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Emotional Intelligence, Alexithymia, and Psychological Well-Being Among Opioid Dependents: A Comparative Cross-Sectional Study

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Opioid remains the most lethal group of drugs. The present study aimed to assess emotional intelligence, alexithymia, and psychological well-being among Opioid dependents. Correlation among these variables was also explored. A comparative cross-sectional study was conducted with 64 opioid dependents and 64 healthy controls. Participants were above 18 years of age. Participants were recruited using purposive and convenience sampling methods. The instruments used in the study include the Trait Emotional Intelligence (TEI) Questionnaire short form (TEIQue-SF 30 items), the Toronto Alexithymia Scale (TAS-20 items), and Ryff's Psychological Well-Being Scale (42 items). t-test and Pearson correlation were performed. The finding revealed that there was a significant difference between opioid dependents and healthy controls in TEI and psychological well-being. The mean TAS score in the opioid dependence group was higher than that in the healthy control group, however, this difference was not statistically significant. TEI showed a statistically significant negative correlation with both alexithymia and psychological well-being in both groups. Moreover, positive and statistically significant associations were found between psychological well-being and TEI within both groups. Future studies should explore the underlying mechanisms connecting these constructs among individuals with opioid dependence. Understanding these relationships is crucial for developing effective prevention and intervention strategies.

Keywords: Opioids, trait emotional intelligence, alexithymia, psychological wellbeing

Opioids remain the most lethal group of drugs, significantly contributing to the global burden of disease, as highlighted in the World Drug Report 2024. The report indicates that out of 60 million individuals who have used opioids, around half have specifically used opiates, underscoring the widespread impact and prevalence of opioid use worldwide. According to the World Health Organisation (2023), the term "opioids" refers to compounds derived from the poppy plant *(Papaver somniferum),* as well as semisynthetic and synthetic compounds that exhibit similar properties and can interact with opioid receptors in the brain. While opioids are commonly prescribed for medical use, they can also be obtained illegally. Prolonged use of opioids can lead to opioid dependence, which is characterized by a compulsion to continue using the drug to avoid withdrawal symptoms (WHO, 2023). Opioid dependence is a disorder of regulation of opioid use arising from repeated or continuous use of opioids (*WHO,2023*). Dydyk et al. (2024) states that opioid dependence can manifest as physical dependence, psychological dependence, or both. When opioid-dependent patients suddenly discontinue use, they may experience withdrawal symptoms. This often drives them to seek out opioids through legal or illegal channels to avoid withdrawal. Ongoing opioid

dependence can result in addiction and lead to uncontrolled use of opioids (Dydyk et al., 2024).

Emotional intelligence (EI), as defined by Mayer and Salovey (1990), is "the ability to monitor one's own and others' feeling and emotions, to discriminate among them and to use this information to guide one's thinking and actions" (p.189). EI has been conceptualized both as trait emotional intelligence (TEI) or 'emotional self-efficacy', measured through self-report questionnaires, and ability EI or 'cognitive-emotional ability' assessed through maximum-performance tests, i.e. tests that are based on items that have correct and incorrect answers (Petrides & Furnham, 2003). Emotional intelligence, when measured as a trait, is more strongly associated with mental health than when it is measured as an ability (Schutte et al., 2007). O'Connor et al. (2019) recommend using trait measures of EI to assess behavioural tendencies and emotional self-efficacy. As demonstrated in a study by Petrides and Furnham (2003), participants with high TEI were faster at identifying the expressions as well as exhibited greater sensitivity to the mood induction procedure than their low TEI counterparts.

A critical literature review conducted by Leite et al. (2019) where they examined the relationship between EI and addiction reported that individuals with addiction disorders had worse EI scores when compared to healthy controls. The review further indicated that EI, as a dimension, can control or affect addiction (Leite et al., 2019). Additionally, review papers on EI have shown that individuals with lower EI are most likely to develop addiction disorders (Henning et al., 2021) and engage in intensive substance use (Kun & Demetrovics, 2010; Sánchez-López et al., 2022). EI encompasses both interpersonal and intrapersonal awareness, which are crucial for managing emotions and making sound decisions- areas often impaired in individuals with substance use disorders (Maghawry et al., 2024).

