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Adversity Intelligence's Mediating Role Between Emotional Intelligence and Vaping Dependency: An Intervention Program Basis

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Abstract. *Introduction* In the past years, vape use prevalence has been marked among unfavorable workplaces including its repercussions, and the gap between adversity intelligence (AI) and vaping dependency (VD) was also evident.
Aim This study aimed to determine if AI intervenes in emotional intelligence (EI) and VD and their relations. This study had Filipino (n= 388) employed young adults (18-40) through an online survey.
Result The results showed medium EI, high VD, and below average AI, while EI and AI paths have a positive estimate= 0.7260, p< .001 and a negative estimate= -0.0282, p= 0.010 between AI and VD. The surprising positive estimate= 0.041, p< .001 of EI and VD was a contextual factor.
Conclusion Abruptly, AI served as a suppressor (estimate= -0.006, p< 0.019) indicating that VD may reduce when EI noise is repealed. Thus, EI may positively influence AI, and AI may negatively affect VD. AI's influence between EI and VD shows inconsistent mediation.

Introduction

The enticing market of vapes (pleasing taste and smell) as tobacco substitutes elicited young adults to vaping dependency (VD) (Department of Health, 2024). In fact, there are 86.1 million (estimated) of dependents globally in the year 2023 (David, 2025), while the Philippines has 1.63 million (estimated) of young adult users (John Hopkins, 2024). Further, a study claimed its prevalence among groups with low income, less education, high anxiety, and low conscientiousness (Teah & Conner, 2021). Another empirical study determined that perceived stress (PS) due to external factors triggers vaping (Sulaiman & Singla, 2024). For instance, studies confirmed that workplace mobbing and hazard issues affect psychological well-being (Michulek et

al., 2024; Yin et al., 2023). Hence, a work setting with an unfavorable environment, such as services, finance, education, entertainment, and technology, may cause psychological and medical problems (Candelario et al., 2024; Psychreg, 2025).

Other variables that can be linked to VD are Emotional Intelligence (EI). Adversity Intelligence (EI). Fteiha and Awwad (2020) have explained EI as the capability to understand one's own emotion including others. In addition, a study identified vaping as a risky behavior (RB) (Pines, 2026). Sekar and Bhuvaneswari (2023) reported that low EI significantly predicts RB. This can also reinforce a prior result that low EI is associated with substance and internet dependency (Henning et al., 2021). Besides, a study showed that improved EI can lower e-cigarette dependence (ED) (Mohamed et al., 2026).

Furthermore, VD was explained by the California Medical Association (2020) as a compulsive consumption of a flavored steam with a vape or related device. Synthetic flavors, scents, and nicotine integration can rework dopamine levels, which heighten VD (Lopez-Ojeda & Hurley, 2024). The onset could be as early as the teenage years (Wojciechowski, 2025). Further, 20 days or more (vape use) suggests recurrent vaping and can turn to dependence (Vogel et al., 2020). Pienkowski et al. (2024) revealed young adults' tendency to become dependent right after a month. VD signs and symptoms are as follows (National Addictions Management Services, 2025): habitual consumption, consistent use for satisfaction, notable financial expenses, and failed quitting attempts.

Alternately, Chadha (2021) asserted that AI is one's versatility in life challenges. An empirical study identified a positive association between AI and Professional Quality of Life (ProQL), a negative association with perceived stress (PS), and a mediating role of AI (Lu et al., 2024). Sukmahidayat et al. (2020) instantiated quality AI in boosting drug recovery, and this confirm resilience as a VD predictor (Romm et al., 2022). Other studies set positive associations of AI, EI, education, optimism, and social support (SS) (Rumondor et al., 2023). Additionally, the AI's mediating role was conspicuous in public service (Fidova & Pareke, 2024) except in

teachers' depersonalization and job performance (Nullan, 2023). There are no direct studies that discuss VD and adversity intelligence (AI) link signifying an empirical gap (Baako et al., 2022) whereas a related framework such as Stress and Coping Theory, introduced by Richard Lazarus and Susan Folkman in the 1980s, (Biggs & Brough, 2025) illustrated the reduction or elimination of stressors through emotion or problem focused coping which is connected from deeper introspect (cognitive appraisal).

Since low EI and AI may contribute to vaping (a maladaptive coping mechanism), interventions focused on cognitive reframing, such as cognitive behavioral therapy (CBT), can be a relevant solution. This intervention, developed by Dr. Aaron Beck in the 1970s, is predicated on the proposition that thoughts on circumstances influence affect (Beck & Fleming, 2021). McLeod (2023) presents a cognitive triangle of interdependence among thoughts, emotions, and behaviors, and also self-defeating thoughts or cognitive distortions. This has a questioning series that distinguishes maladaptive behaviors and assists clients in acquiring adaptive functioning.

