

REVIEW PAPER

Association between impulsivity and flourishing in Substance Use Disorders (SUD): bridging the gap between pathology focused psychology and positive psychology?

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Abstract

Impulsivity is identified with the development and maintenance of substance use disorders (SUD). Although Barratt originally theorised it to be a relatively static trait, addressing impulsivity has been an important SUD treatment aim. The continuing poor outcomes for those in treatment has raised interest in recovery-based and Positive Psychology interventions (PPI) for SUD and the importance of flourishing. There has been concern that this might supplant impulsivity reducing approaches, however little is known about how flourishing and impulsivity interrelate in SUD. This paper reviewed the literature and evaluated that relationship in two clinical studies. It concludes that there is an absence of reported research as to how impulsivity and flourishing interrelate in SUD and identified a strong to moderate, significant negative association between changes in impulsivity and flourishing in those with SUD, a finding that had not been previously reported. These findings add weight to the argument that impulsivity may be a more dynamic entity than originally theorised and may suggest a route for integration of more pathology focused psychology and Positive Psychology approaches to SUD.

Keywords: Flourishing, impulsivity, substance use, addiction, positive psychology

Abstract

L'impulsivité est identifiée avec le développement et le maintien de troubles liés à l'utilisation de substances (SUD). Bien que Barratt ait initialement pensé qu'il s'agissait d'un trait relativement statique, le traitement du problème de l'impulsivité est un objectif important du traitement de la maladie. La persistance de résultats médiocres chez les patients en traitement a suscité un intérêt accru pour les interventions de psychologie positive (IPP) axées sur le rétablissement et le SUD, ainsi que par l'importance de leur développement. Certains craignaient que cela ne supprime les approches réduisant l'impulsivité, mais on sait peu de choses sur la corrélation qui existe entre la floraison et l'impulsivité dans SUD. Cet article a examiné la littérature et évalué cette relation dans deux études cliniques. Il conclut qu'il n'y a pas de recherche documentée sur la manière dont l'impulsivité et l'épanouissement s'interrelient dans le SUD et a identifié une association négative forte à modérée entre les changements d'impulsivité et l'épanouissement chez les personnes atteintes de SUD, constat qui n'avait pas été rapporté auparavant. Ces résultats ajoutent du poids à l'argument selon lequel l'impulsivité pourrait être une entité plus dynamique que ce qui avait été théorisé à l'origine et pourrait suggérer un moyen d'intégrer davantage d'approches de la psychologie axée sur la pathologie et de la psychologie positive à la SUD.

Mots clés: En plein essor, impulsivité, consommation de drogues, toxicomanie, psychologie positive

INTRODUCTION

Outcomes for those in treatment for substance use disorders (SUD) remain low (NTA, 2017) in spite of advances in understanding the mechanisms of the neuro-biology of substance use (Koob

& Volkow, 2016, 2016; Y.-Y. Tang, Posner, Rothbart, & Volkow, 2015) and the provision to treatments designed to reduce impulsivity, defined as 'action ...without regard to the negative consequences.' ("International Society for Research on Impulsivity," 2014), considered an important

factor the development and maintenance of SUD (Gullo et al., 2017). These low outcomes have raised interest in new approaches that increase elements of 'recovery capital' (the holistic factors which appear to support sustained recovery, including housing, community, work, family, sense of self) (Cloud & Granfield, 2008) such as those aligned to Positive Psychology (PP) concepts. This paper evaluates how 'flourishing', a core concept of PP defined as "filled with emotional vitality . . . functioning positively in the private and social realms of their lives" (Keyes & Haidt, 2007, p. 6) and impulsivity are inter-related and the potential impact this might have on ideas of dynamic nature of impulsivity and future directions for SUD treatment.

BACKGROUND, AIMS AND OBJECTIVES

Impulsivity

Impulsivity has been identified by many authors (Franken, van Strien, Nijs, & Muris, 2008; Gullo, Loxton, & Dawe, 2014; Tomassini et al., 2012; Winhusen et al., 2013) as a reliable predictor of current and future problems with substance use. Its presence in children is associated with a future of substance use (Gullo et al., 2014), and it has been linked to failure to complete SUD treatment (Winhusen et al., 2013) and developing dependence (Gullo et al., 2017; Leamy, Connor, Voisey, Young, & Gullo, 2016; Tomassini et al., 2012). These observations underline the value of addressing impulsivity as a treatment aim in SUD.

