

# **Is low Emotional Intelligence a primary causal factor in drug and alcohol addiction?**

*Elise Brown, Edmond Chiu, Lloyd Neill, Juliet Tobin and John Reid\**

School of Psychology, University of Tasmania, Hobart, Tas. 7001, Australia

## **Abstract**

This study was conducted with the cooperation of 103 residents in a residential drug and alcohol rehabilitation program to confirm Goleman's (1995) assertion that low Emotional Intelligence (EI) was a major causal factor in drug and alcohol addiction. A range of measures including EI, level of psychological distress, and the Big Five Factors of personality were administered to the participants and compared against the criterion of an individual's recovery. The study also used a repeated measures design where the participants were surveyed again one month later. It was found that participants improved significantly in EI scores and experienced a significant reduction in psychological distress during the additional month in the rehabilitation program. It was also found that EI scores were significantly related to addiction levels, but this was fully mediated by the psychological distress variable.

**Keywords:** Emotional Intelligence, drug, alcohol, addiction, Kessler-10

## **Introduction**

Emotional Intelligence (EI) has been proposed as the basis for success in life because it underpins a wide range of adaptive behaviour in humans. Low EI on the other hand is said to be associated with personal and social problems at home and at work (Goleman, 1995).

Individuals with low EI have difficulty managing their emotions and delaying gratification and are thus believed to be vulnerable to alcohol and substance abuse (Goleman, 1995; Riley

& Schutte, 2003). But is EI the root causal factor behind addictive behaviour? If low EI is the root cause of addiction it has been suggested that EI coaching interventions could potentially remove the reliance on alcohol and other substances, thus improving the quality of life of the individual and society overall (Goleman, 1995).

Many individuals suffering from addiction will incur serious lifelong health consequences and a substandard quality of life as they attempt to self-medicate using alcohol and other substances to obtain respite from their problems (Hser, Hoffman, Grella & Anglin, 2001). Unfortunately, hospitalisation and detoxification is only partially successful, with only 3% of admissions successfully abstaining for a full year after treatment. Further, less than 40% of alcohol and heroin addicts report a stable pattern of abstinence 12-years after treatment (Vaillant, 1988). Addiction problems are costly for society as they lead to health problems, personal relationship breakdown, criminal behaviour, incarceration, unemployment, and high mortality rates (Hser et al., 2001). In the light of the serious personal costs and cost to society overall it is worthwhile to investigate Goleman's (1995) claim that EI may be the key to alleviating much of the suffering and cost to society.

The present study investigated the personality and EI characteristics of over one hundred individuals in a live-in, residential program for drug and alcohol addiction rehabilitation. The study investigated the relationship between measures of recovery in the program and a range of psychological constructs.

### ***Emotional Intelligence and Addiction***

The connection that Goleman (1995) described between addiction and EI was compelling, but based mainly upon anecdotal evidence rather than peer-reviewed research. However, EI research conducted since 1995 has produced findings that support Goleman's assertion. Schutte et al. (1998) found that addicts had significantly lower EI scores than a

---

\* Ph: +61-2-9439 8820, Email: jreid@jreid.com.au

sample of psychotherapists. EI was also found to be inversely related to alcohol and tobacco use (Austin, Saklofske & Egan, 2005; Brackett & Mayer, 2003), and that men with low EI scores showed patterns of excessive alcohol consumption and illegal drug use.

These studies suggest that low EI may be at the root of substance abuse problems (Austin et al., 2005; Riley & Schutte, 2003). However, most of these studies, with the exception of Brackett and Mayer (2003), did not control for other variables such as psychological distress and personality. To clearly demonstrate the causal relationship between level of addiction and EI requires investigating beyond the univariate relationships between these measures (Riley & Schutte, 2003).

### ***The Self-Medication Hypothesis***

One of the current theories regarding addiction is the use of substances to self-medicate or soothe negative feelings such as anger, loneliness and depression (Goleman, 1995). Sometime during their formative years, addicts find that certain drugs or chemicals relieved their anxiety and depression, thus leading to a lifelong habit of self-medication. The Self Medication Hypothesis (SMH) proposes that addiction is more than a simple pleasure seeking activity, but a way of reducing aversive emotional states through the use of drugs and alcohol (Khantzian, 1997). The SMH hypothesis is supported by a considerable body of research (e.g., Aharonovich, Nguyen & Nunes, 2001; Harris & Edlund, 2005) and thus provides a suitable theoretical grounding for this study.