Ryff (1989) defined psychological well-being (PWB) in six dimensions: self-acceptance, positive relations with others, autonomy, environmental mastery, purpose in life, and personal growth. These dimensions reflect how individuals perceive their engagement with life's existential challenges, indicating a deeper level of personal development and fulfilment (Keyes et al., 2002). Research has consistently demonstrated a reliable link between EI and better PWB (Anh H. Nguyen, 2022; Davis & Humphrey, 2014; Guerra-Bustamante et al., 2019). Salovey and Mayer (1990) highlighted that failing to regulate emotions can result in individuals becoming "slaves" to their feelings, hindering their ability to cope effectively during stressful or adverse life events.

Alexithymia and EI are independent yet strongly correlated constructs, exhibiting an inverse relationship (Fukunishi et al., 2001; Parker et al., 2001). Bagby et al. (1994) define alexithymia in terms of three components: difficulty identifying feelings, difficulty describing feelings, and externally oriented thinking. Characteristics of alexithymia are associated with lower EI (Fukunishi et al., 2001).Recent studies suggest that alexithymia acts as both an indirect and direct risk factor for various substance use addictions (Qassimi et al., 2023; Henning et al., 2021; Palma-Álvarez et al., 2021; Psederska et al., 2019). By then defining alexithymia as difficulty in attending to, identifying, and describing emotion (i.e. TAS-20 factors 3, 1, 2), it became possible to equate alexithymia with the foundational phenomenon of emotional awareness and its impairments (Lane, 2020). According to Dubey and Pandey (2003), alexithymic individuals are more susceptible to mental health issues, negative emotional experiences, and a lack of hedonic capacity.

People suffering from emotional illnesses, such as depression and alexithymia, are at a higher risk of engaging in addictive behaviours as a means of coping with their emotional struggles (Youssef et al., 2023).

Rationale

The rationale of this study is grounded in a notable gap in existing literature investigating the relationship between TEI, alexithymia, and PWB in the context of opioid dependence. This study will thus lay the groundwork for providing new insights and understanding to stimulate further exploration in this area. Conducting a comparative cross-sectional study with both opioid dependents and healthy controls will enhance the understanding of emotional and psychological factors associated with opioid dependence. Furthermore, this focus on opioid dependents compared to healthy controls in this area is relatively underexplored, making the research original and significant. Therefore, the present study aims to assess the differences and relationships between TEI, alexithymia, and PWB in individuals with opioid dependence as compared to healthy controls.

Objectives

- To examine if there is a significant difference between opioid dependents and healthy controls in terms of TEI, alexithymia, and PWB.
- To examine the relationships among TEI, alexithymia, and PWB between opioid dependents and healthy controls.

Hypotheses

H^1 There are no significant differences between opioid dependents and healthy controls in TEI.

H^2 There are no significant differences between opioid dependents and healthy controls in alexithymia.

H^3 There are no significant differences between opioid dependents and healthy controls in PWB.

H^4 There are no significant relationships among TEI, alexithymia, and PWB between opioid dependents and healthy controls.

Methods

Sample

In the present study, purposive sampling techniques were employed to select participants with opioid dependence, and convenience sampling techniques were used to select healthy control participants. The intended sample size was calculated using G*Power software. The effect size, alpha error, and power of the study were set at 0.5, 5%, and 80%, respectively. The calculation indicated a required sample size of 64 in each group.

Variables

- Independent Variables: Opioid use. Two groups of participants were taken – Opioid Dependence Group (ODG) and Healthy Control Group (HCG).
- Dependent Variables: EI, Alexithymia, PWB

Inclusion criteria for ODG

- An opioid-dependent only with no history of other drugs.
- Can read and understand basic English.
- Participants must be 18 years and above.
- Local (Naga) participants of both genders.

Exclusion criteria for ODG

- Current use of any psychoactive substances other than opioids.
- Individuals with neuropsychiatric disorders or acute medical problems.

Inclusion criteria for HCG

- No history of drug use or abuse
- Can read and understand basic English
- Participants must be 18 years and above
- Local (Naga) participants of both genders

Exclusion criteria for HCG

- History of any psychiatric or neurological or acute medical problems was excluded.

Research Design

A cross-sectional design with a clinical group (opioid dependent patients) and a control group (healthy individuals) was used.

Tools of Data Collection

Toronto Alexithymia Scale (TAS) 20 item: The TAS, developed by Bagby et al. (1994), is a widely used self-report scale consisting of 20 items to assess alexithymia. This scale measures three factors that are mentioned in Sifneos' initial definition of alexithymia: difficulty describing feeling, difficulty identifying feeling, and externally-oriented thinking. Each item is rated on a 5-point Likert scale, from 1 = strongly disagree to 5 =strongly agree. Five items are reverse-scored. This study used the total scores for the subscales. The internal consistency of the TAS was found to be high, á = .815.