Based on the above description, this study aimed to examine the mediating role of AI between EI and VD, which served as the basis for formulating a CBT-based intervention program (see Figure 1).

Research Questions

The study aims to analyze the mediating role of AI between EI and VD. This intends to answer the following questions:

1. Is there a direct association between EI and AI?
2. Is there a direct association between AI and VD?
3. Is there a direct association between EI and VD?
4. Does AI significantly mediate EI and VD?
5. Based on the findings, what intervention program can be proposed to address working young adults' vaping dependency?

Hypotheses of the Study

The study is focused on determining associations among variables. It tested the following hypotheses:

1. There is a significant relationship between EI and AI.
2. There is a significant relationship between AI and VD.
3. There is a significant relationship between EI and VD.
4. Adversity intelligence significantly mediates EI and VD.

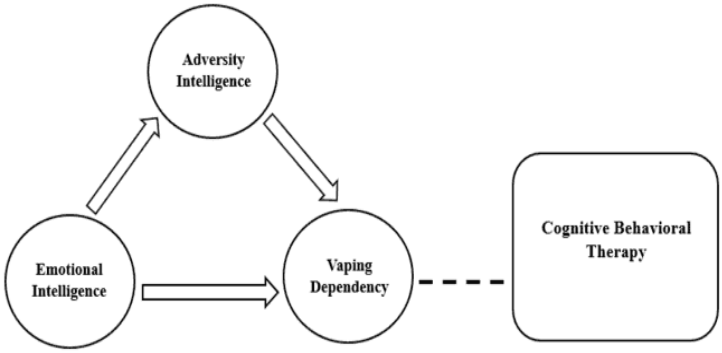

Figure 1. Conceptual Framework

Method

Research Design

This study employed a quantitative research design to examine relationships among EI, AI, and VD. A mediation analysis is vital to validate AI's mediating role, as the likelihood of EI influencing AI was evident (Rumondor et al., 2023; Fidova & Pareke, 2024). This is applied to a larger sample size (Ghanad, 2023) and is classified as a cross-sectional, predictive, and non-experimental study (Autriz et al., 2024).

Population and Sampling

The G Power 3.1 has computed a sample size of n= 312 with f^2= 0.05 (small effect size), alpha level= 5%, with 2 predictors and it exceeded (n= 388). A purposive sampling was established based on the respondents' availability and with particular criteria (Tajik et al., 2025).

Respondents of the Study

Due to the prevalence of vape use among young adults, the target age group was from 18 to 40 years (Beyer & Lazzara, 2020). Other criteria were gender (male, female, etc.) civil status (single, married, live-in, etc.) provinces (Luzon), user type (vape user only, dual user, and substitute user) (Xie et al., 2020), employment type (service, administrative, healthcare, etc.), education, (high school level at least) and income level (≥ P11, 690 monthly) (Alvarado & Ramos, 2024) and vapers taking illicit substances were excluded (Saran et al., 2022). Other determinants are Filipino from the Luzon area, e-cigarette user (≥ 1 month), and a private or government worker. The above-mentioned variables were controlled for accurate outcomes (Bhandari, 2021).

Research Instrument

The instruments employed are as follows:

1. Brief Emotional Intelligence Scale (BEIS-10). This tool, developed by Kevin Davies and other proponents in 2010 (Hegarty et al., 2025), has α = .74 to .91 (total scale, acceptable to good), while the present samples have α = .94 (excellent). Total scores and interpretation are as follows: 10 to 29-low, 30 to 34-below average, 35 to 41-average, 42 to 46-above average, and 47 to 50-high.
2. Adversity Response Profile (ARP). This test, created by Paul Stoltz in 1997 (Baog & Cagape, 2022), has α= .71 to .81 (acceptable) for the subscales, while the current samples have α= .95 (excellent). The scoring was based on raw scores and multiplied by 2. Scoring and interpretation are as follows: 40 to 118-low, 119 to 135-below average, 136 to 157-average, 158-175-above average, and 176 to 200-high.
3. Penn State Electronic Cigarette Dependence Index (PS-ECDI). This instrument, introduced by Jonathan Foulds and other developers in 2015 (Vogel et al., 2020), has α= .72 (acceptable), and the latest samples have α= .76 (acceptable). The sum was determined, and the descriptions are as follows: 0 to 3-not dependent, 4 to 8-low dependence, 9 to 12-medium dependence, and 13 above-high dependence.

The translation procedure was based on the method introduced by Dorcas Beaton and other proponents in the year 2000 (Dias, 2024). The forward translation was

performed by a bilingual expert, and the back translator was blinded to the original texts. Then, a pilot test with n=30 was conducted for reliability or validation intent and also to evaluate comprehensiveness.