### ***Emotional Intelligence and Self-Medication***

The SMH proposes that self-medication is used by individuals to reduce psychological distress arising from an inability to regulate and positively direct emotions (Khantzian, 1997). The ability to perceive, understand and manage emotions is the basis of the emotional intelligence (EI) theories (Bar-On, 2005; Petrides & Furnham, 2001). Thus, deficits in EI may

lead to psychological distress which finally manifest as addictive behaviour. High EI is generally associated with adaptive coping and positive mood (Salovey et al., 1999; Schutte, Malouff, Simunek, McKenley & Hollander, 2002) thus it is useful to explore whether high EI precedes psychological distress, and in turn, addictive behaviour.

Studies into the antecedents of addictive behaviour have found that negative emotional states often lead to relapse, while a lack of emotional coping skills have also been shown to precede addictive behaviour (Connors, Longabaugh & Miller, 1996). Thus, this study will explore the hypothesis that low EI leads to psychological distress, and thus to addictive behaviour.

### ***Study Overview***

This study will first determine whether EI is lower, and psychological distress scores are higher in participants in a drug rehabilitation program when compared with the general population. This study will also test the hypothesis that low EI is the primary cause of addictive behaviour and also explore the relationship with psychological distress. Finally, the study will use repeated measures to examine whether EI and psychological distress scores changed significantly after four weeks in the rehabilitation program.

### ***Hypotheses***

Hypothesis 1: Participants in an addictions rehabilitation program will score lower on a measure of EI than members of the general population.

Hypothesis 2: Participants in an addictions rehabilitation program will score higher on a measure of Psychological Distress than members of the general population.

Hypothesis 3: EI will be significantly related to the behavioural measure of recovery (staff rating) even after controlling for psychological distress.

Hypothesis 4: Participants of an addictions rehabilitation program will score higher on a measure of EI and lower on a measure of psychological distress after four weeks of rehabilitation.

## Method

*Participants.* The sample of 103 participants from a residential rehabilitation program consisted of 90 males and 13 females with ages ranging from 19 to 73 years ( $M=34.03$ ,  $SD=10.62$ ). The primary drugs of addiction were reported as alcohol (48%), amphetamines (23%), cannabis (11%), heroin (10%), with cocaine and “other” making up the balance. The participants were offered a \$10 shopping voucher as an incentive to complete the survey.

*Biographical Details.* The participants’ date of birth, gender, week in program, and primary addiction were collected.

*Trait Emotional Intelligence Questionnaire.* The Trait Emotional Intelligence Questionnaire – Short Form (TEIQue-SF) was used to measure EI (Petrides & Furnham, 2003).

*Psychological Distress Scale.* The Kessler-10 (K10) is a short, 10-question, self-report scale that measures psychological distress over the previous 4-weeks (Kessler et al., 2002).

*Personality Questionnaire.* Saucier’s mini markers (1994) is a brief, 40-item version of Goldberg’s (1992) Big-Five Factor (BFF) questionnaire (1992).

*Staff Questionnaire.* Staff rated each participant on their “level of recovery” from addiction. Staff responses were made on a ten-point Likert scale. The low end of the scale was labelled “low level of recovery” and the high end of the scale was labelled “high level of recovery.”

## Results

Descriptive statistics are presented in Tables 1 and 2 alongside norms from a larger reference sample. Due to the small number of female participants ( $N=13$ ) no comparative statistics were calculated for gender. A correlation matrix for all test variables is presented in Table 3.