However, debates exist concerning the stability or variability in impulsivity in an individual (King, Patock-Peckham, Dager, Thimm, & Gates, 2014). A mainly stable view of impulsivity can be observed in Barratt's well validated impulsivity scales (Barratt, 1975), which request responses from a long time frame, e.g.; 'I change jobs or hobbies or residences' and presuppose the permanent nature of this trait, and Ebstein's research (1997) into the 'adventure gene' (Lusher, Chandler, & Ball, 2001), perspectives that King et al. note underlie many recent studies (2014).

A more variable perspective on impulsivity has been supported by studies showing a 'maturing up' as individuals age with a reduction in impulsivity levels and alcohol use (Littlefield, Sher, & Steinley, 2010; Steinberg et al., 2008). Support is also found in research finding the speed of changes in impulsivity occur within a short time frame of 4 weeks (Littlefield et al., 2015) and the ability of an individual to self-manage their own recovery (Chen, 2006). These results add weight to the argument put forward by some

researchers that impulsivity should be considered to be a dynamic changeable entity (Gray, 2011; Littlefield et al., 2015).

Treatment Outcomes

There are concerns about the effectiveness of the current approaches that address ways to ameliorate the psycho-pathology, including the impulsivity issues, of SUD. Firstly, 22% of those in contact with UK drug services exit services in a managed way and the remaining 78% (NTA, 2017) either stay in the system or drop out of treatment. Secondly, success rates seem to be independent of which type of psycho-social intervention (Motivational Enhancement Therapy (MET), Cognitive-behavioural therapy (CBT), 12-step facilitation therapy (TSF) or social and behavioural network therapy (SBNT)) has taken place (Dale et al., 2017; Maisto et al., 2015; UKATT Research Team, 2005).

New Approaches

These poor outcomes have helped develop interest in new approaches to SUD and have led to the rising importance of a more holistic recovery based agenda (Cloud & Granfield, 2008; Penn, Strike, & Mukkath, 2016; Zschau, Collins, Lee, & Hatch, 2016) and the adoption of some PP concepts in SUD (Krentzman, 2013).

Positive Psychology

The integrative approach of Positive Psychology is defined as 'scientific study of optimal human functioning [that] aims to discover and promote the factors that allow individuals and communities to thrive' (Seligman & Csikszentmihalyi, 2000). It draws on diverse ideas including, amongst other things, an evaluation of ancient Buddhist meditative practices and became formalised during Seligman's presidency of the American Psychological Association in the late 1980s. Seligman and fellow researchers, especially Csikszentmihalyi, noted that much of research have been driven by a need to understand psychopathology, yet very little research has been done into what makes a 'good life' (Seligman & Csikszentmihalyi, 2000). They argued that although undertaking psychopathological research was important, it was to some extent focusing on an unrepresentative minority of the population. They considered that there would be value in studying how the well-being of the majority of the population could be increased in addition to efforts to understand and take care of those with psychopathology. Proponents also stress that the approach is not intended to replace non-Positive Psychology – referred to as 'psychology as usual', avoiding the potentially pejorative term

‘negative psychology’- but is “intended as a supplement, another arrow in the quiver” (Seligman & Pawelski, 2003, p. 159). This research focus has resulted in the development of a number of core concepts aligned with this understanding of ‘the good life’, including broaden and build theory (Fredrickson, 2004), flow states (Csikszentmihalyi, 1991), PERMA (Seligman, 2011), post traumatic growth (Haidt, 2007), self-compassion (Neff, Kirkpatrick, & Rude, 2007) and most centrally, flourishing (Diener et al., 2009; Keyes, 2002; Seligman, 2011). The various practical applications of these, and other, PP concepts are often termed Positive Psychology Interventions (PPI).