Ryff's Psychological Well-Being Scale (PWB): The PWB, developed by Ryff (1989), consists of 42 items that measure six dimensions of psychological well-being: autonomy, environmental mastery, personal growth, positive relations with others, purpose in life, and self-acceptance. Each of the six dimensions includes seven items, and all items are rated using a 6-point Likert scale, from 1= strongly disagree to 6= strongly agree. 21 items are reverse scored. The internal consistency of the PWB was found to be high, α = .878.

Trait Emotional Intelligence Questionnaire Short Form (TEIQue-SF): This TEIQue-SF, developed by Petrides and Furnham (2001), consists of 30 items, including two items from each of the 15 facets of the TEIQue, which encompass four distinct but interrelated dimensions: emotionality, self-control, sociability, and well-being. Responses are given on a 7-point Likert scale, from 1= completely disagree to 7 = completely agree. 15 items are reverse scored. The internal consistency of the TEIQue-SF was found to be high, α = .802.

Procedure

Initially, samples were selected based on specific inclusion and exclusion criteria. Participants in the ODG were recruited from two Opioid Substitution Therapy (OST) centers located in the Dimapur districts of Nagaland. This approach ensured control over the type of substance (i.e., opioids) used and the severity of drug use, as all participants in the OST programs were opioid dependent. After obtaining written informed consent from the participants, data collection tools were distributed. The ODG was matched with the HCG based on age, gender, and place of residence. For the HCG, responses were collected through an online link that was shared via the social media platform WhatsApp. The first section of the Google form contained the informed consent that participants had to agree to before proceeding. Following that, participants completed a demographic questionnaire, followed by TEIQue, PWB, and TAS scales in that order.

Data Analysis

Descriptive and inferential statistics were used to analyze the characteristics of the

sample and the study variables. Inferential statistics were run to test the hypotheses. Data analysis was performed using SPSS software version 25. There were no missing values since all questions were required. An independent samples t-test was utilized to compare the ODG and HCG across the three study variables. Additionally, Pearson's product-moment correlation was calculated to find out the relationship between the three study variables.

Results

Normality was checked by the Shapiro-Wilk test, and the results suggested no apparent violation of the assumption for the TEI data - ODG (p = .590) and HCG (p = .263); the TAS data - ODG (p = .977) and HCG (p = .063) as well as for the PWB data of HCG (p = .339). For PWB, ODG data (p = .001) was not normal. However, considering the skewness (.956) and kurtosis (.620) values as well as the standard error (z = .299, .590) which is smaller than 1.96, this data set was also considered normal.

Table 1. Descriptive statistics and group differences in sociodemographic characteristics.

Variables	Opioid Dependence Group		Healthy Control Group		t (126)	p	Cohen's d
	n	%	n	%			
Age group (M ± SD)	30.38±5.832		28.70±5.698				
18-27	47	73.4	44	68.8	-.581	.562	0.087
28-40	17	26.6	20	31.3			
Gender							
Male	62	96.9	62	96.9	.000	1.00	0
Female	2	3.1	2	3.1			
Highest educational level							
Under Matriculate	6	9.4	2	3.1	-4.641	<.001	0.816
Senior Secondary	22	34.4	4	6.3			
Under Graduate	20	31.3	23	35.9			
Post Graduate	16	25.0	35	54.7			
Marital status							
Single	31	48.4	48	75.0	3.617	<.001	0.637
In a relationship	10	15.6	10	15.6			
Married	22	34.4	5	7.8			
Divorced	1	1.6	1	1.6			
Employment							
Student	4	6.3	13	20.3	2.938	.004	0.529
Employed/self employed	28	43.8	32	50.0			
Unemployed	32	50.0	19	29.7			

Note. N = 128 (n = 64 for each group).

Table 1 shows that the participants in both groups match in terms of age, with the ODG having an average age of 30 years (SD = 5.832) and the HCG having an average age of 29 years (SD = 5.698). Gender was also matched with 62 male and 2 female in both groups. However, on comparing the two groups based on other sociodemographic variables, ODG was significantly different from HCG in education level (t (126) = -4.641, p < .001), marital status (t (216) = 3.617, p <.001), and employed (t (126) = 2.938, p = .004).

Table 2. Level of scores on study variables.