Table 1: *Descriptive statistics for rehabilitation participants in phase 1 of the study together with normative data for comparison purposes.*

Variable	Rehabilitation sample			Normative sample (note 1)		Difference statistic	
	Mean	SD	$\alpha$	Mean	SD	<i>t</i> -value	<i>p</i> -value
<i>Rehabilitation Measures</i>							
Age	34.03	10.62	-	-	-	-	-
Week in program	13.52	10.42	-	-	-	-	-
Staff Rating	6.15	1.42	-	-	-	-	-
K10	23.29	8.04	.91	14.20	-	12.68	< 0.0001
<i>EI</i>							
TEIQue	4.16	.86	.87	5.08	0.73	11.25	< 0.0001
<i>Personality</i>							
O	29.76	5.36	.78	29.36	4.92	0.029	0.98
C	27.72	5.91	.79	30.76	4.8	6.28	< 0.0001
E	24.57	5.89	.77	27.69	5.27	6.08	< 0.0001
A	30.13	5.96	.83	32.40	4.34	4.67	< 0.0001
N	21.28	5.69	.80	18.49	4.86	6.36	< 0.0001

Note 1: The normative sample consisted of 330 participants made up of 110 first year university students and an organisational sample of 220 clerical staff (Reid, 2007).

Table 2: Descriptive statistics for rehabilitation participants from phase 2 of the study including difference statistic from phase 1 testing.

Variable	Rehabilitation sample 4-weeks later (phase 2)			Difference statistic from phase 1	
	Mean	SD	$\alpha$	t-value	p-value
<u>Rehabilitation Measures</u>					
Staff Rating	6.73	1.44	-	1.19	0.049
K10	20.17	7.08	.92	4.94	< 0.0001
<u>EI</u>					
TEIQue	4.53	0.88	.88	5.22	< 0.0001
<u>Personality</u>					
O	30.40	4.73	.72	1.13	0.26
C	29.14	5.49	.78	3.37	0.001
E	25.54	5.61	.76	3.00	0.003
A	30.85	5.54	.81	0.94	0.35
N	20.24	5.20	.79	2.13	0.035

Table 3: Correlation matrix showing the test variables in the phase 1 study.

	1	2	3	4	5	6	7	8	9
1. Age	1								
2. Staff rating	.23*	1							
3. Week number	-.22	.62**	1						
4. K10	-.19*	-.37**	-.49**	1					
5. TEIQue	.14	.22*	.23	-.59**	1				
6. O	.07	.18	.19	-.34**	.43**	1			
7. C	.29**	.22*	.04	-.41**	.49**	.43**	1		
8. E	.06	.04	.11	-.18*	.39**	.29**	.23**	1	
9. A	.19*	.02	-.10	-.22*	.40**	.42**	.46**	.12	1
10. N	-.23**	-.19*	-.15	.27**	-.45**	-.19*	-.43**	-.15	-.39**

Note: \* designates that correlation is significant at the 0.05 level, while \*\* indicates that correlation is significant at the 0.01 level (2-tailed).

*Partial Correlation.* When the correlation between TEIQue score and the Staff rating (recovery score) is calculated while controlling for K10 (psychological distress) the correlation drops from  $r(102) = 0.22, p < .05$ , to an insignificant value  $r(102) = 0.04, p = .68$ . The path diagram in Figure 1, produced by AMOS, graphically depicts the mediating effect of the K10 psychological distress measure on EI and the Staff rating.