Some have argued that not enough credit has been given to humanistic psychology as the forerunner and major influencer of Positive Psychology and point to the fact that Maslow originally used the term ‘positive psychology’ as a chapter title in 1951 (Rich, 2001). However, prominent authors in the field recognise that, “Positive psychologists did not invent positive emotion or well-being or good character” (Duckworth, Steen, & Seligman, 2005, pp. 633–634), and to contextualise this in SUD, this is echoed in Vaillant’s work on AA where he notes that;

Alcoholics Anonymous (AA) works because it discovered the use of positive emotions as a therapeutic tool 50 years before academic psychology discovered Positive Psychology. (2014, p. 1)

Flourishing

Flourishing (Diener et al., 2009; Keyes, 2002; Seligman, 2011) is a central concept of PP that encapsulates the approaches’ perspective on well-being, adding a consideration of complete mental health to conceptualisations of wellness. ‘Flourishing’ is also noted as being more than simply ‘hedonic happiness’ as it includes the importance of fulfilment (an aspect considered central to eudemonic happiness) in the development of ‘the good life’ (Seligman, 2011).

Keyes further develops this by suggesting that mental health does not simply occur in the absence of mental illness. He notes that almost half of adults receiving mental health services every year do so when there is no diagnosable disorder (Keyes, 2005), and that the two are not just opposite ends of a bipolar dimension, but separate and correlated, unipolar dimensions. He suggests the mental illness dimension relates to the presence or absence of symptoms of psychopathology, such as major depressive episodes, SUD, etc., and the mental health dimension relates to the presence (flourishing) or absence (languishing) of well-being. He further suggests ‘complete mental health’ should be considered to be a

combination of both these dimensions (the absence of mental illness and presence of flourishing) (Keyes, 2002). This perspective aligns flourishing with the recovery agenda opening additional routes to recovery to previous, more psycho-pathological focus of SUD treatment (Krentzman, 2013).

Concerns About Positive Psychology in SUD

Although a recent systematic review by the author identified evidence for the utility of measuring flourishing in SUD (Parker, Banbury, & Chandler, 2018), another paper on views and use of PP concepts in non-PP trained SUD counsellors identifies some issues with adoption of PP in the field (Krentzman & Barker, 2016). Most counsellors in the study recognised they were already using some PP concepts in client sessions and identified value in adopting further concepts. However, there was a concern that delivering PPI would result in reduction of delivery of essential ‘treatment as usual’ focused on the psycho-pathology of SUD to the detriment of the client outcomes. This concern might be addressed by understanding how increases in flourishing, one of the aims of PPI, might affect changes in impulsivity, one of the aims of treatment as usual.

OBJECTIVES

This study was undertaken to identify the evidence for the interrelationship between impulsivity and flourishing in SUD and to evaluate any association between these measures in a clinical population of those with SUD.

METHODS

Scoping search

A search was undertaken, in all text fields, including subject, keywords and body text for the terms in PsycINFO and PubMed.

1: ‘impulsivity’
AND
2: ‘flourishing’
AND
3: ‘SUD’

To increase records returned additional terms were introduced. Term 1 was replaced with ‘self-control’ and ‘risk-taking’ and term 3 was replaced with ‘substance’, ‘alcohol’, ‘opiate’, ‘cocaine’, ‘crack’, ‘cannabis’ and ‘addiction’.

Quantitative studies, including those with cross-sectional designs, qualitative studies, mixed methods studies and reviews published in peer-reviewed journals were included. However, to increase the quality of the review, grey literature, opinion pieces, forum and blog posts, books, newspapers and magazine articles were excluded (McGinn, Taylor, McColgan, & McQuilkan, 2016; Sampson et al., 2009). No date limit was set on publication dates for inclusion. Results were required to include relevant uses of the terms. Records that did not meet this criterion were excluded (e.g.; the use of mobile phones is flourishing). Duplicate records were removed, and additional records meeting the inclusion criteria were searched for in the references of the remaining records.

Study of Association of Impulsivity and Flourishing in Clinical Populations

Participants To evaluate any interrelation between these two measures, an analysis of two studies was undertaken.

The first was a randomised controlled trial (RCT) of an approach, The Rediscovery Process (TRP), designed to affect impulsivity and flourishing in those with SUD. A convenience sample of 60 participants (male = 23, female = 37, mean age = 34.8 SD = 10.68) was recruited from drug services and through self-referral, with a range of single- and poly- substance use issues (Alcohol = 52, Opiates = 4, Crack = 2, Cocaine = 11, Amphetamines = 4, Cannabis = 13).

The second was a subset of these participants who continued into a cohort study of the same intervention (TRP). This study had a sample size of 45 (male = 8, female = 37, mean age = 34.4 SD = 11.23) who had completed data at both pre-course and 3 month time points, and their usage varied during the 3 month period (Alcohol = 39, Opiates = 2, Crack = 1, Cocaine = 8, Amphetamines = 4, Cannabis = 8).

