as this could differ from one person to another.

In summary emotional regulation categorized as either cognitive reappraisal or expressive suppression does not necessarily take in to account other complexities when emotional regulation is practiced i.e. bodily sensations, awareness etc. However the Emotion-regulation skills questionnaire provides a more comprehensive evaluation of physiological responses [78]. This could uphold the suggestions in the previous paragraphs that drinking patterns and emotional regulation is a multifaceted phenomenon that continues the need to be explored, as merely a desire to self-

medicate (as suggested in the SMH) could be an implausible explanation.

Interaction of Alcohol Expectancies

When testing for any interactions between alcohol expectancies some positive correlations confirmed that varying AE's do interact with each other. Consistent with some research in the field [79,27] positive correlations were identified linking positive global changes to assertiveness, sexual enhancement to relaxation/tension reduction and relaxation/tension reduction to arousal/interpersonal power. As a secondary analysis these results are consistent with a range of literature and studies that postulate the concept that alcohol expectancy are related to continued alcohol use [80,81]. As well as this AE's can begin at a very young age which could influence drinking patterns from the outset, which was touched on herein previously [20]. However, and as previously mentioned, these results could reflect how AE's alter when individuals stop drinking, as a previous study did also discover.

Nevertheless, given the evidence identified in this study practical preventative measures in young adults by way of relevant intervention/education could be introduced in schools and colleges influenced by the understanding of how AE's interact. Crucially this could aid in prevention of young adults misunderstanding the effects of the outcomes of using alcohol which could work towards reducing harm associated to current drinking culture [82]. Moreover, this gives possible insight in to how AE's alter post drinking career in the sample tested, which can also be considered in relation to relevant interventions when addressing their previous expectancies around what alcohol can achieve. Future research could build on this concept by identifying whether consuming large amounts of alcohol is linked to positive and negative alcohol expectancies. Moreover, given the variability of drinking behaviors, an investigative process in relation to whether positive and negative social experiences predict high intensity drinking could also be a vital addition to understanding the impact of external factors to alcohol expectancies.

Limitations

When reviewing these current set of results, mindful consideration should be given in light of detected limitations that could have had a direct impact on the findings and possible upholding of the main proposed hypothesis. With the understanding being that previous substance dependent individuals struggle with emotional regulation this could affect their ability to fully comprehend their emotionality thus not providing the most comprehensible of responses. Moreover, without a tangible process of monitoring the prerequisite of at least 3 months abstinent from alcohol, this could have also impacted the quality and truest form when results were analyzed. Additionally, it could be argued that when considering an individual's personal experience of emotional experiencing when linked to alcohol use, there are a plethora of contributing factors that affect their self-regulation skills. For example in answering these questionnaires the mindset was asked to be in retrospect (i.e. when each individual was actually drinking), which for some could have been a very long time ago. This could have had an impact on the possibility of full transparency around their CR, ES and AE's. Some could have drunk to more excess, some could have consumed alcohol in different contexts and some could have been influenced by environmental factors. Finally, gender, age and ethnicity data was not collected at the outset which could not have measured for the heterogeneity of a sample, which was identified as crucial information when understanding emotional regulation strategies and AE's. Suggested addressing of these issues would be to collect essential data that was mistakenly omitted at the beginning of the study (i.e. age, gender, ethnicity etc.,). As well as this the situational-specificity hypothesis [83] could be utilized with measures being obtained to understand how expectancies alter when linked to a variety of differing contexts (social, environmental, convivial scenario's etc.,) [84,85].

In closing this study tested for relationships between emotional regulation systems (namely cognitive reappraisal and expressive suppression) and alcohol expectancies, with a secondary analysis investigating whether alcohol expectancies interact with one another. Findings revealed that there were no detected relationships between the two emotional regulation strategies (cognitive reappraisal, expressive suppression) and alcohol expectancies - although some positive relationships were found between some AE's which was originally predicted. Suggested recommendations were made in light of the current findings along with future research to assess other important factors when considering emotional regulation and drinking behaviors. Concluding that when considering the multitude of reasons people may drink, this continues to be of a complex and multifaceted nature [86-88].

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