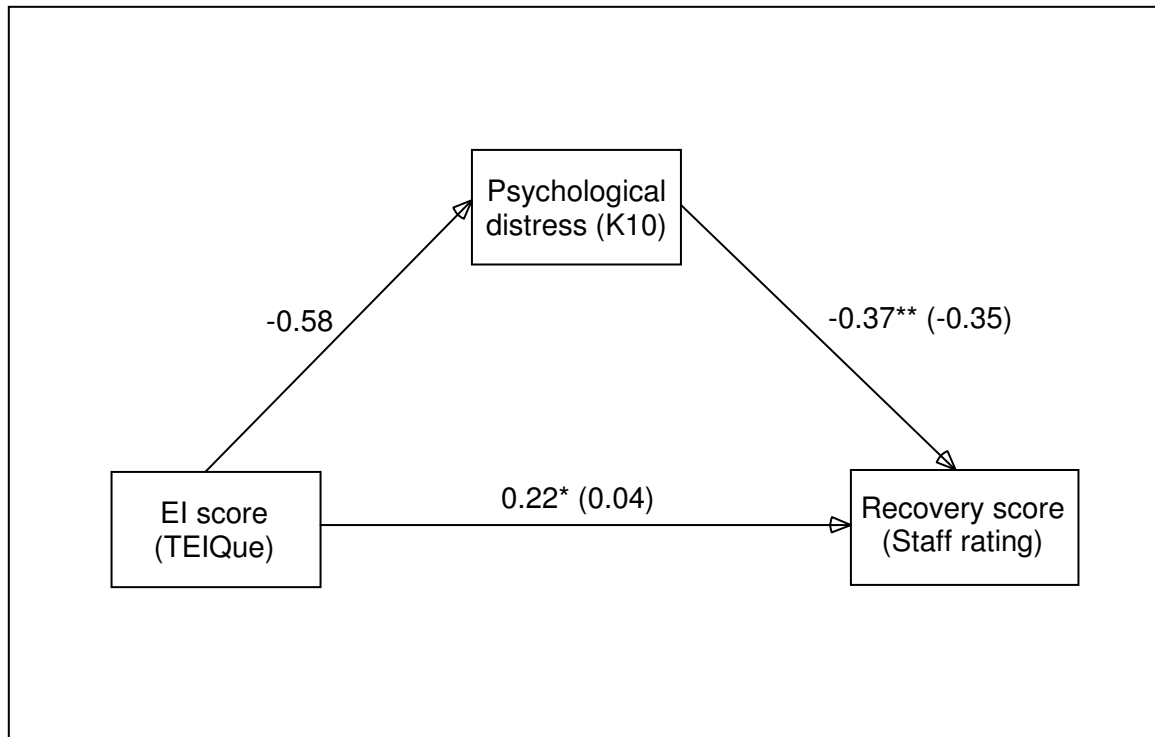


Figure 1: Path diagram produced by AMOS showing relationships between EI, Psychological distress and individual recovery scores as determined by the staff rating. This indicates how the significant relationship between the EI score and recovery from addiction scores ( $r=0.22^*$ ) reduces to an insignificant value ( $r=0.04$ ) through complete mediation by the psychological distress variable (K10).

### ***Hypothesis Testing***

*Hypothesis 1.* Participants in the rehabilitation program had significantly lower EI scores than the reference sample ( $t=11.25$ ,  $p<0001$ ). Thus, hypothesis 1 is confirmed; on average, individuals with addictions have lower EI scores than the general population.

*Hypothesis 2.* Participants in the rehabilitation program scored significantly higher on the K10 measure of psychological distress than the general population norm (see Table 1,  $t=12.68$ ,  $p<0.0001$ ). Thus, hypothesis 2 is accepted and confirmed.

*Hypothesis 3.* It was proposed that the EI score would be a significant predictor of addiction recovery status (staff rating) in the rehabilitation program, even after controlling for psychological distress (K10). This hypothesis was tested following the Kenny mediation steps (2008); step 1: the initial variable, the TEIQue is significantly correlated with the outcome



variable, the Recovery score ( $r(117) = 0.22, p < 0.05$ ); step 2: the TEIQue is significantly correlated with the mediator, K10 ( $r(117) = -0.58, p < 0.01$ ); step 3: the mediator (K10) affects the outcome ( $r(117) = -0.37, p < 0.01$ ); step 4: the mediator (K10) completely mediates the relationship between the TEIQue and the outcome and the correlation drops to virtually zero ( $r(113) = 0.04, p = .68$ ). Thus, hypothesis 3 is rejected; the effect of EI on the outcome variable, the Recovery score, is fully mediated by the psychological distress variable, the K10.

*Hypothesis 4.* It was proposed that participants in the program would score higher in EI and lower in psychological distress in phase 2, that is, after an additional month of participation in the rehabilitation program. The EI scores (TEIQue) were significantly higher and the psychological distress scores were significantly lower in phase 2 (see Table 2). Thus, hypothesis 4 is confirmed and accepted.

## **Discussion**

Previous research had indicated that participants with addictions would score lower on EI than the general population (e.g., Austin et al., 2005; Brackett & Mayer, 2003; Riley & Schutte, 2003). This was confirmed in the current sample with the average rehabilitation participants' score one SD below the general population (hypothesis 1). This represents a large effect size approaching one. Thus, initial results appeared to bear out Goleman's proposition (1995) that the main indicator of drug addiction was an inability to soothe and manage negative feelings due to low EI.