Scales used in RCT and Cohort studies

Flourishing Measure Flourishing was measured using the Flourishing scale, developed by Diener and his colleagues (2010), a 8-item measure of an individual's self-perceived success in areas such as relationships, self-esteem, purpose, and optimism. The items were measured on a 7 point Likert scale, where: 7 = Strongly agree, 6 = Agree, 5 = Slightly agree, 4 = Neither agree nor disagree, 3 = Slightly disagree, 2 = Disagree and 1 = Strongly disagree. The scale provided a single psychological well-being score between 8 (Strong Disagreement

with all items) and 56 (Strong Agreement with all items). High scores signified that the individual viewed themselves in positive terms in these important areas of functioning. The measure has good psychometric properties with the Cronbach's alpha of .87 (Diener et al., 2010).

Impulsivity Measure Impulsivity was measured using the impulsivity section of the Low Self-Control Measure (LSC) (Grasmick, Tittle, Bursik, & Arneklev, 1993). Respondents were asked to rate their agreement with four statements concerning: acting on the spur of the moment, ignoring the future, now-focused pleasure seeking and prioritising the short term over the longer term. Responses were recorded on a 4-point scale where 4 = strongly agree, 3 = agree somewhat, 2 = disagree somewhat, and 1 = strongly disagree. The LSC is well validated, with a strong Cronbach's alpha of .79.

Procedure In the RCT the participants were randomised to a wait list group and an intervention group. Data were collected from both groups at randomisation (pre-intervention for the intervention group) and one month later (1 month post course for the intervention group). For the cohort study data were collected just prior to the intervention and 3 months post intervention. Data were collected via a range of options (by post, face to face with key-workers or online) to suit the clients' needs, and there were no payments for taking part in the study. The online collection structure was designed to adhere to BPS guidelines for internet mediated research (IMR) (British Psychological Society, 2013). The project received ethical approval from the London Metropolitan University, received no funding and informed consent was obtained from all participants.

RESULTS

Scoping search

The search results returned no relevant records for the terms 'flourishing AND impulsivity AND SUD'. Widening the search terms as described in the methodology resulted in one partial match, a study on smart-phone addiction that utilised flourishing and self-control measures (Aker, Şahin, Sezgin, & Oğuz, 2017), but returned no results directly related to substance use, or an evaluation of any association between the two factors.

Association analysis of Impulsivity and Flourishing in Clinical Populations

Data from the two studies were analysed using SPSS v25 to

evaluate any association between flourishing and impulsivity. Power for both studies was calculated by g-power (Faul, Erdfelder, Buchner, & Lang, 2009) using a correlation $p H1 = 0.5$, $p H0 = 0.0$, α error probability set to 0.05, the power was calculated at 0.99 ($n = 60$) and 0.97 ($n = 45$).

The impulsivity and flourishing scores from both time points of the RCT were analysed and a new variable was calculated for both measures by subtracting the score at 1 month from the score at randomisation to identify the change over time. On examination this data for impulsivity was normally distributed, however the data for flourishing was not (Impulsivity: skewness of 0.12 ($SE = 0.31$), kurtosis of 0.06 ($SE = 0.61$) and the Shapiro-Wilks returned $p = .58$. Flourishing: skewness of -0.40 ($SE = 0.31$), kurtosis of 3.00 ($SE = 0.61$) and the Shapiro-Wilks returned $p < .05$).

Therefore a Spearman's test was used to analyse the associations for this non-normally distributed data and it showed a moderate negative correlation between change in impulsivity and change in flourishing that was significant, Spearman's $r_s(58) = -0.31$ $p = .015$.

The impulsivity and flourishing scores of the cohort study taken at pre-intervention and 3 months post-intervention were analysed and a new variable was calculated for both measures by subtracting the score at 3 months from the pre-course score to identify the change over the time period. These calculated impulsivity scores were normally distributed with a skewness of 0.47 ($SE = 0.35$), and a kurtosis of -0.29 ($SE = 0.70$), and the Shapiro-Wilks returned was $p > .05$. However, the flourishing scores were not normally distributed, having a skewness of -0.14 ($SE = 0.35$), and a kurtosis of -0.29 ($SE = 0.70$), and a Shapiro-Wilks $p < .05$.