Scale	Group	Low n (%)	Moderate n (%)	High n (%)
TEI	ODG	23 (35.9)	35 (54.7)	6 (9.4)
	HCG	12 (18.8)	22 (34.4)	30 (46.9)
PWB	ODG	27 (42.2)	30 (46.9)	7 (10.9)
	HCG	5 (7.8)	33 (51.6)	26 (40.6)
		Non-Alexithymia	Possible Alexithymia	Alexithymia
TAS	ODG	19 (29.7)	20 (31.3)	25 (39.1)
	HCG	26 (40.6)	20 (31.3)	18 (28.1)

Note. Frequencies are presented in parentheses.

Table 2 shows a comparison between the two groups. The low level of TEI was higher in the ODG compared to the HCG while the high level of PWB was higher in the HCG than in the ODG. Additionally, alexithymia was more in the ODG than the HCG.

Table 3. Mean, Standard Deviation, and t-Test of Groups on Study Variables.

Variables	Opioid Dependence Group[a]		Healthy Control Group[a]		t (126)	p	Cohen's d
	M	SD	M	SD			
TEI							
Wellbeing	28.156	6.234	31.125	5.602	-2.834	.005	0.501
Self-control	23.734	3.479	26.531	4.794	-3.777	.000	0.668
Emotionality	32.922	5.573	37.906	5.459	-5.111	.000	0.904
Sociability	24.656	4.890	26.063	4.783	-1.645	.103	0.291
Total	125.656	16.990	141.140	18.386	-4.948	<.001	-0.875
TAS							
Difficulty Describing Feelings	15.078	3.316	14.688	3.532	.645	.520	0.114
Difficulty Identifying Feeling	20.391	6.163	19.453	5.987	.873	.384	0.154
Externally-Oriented Thinking	22.156	3.700	21.203	2.761	1.652	.101	0.292
Total	57.625	10.385	55.343	10.112	1.259	.210	0.223

PWB							
Autonomy	24.938	3.940	27.594	5.291	-3.222	.002	0.569
Environmental Mastery	24.344	4.657	27.063	4.320	-3.424	.001	0.605
Personal Growth	26.984	4.341	31.453	5.303	-5.217	.000	0.922
Positive Relations with Others	26.344	6.134	31.203	5.192	-4.837	.000	0.855
Purpose in Life	26.922	5.990	30.719	5.865	-3.623	.000	0.641
Self-Acceptance	25.453	5.486	29.109	6.136	-3.554	.001	0.628
Total	154.984	22.940	177.140	24.204	-5.315	<.001	-0.940

Note.[a]n=64 for each group.

Table 3 shows an independent sample t-test performed to compare the means of the ODG and the HCG on the study variables. There was a significant difference between groups in TEI (t (126) = -4.948, p < .001) and PWB (t (126) = -5.315, p < .001). The mean of the healthy controls was both higher i.e 141.140 (95% CI: -21.677, -9.291) in TEI and 177.140 (95% CI: -30.406, -13.907) in PWB than the mean of the opioid dependents. Although, there was no significant difference in TAS (t (126) = 1.259, p = .210) between the groups, the opioid dependents had a higher mean 57.625 (95% CI: -1.305, 5.867) than the healthy controls.

Table 4. Intercorrelations for Study Variables Disaggregated by Groups.

Variables	TEI	TAS	PWB
TEI	-	-.591**	.662**
TAS	-.736**	-	-.507**
PWB	.747**	-.661**	-

Note. The results for the ODG (n=64) are shown above the diagonal. The results for the HCG (n=64) are shown below the diagonal.

**p < 0.01, two-tailed

Table 4 shows the results of Pearson's correlation which was performed to find out the relationship between the study variables in the groups. The findings indicate that TEI was moderately negatively correlated with alexithymia in the ODG, r (63) = -.591, p < .01 and highly negatively correlated in the HCG, r (63) = -.736, p < .01. Additionally, alexithymia was moderately negatively correlated with PWB in both opioid dependents, r (63) = -.507, p < .01 and healthy controls, r (63) = -.661, p < .01. Finally, the results show that TEI was moderately positively correlated with PWB in ODG, r (63) = -.662, p < .01 and highly positively correlated with HCG, r (63) = -.747, p < .01.