Data Gathering Procedure

This study, granted by the Ethics Review Committee (ERC), has the code DERC_25-26_144M. The approved questionnaires were displayed through Google Forms and disseminated through social media platforms. The informed consent (in English and Filipino) includes a confidentiality clause and a withdrawal option. Private details were secured with password features.

Statistical Treatment of Data

After dataset consolidation in spreadsheets, data cleaning was conducted to address duplicates, missing data, and typographical errors. The applications JASP 0.18 and Stata 18 were used to calculate central tendency, frequency, percentage, and standard deviation, and for mediation analysis. The assumptions examined were collinearity and normality. The intervention program was based on the results of the study.

Result

The demographic profile reveals that the majority were vape-only users (94.85%), males (53.09%), aged 25–31 (51.80%) (median 28), married (52.06%), high school graduates (49.74%), and lower-middle earners (37.63%). Further, the assumption checking revealed that EI, AI, and VD have VIF= 1.08 and tolerance of 0.95, indicating a moderate correlation and unviolated collinearity, and the Shapiro-Wilk Test shows a non-normal distribution ($p < .001$).

Table 1. *Emotional Intelligence of the Respondents*

Items	Mean	SD	Verbal Interpretation
1. I know why my emotions change.	4.38	1.13	Agree
2. I easily recognise my emotions …	3.94	0.91	Agree
3. I can tell how people are feeling ...	4.09	1.10	Agree
4. By looking at their facial expressions …	4.00	1.15	Agree
5. I seek out activities that make me happy.	4.01	1.21	Agree

6. I have control over my emotions.	3.95	1.14	Agree
7. I arrange events others enjoy.	4.13	1.11	Agree
8. I help other people feel better …	4.04	1.02	Agree
9. When I am in a positive mood …	4.15	1.07	Agree
10. I use good moods to help myself …	4.17	0.96	Agree
Overall Mean Score	**40.86**	**6.11**	**Average EI**

Table 1 shows the overall mean score of 40.86 (SD = 6.11), which falls within the "average emotional intelligence range," indicating functional emotional skills.

Table 2. *Adversity Response Profile of the Respondents* (N=388)

Adversity Response Profile (ARP)	**Mean**	**SD**	**Verbal Interpretation**
1. You suffer a financial setback. To what extent can you influence …	3.77	1.19	Almost Completely
2. You are overlooked for a promotion. To what extent do you feel …	2.82	1.32	Neutral
3. You are criticized for a big project that you just completed ...	2.86	1.46	Neutral
4. You accidentally delete an important email. The consequences …	3.07	1.43	Neutral
5. The high-priority project you are working on gets cancelled …	3.08	1.48	Neutral
6. Someone you respect ignores your attempt to discuss …	2.90	1.43	Neutral
7. People respond unfavourably to your latest ideas …	2.99	1.41	Neutral
8. You are unable to take a much-needed vacation …	2.96	1.48	Neutral
9. You hit every red light on your way to an important …	2.86	1.47	Neutral
10. After extensive searching, you cannot find an important …	3.13	1.42	Neutral
11. Your workplace is understaffed. To what extent do you feel …	2.95	1.49	Neutral
12. You miss an important appointment. The consequences …	2.91	1.45	Neutral
13. Your personal and work obligations are out of balance …	2.87	1.42	Neutral
14. You never seem to have enough money. The consequences …	2.91	1.49	Neutral
15. You are not exercising regularly though you know …	3.07	1.45	Neutral
16. Your organization is not meeting its goals. To what extent …	3.03	1.43	Neutral
17. Your computer crashed for the third time this week …	3.01	1.44	Neutral
18. The meeting you are in is a total waste of time. To what extent …	2.75	1.48	Neutral
19. You lost something that is important to you. The consequences …	2.93	1.42	Neutral
20. Your boss adamantly disagrees with your decision …	3.18	1.50	Neutral
Overall Mean Score	**120.11**	**16.49**	**Below Average**

Table 2 shows the overall mean score of 120.11 (SD = 16.49), which falls within the low range, indicating that respondents generally demonstrate relatively low perceived control and accountability in managing adverse situations.