Therefore a Spearman's test was used to analyse the associations for this non-normally distributed data and it showed a strong negative correlation between impulsivity and flourishing that was highly significant, Spearman's $r_s(43) = -0.60$ $p < .001$.

DISCUSSION

This small preliminary study identifies a number of points of interest to those involved in SUD treatment. Firstly, the lack of any records returned during the scoping search relevant to 'flourishing and impulsivity' in SUD or associations between these two important factors, identifies a gap in the evidence base. This correlates with the author's recent systematic review of measuring flourishing in SUD, which returned few results, with only one study being based in a clinical population (Parker et al., 2018).

Secondly, the strong to moderate significant negative associations identified in these two studies identify a relationship between these factors, considered separately to be of value in SUD, that appears not to have been reported or studied before.

If these associations can be replicated in further studies, they might provide a useful starting point for resolving some of the concerns noted about PPI in SUD (Krentzman & Barker, 2016). Identifying that flourishing and impulsivity are interrelated could clarify how PPI could work alongside approaches more focused on changing aspects of the psychopathology of SUD, such as impulsivity.

As noted earlier, much of Barratt's original work on impulsivity described it as a static state (Barratt, 1975). However these findings, identifying a change in impulsivity in the participants, lend support to the developing model of impulsivity, promoted by some (Chen, 2006; Gray, 2011; Littlefield et al., 2015), as a changeable entity.

Limitations

There are some limitations to this study, further databases could have been searched to identify potential studies, however PubMed and PsycINFO provide access to a range of both medical and psychosocial articles. The association study is limited by a relatively small sample, and attrition levels (16.7% for the RCT and 34.7% for the cohort study) that are common in SUD research (Cohen et al., 2013; Northrup et al., 2017).

It could also be argued that as the approach intended to change both flourishing and impulsivity levels, the findings are more the result of the twin goals of the intervention and not due to any association itself, therefore more studies are required to clarify this. Finally there are a number of descriptions and operationalisations of flourishing and impulsivity, common to developing concepts (Hone, Jarden, Schofield, & Duncan, 2014), and only one scale was used for each factor in this study. Some argue that the research on the flourishing scale does not separate eudemonic and hedonic wellbeing well enough and add the scale has not been tested widely enough on a non-white USA based population (Ehrenreich, 2010). However, validation does now exist for the scale for use in many countries/cultures including Japan, New Zealand, China, Portugal (Hone, Jarden, & Schofield, 2014; Silva & Caetano, 2013; Sumi, 2014; X. Tang, Duan, Wang, & Liu, 2016), and as it is recognised as one of the key tools for measuring change in flourishing, the flourishing scale was selected to measure this variable. The low-self-control scale was selected for its avoidance of leading questions that presupposed

impulsivity is unchangeable and its established validity as a measure. However, it has recently received some criticism over the reliability of the totalled single low-self-control figure and its value in predicting criminal behaviour (Conner, Stein, & Longshore, 2009; Piquero & Rosay, 1998). These criticisms are less relevant to this project, which was not focused on predictors of criminality, and the value of the sub-sections used here continue to be supported. However, gaining data using different instruments to measure these factors may further improve the confidence in the associations seen in this study.

CONCLUSION

This study set out to identify the existing literature on, and evaluate, the association between flourishing and impulsivity in those with SUD. The search identified a scarcity of research on the subject whilst the evaluation found a strong to moderate significant negative association between the two factors, that had been previously unreported.

This study supports the value of developing flourishing, and PP focused approaches, in helping those with SUD to reduce impulsivity and so change the cycle of addiction. It is hoped that the study's findings first lend further weight to the perspective that impulsivity is an influenceable dynamic changeable entity. And second, that the identification that impulsivity and flourishing are interrelated goals in the recovery from SUD will encourage further research and a wider adoption of the flourishing concept and PPI in SUD. ■

Biography

Phil Parker is a lecturer in coaching and integrated approaches to counselling at the School of Psychology, London Metropolitan University, and a researcher in the psychology of health. He has written 4 books on coaching approaches to health and change, which have been translated into a number of languages, and authored a number of papers on the Lightning Process and positive psychology. He works clinically with a range of interests from addictions to peak performance, the latter including work with the British Olympic medical team, explorers, the European Tour and the Premiership.



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