Discussion

The present study aimed to assess the differences in TEI, alexithymia, and PWB among persons with opioid dependence compared to healthy controls. The findings of this study revealed that the ODG had a lower TEI score compared to the HCG. This result aligns with previous research indicating that individuals with substance use disorders, including opioids, exhibit significantly lower mean scores in total EI and its subscales compared to HCG (Maghawry et al., 2024). Similarly, a systematic review by Kun and Demetrovics (2010) and a critical literature review by Leite et al. (2019) also reported that individuals with addiction disorders scored lower EI compared to healthy controls. According to the self-medication hypothesis, substance abuse is a self-

regulation disorder (Khantzian, 1997). This hypothesis emphasizes that substance-dependent individuals face difficulties not only in understanding their feelings but also in regulating their self-esteem, relationships, and self-care (Khantzian, 1997). Low EI can hinder a person's ability to maintain healthy relationships and self-esteem, which are crucial for emotional well-being. This inability can drive individuals to seek relief through substance use.

The present study also showed that ODG had significantly lower PWB than the healthy controls. In a Golestan cohort study, individuals with opioid use disorder were twice likely to have psychological distress compared to those without the disorder (Alvand et al., 2023). A systematic review revealed a strong connection between mental disorders and opioid overdose, emphasizing the severe psychological impact of opioid use (van Draanen et al., 2022).

However, the present findings did not demonstrate a significant difference between ODG and HCG regarding alexithymia, which contracts existing literature (Akkuº & Avºar, 2024; Giynas Ayhan et al., 2020; Psederska et al., 2019).This lack of significant difference may be attributed to sample characteristics such as educational level, marital status (Boukar & Dane, 2019) as well as occupational status (Kauhanen et al.,1993),which are inversely related to the TAS scores, even among normal subjects. Another reason could be psychosocial factors such as family problems which are positively correlated to alexithymia (Janiec et al., 2019). Additionally, duration and severity of opioid dependence could be another influencing factor.

Another aim of the study was to assess the relationship between TEI, alexithymia, and PWB among ODG and HCG. As per the findings, TEI has a significant positive correlation with PWB supporting the notion that individuals with higher levels of TEI also experience greater PWB. This finding is consistent with previous research (Guerra-Bustamante et al., 2019; Shahzad et al., 2013; Stepanjko, 2023). Additionally, the study found a significant and considerable negative correlation between alexithymia and TEI in both groups. This supports earlier findings by Parker et al., (2001) who had reported in their study that alexithymia and EI are strongly correlated (inversely) constructs, though they are independent of each other. Furthermore, a significant negative correlation was also observed between alexithymia and PWB. Previous findings have shown that higher level of alexithymia are associated with lower resilience and higher stress, which negatively impacts overall PWB (Zhang et al., 2023). Another study conducted by Dubey and Pandey (2013) also found that alexithymia is significantly associated with mental health problems. Their research suggested that individuals with high levels of alexithymia tend to experience more negative emotions and fewer positive emotions, leading to poorer PWB. Additionally, a study conducted with young adults reported that high levels of alexithymia are associated with increased psychological distress (Saikkonen et al., 2018).

Conclusion

The findings suggest that individuals with lower levels of EI are more likely to develop opioid dependence. This indicates that enhancing EI could be a potential intervention strategy for preventing opioid dependence issues. Alexithymia, characterized by difficulties in identifying and expressing emotions, is shown to have a significant negative correlation with EI. Higher levels of alexithymia are associated with lower PWB and an increased vulnerability to opioid dependence. This relationship underscores

the importance of emotional awareness in maintaining mental health. While the study provides valuable insights, there are some limitations. First, the majority of participants were young adult males, which presents a limitation in terms of generalizability. However, it also highlights the importance of focusing on this specific age group to understand why young adults are particularly affected. Future research should include a more diverse sample to validate the results while continuing to explore the unique factors influencing substance use among young adults. Findings from a narrative review by Harris and Weitzman (2024) indicated that while the overall proportion of youth using substances declined, the intensity of consumption and levels of disorder among those who use substances increased. Factors contributing to these trends included poor mental health, social factors, and pandemic stressors (Harris & Weitzman, 2024). Second, the study relied on self-report questionnaires, which entails the risk of reporting bias and other associated confounding factors. Finally, the cross-sectional design limits the ability to conclude cause-and-effect relationships among the variables. However, this design does provide a foundational understanding of the context and variables of interest. Despite the limitations, the outcome of the present study suggests the need to investigate the underlying mechanism that links alexithymia, TEI, and PWB among individuals with opioid dependence. Understanding the interplay between these constructs could lead to more effective prevention and intervention strategies for opioid dependence. In summary, the paper emphasizes the critical roles of EI, alexithymia, and PWB in understanding opioid dependence while also recognizing the need for further research to address its limitations and expand on its findings.

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