The next step, addressed by hypothesis 2, was to determine whether psychological distress was also directly related to addictive behaviour. The Self Medication Hypothesis suggests that an inability to tolerate psychological distress can lead to substance abuse (Khantzian, 1997). It was expected that rehabilitation participants would therefore score higher on a measure of psychological distress (K10) than members of the general population.

This hypothesis was confirmed, once again demonstrating a large effect size ( $d=1$ ), and a highly significant correlation with the recovery level criterion ( $r=-0.37, p<.0001$ ). High psychological distress in people with addictions does not in itself provide evidence for a causal relationship, but is an important finding when combined with research that psychological distress generally predates addiction (Abraham & Fava, 1999; Deykin et al., 1987; Gilman & Abraham, 2001).

With both EI and psychological distress (K10) significantly related to the level of recovery from addiction (see correlation matrix Table 3) the question arises as to which variable precedes the other, and which is the primary variable of the two that directly relates to drug addiction recovery status.

If Goleman was correct and addictive behaviour was primarily due to low levels of EI as a causal precedent, then a participant's EI score should still be able to significantly predict the level of addictive behaviour while controlling for other variables. However, hypothesis 3 was disconfirmed; the relationship between EI and the behavioural measure of recovery (staff rating) reduced to virtually zero when psychological distress (K10) was controlled for. Thus, the psychological distress measure was shown to be more directly related to the recovery score than EI was to the recovery score. In other words, the effect of EI on the recovery score is fully mediated by the psychological distress score. While Goleman's assertion was correct inasmuch as EI had a significant positive relationship with level of recovery in the individual, self-reported psychological distress turned out to be the primary causal factor of addictive behaviour.

The final step in this study was to determine if the participants improved their EI scores and reduced their level of psychological distress during the course of the rehabilitation program. A re-testing of the participants one month later found that EI scores had significantly improved and psychological distress scores had significantly decreased, thus

confirming hypothesis 4. The ability to improve ones EI score was confirmed by this study, and since no specific EI training had been given to participants, the improvement appears to arise from general relationship building and emotional coping exercises included in the rehabilitation program.

### ***Conclusion***

The significant improvement in EI scores and the reduction of psychological distress over a 1-month period were key findings for this study. Clearly, the statistically significant reduction in psychological distress after one month was a major benefit for the participants in the program. The improvement in EI scores, however compelling, appear to be a by-product of the general interpersonal and emotional coping skills taught in the program, since no specific EI training was provided. EI was not found to be the primary causal factor relating to addiction, but simply another indicator of “general wellness” fully mediated by the level of psychological distress being experienced by the individual.

Thus, it appears to be more effective to teach persons suffering from addictive behaviour techniques for reducing psychological distress, rather than using an EI skills intervention. The finding that the primary causal factor of addictive behaviour was psychological distress supports the Self Medication Hypothesis model that proposes that individuals use substances to self medicate to reduce psychological distress. Teaching alternative methods of reducing psychological distress thus appears to be the most promising direction for rehabilitation programs to take in the future.

In conclusion, the EI scores in this application only appear to provide a very general measure of personal and interpersonal levels of emotional functioning. As has been demonstrated by the path analysis in hypothesis 3 (Figure 1), low EI, contrary to Goleman’s assertion, was not the root cause of addictive behaviour. Psychological distress was found to be the primary causal factor leading to addictive behaviour and thus, interventions aimed at

teaching participants how to manage psychological distress would appear to most effective in future drug rehabilitation programs.

## References

- Abraham, H.D. & Fava, M. (1999). Order of Onset of Substance Abuse and Depression in a Sample of Depressed Outpatients. *Comprehensive Psychiatry*, 40(1), 44-50.
- Aharonovich, E., Nguyen, H.T., & Nunes, E.V. (2001). Anger and Depressive States Among Treatment-Seeking Drug Abusers: Testing the Psychopharmacological Specificity Hypothesis. *The American Journal on Addictions*, 10, 327-334.
- Austin, E.J., Saklofske, D.H., & Egan, V. (2005). Personality, well-being and health correlates of trait emotional intelligence. *Personality and Individual Differences*, 38(3), 547-558.
- Bar-On, R. (2005). The Bar-On Model of Emotional-Social Intelligence. In P. Fernández-Berrocal & N. Extremera (Eds.), Special Issue on Emotional Intelligence, *Psicothema*, 17.
- Brackett, M.A., & Mayer, J.D. (2003). Convergent, Discriminant, and Incremental Validity of Competing Measures of Emotional Intelligence. *Personality and Social Psychology Bulletin*, 29(9), 1147-1158.
- Connors, G.J., Longabaugh, R., & Miller, W.R. (1996). Looking forward and back to relapse: implications for research and practice. *Addiction*, 91(supp.), S191-S196.
- Deykin, E.Y., Levy, J.C., & Wells, V. (1987). Adolescent Depression, Alcohol and Drug Abuse. *American Journal of Public Health*, 77(2), 178-182
- Gilman, S.E. & Abraham, H.D. (2001). A longitudinal study of the order of onset of alcohol dependence and major depression. *Drug and Alcohol Dependence*, 63, 277-286.
- Goldberg, L.R. (1992). The Development of Markers for the Big-Five Factor Structure. *Psychological Assessment*, 4(1), 26-42.
- Goleman, D. (1995). *Emotional Intelligence: Why it can matter more than IQ*. London: Bloomsbury Publishing Plc.
- Harris, K.M. & Edlund, M.J. (2005). Self-Medication of Mental Health Problems: New Evidence from a National Survey. *Health Services Research*, 40(1), 117-134.
- Hser, Y., Hoffman, V., Grella, C.E., & Anglin, M.D. (2001). A 33-Year Follow-up of Narcotics Addicts. *Archives of General Psychiatry*, 58, 503-508.

Kenny, D. A. (2008). *Mediation*. Retrieved February 8, 2008, from: <http://davidakenny.net/cm/mediate.htm>

Kessler, R.C., Andrews, G., Colpe, L.J., Hiripi, E., Mroczek, D.K., Normand, S.-L.T., Walters, E.E., & Zaslavsky, A.M. (2002). Short screening scales to monitor population prevalences and trends in non-specific psychological distress. *Psychological Medicine*, *32*, 959-976.

Khantzian, E.J. (1997). The Self-Medication Hypothesis of Substance Use Disorders: A Reconsideration and Recent Applications. *Harvard Review of Psychiatry*, *4*(5), 231-244.

McCrae, R.R., & John, O.P. (1992). An Introduction to the Five-Factor Model and its Applications. *Journal of Personality*, *60*, 175-215.

Petrides, K.V., & Furnham, A. (2001). Trait Emotional Intelligence: Psychometric Investigation with Reference to Established Trait Taxonomies. *European Journal of Personality*, *15*, 425-448.

Petrides, K.V., & Furnham, A. (2003). Trait Emotional Intelligence: Behavioural Validation in Two Studies of Emotion Recognition and Reactivity to Mood Induction. *European Journal of Personality*, *17*, 39-57.

Petrides, K.V., & Furnham, A. (2006). The Role of Trait Emotional Intelligence in a Gender-Specific Model of Organisational Variables. *Journal of Applied Social Psychology*, *36*(2), 552-569.

Reid, J. R., (2007). *Establishing the Predictive Validity of Emotional Intelligence using Real-World Criteria*. Ph.D thesis, Department of Psychology, Macquarie University, Sydney, Australia.

Riley, H. & Schutte, N. (2003). Low Emotional Intelligence as a predictor of substance-use problems. *Journal of Drug Education*, *33*(4), 391-398.

Saucier, G. (1994). Mini-Markers: A Brief Version of Goldberg's Unipolar Big-Five Markers. *Journal of Personality Assessment*, *63*(3), 506-516.

Schutte, N.S., Malouff, J.M., Hall, L.E., Haggerty, D.J., Cooper, J.T., Golden, C.J., & Dornheim, L. (1998). Development and Validation of a Measure of Emotional Intelligence. *Personality and Individual Differences*, *25*, 167-177.

Schutte, N.S., Malouff, J.M., Simunek, M., McKenley, J., & Hollander, S. (2002). Characteristic emotional intelligence and emotional well-being. *Cognition and Emotion*, *16*(6), 769-785.

Vaillant, G.E. (1998). What Can Long-term Follow-up Teach us About Relapse and Prevention of Relapse in Addiction? *British Journal of Addiction*, *83*, 1147-1157.