Table 3. *Vaping Dependency of the Respondents (N=388)*

Penn State Electronic Cigarette Dependence Index (PS-ECDI)			
Items	**Response**	**Frequency**	**Percent**
1. How many times per day do you usually use your electronic cigarette …	0-4 times a day	8	2.06
	5-9 times a day	32	8.25
	10-14 times a day	63	16.24
	15-19 times a day	60	15.46
	20-29 times a day	81	20.88
	30 or more times a day	144	37.11
2. On days that you can use your electronic cigarette freely, how soon …	0-5 min	8	2.06
	6-15 min	32	8.25
	16-30 min	54	13.92
	31-60 min	65	16.75
	61-120 min	157	40.46
	121 and above min	72	18.56
3. Do you sometimes awaken at night to use your electronic cigarette?	No	48	12.37
	Yes	340	87.63
4. If yes, how many nights per week do you typically awaken ...	0 to 1 night	40	10.31
	2 to 3 nights	98	25.26
	4 or more nights	250	64.43
5. Do you use an electronic cigarette now because it is really hard …	No	33	8.51
	Yes	355	91.49
6. Do you ever have strong cravings to use an electronic cigarette?	No	33	8.51
	Yes	355	91.49
7. Over the past week, how strong have the urges to use …	None/Slight	16	4.12
	Moderate/Strong	135	34.79
	Very Strong/Extremely Strong	237	61.08
8. Is it hard to keep from using an electronic cigarette in places …	No	35	9.02
	Yes	353	90.98
9. When you haven't used an electronic cigarette for a while or when you tried to stop using… Did you feel more irritable …	No	39	10.05
	Yes	349	89.95
10. Did you feel nervous, restless, or anxious because you couldn't use …	No	41	10.57
	Yes	347	89.43
	Overall Mean Score (SD)	**16 (4)**	**High Dependence**

Table 3 shows a concerning picture of severe dependence among e-cigarette users. The combination of frequent use (30+ times/day for 37.11%), disrupted sleep (87.63% waking at night to vape), strong cravings (91.49%), emotional (irritability, anxiety), and withdrawal symptoms underscores the need for intervention strategies.

Mediation Analysis

Table 4. *Path estimates*

					95% Confidence Interval	
	Label	**Estimate**	**SE**	**Z**	**p**	**Lower**	**Upper**
EI → AI	a	0.7260	0.1321	5.50	<.001	0.4671	0.98478
AI→ VD	b	-0.0282	0.0109	-2.59	0.010	-0.0496	-0.00683
EI → VD	c	0.1459	0.0295	4.95	<.001	0.0881	0.20366

Note. Delta method standard errors, normal theory confidence intervals, ML estimator.

Table 4 presents that EI to AI has estimate = 0.726 and $p < .001$, indicating that EI may positively influence AI. The AI and VD estimate = -0.0282 and $p = .01$ would mean that AI may negatively affect VD and may also fill an empirical gap. Then, the EI and VD estimate = 0.1459 and $p < .001$ signify that EI may affirmatively impact VD.

Table 5. *Direct effects*

					95% Confidence Interval	
	Estimate	**SE**	**Z**	**p**	**Lower**	**Upper**
EI → VD	0.041	0.008	4.951	<.001	0.025	0.058

Note. Delta method standard errors, normal theory confidence intervals, ML estimator.

Table 5 shows that the direct effect of EI on VD has an estimate = 0.041, $p < .001$, indicating a complex relationship that may reflect contextual factors.

Table 6. *Indirect effects*

					95% Confidence Interval	
	Estimate	**SE**	**Z**	**p**	**Lower**	**Upper**
EI → AI→ VD	-0.006	0.002	-2.340	< .019	-0.011	-9.428×10^{-4}

Note. Delta method standard errors, normal theory confidence intervals, ML estimator.

Table 6 presents the indirect effect through AI, which is negative and significant (Estimate = -0.006, $p < .019$). This reflects an inconsistent mediation or suppression effect.

Table 7. *Total effects*

					95% Confidence Interval	
	Estimate	**SE**	**Z**	**p**	**Lower**	**Upper**
EI → VD	0.036	0.008	4.381	<.001	0.020	0.051

Note. Delta method standard errors, normal theory confidence intervals, ML estimator.

Table 7 presents that the total effect of EI on VD (Estimate = 0.036, $p < .001$) remains positive but slightly smaller than the direct effect, reflecting AI as a buffering variable.

Intervention Framework

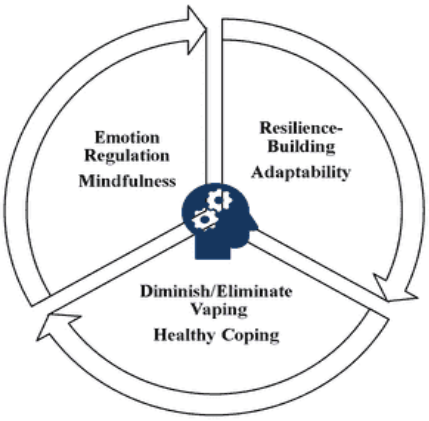

Figure 2. Intervention Framework

The program alignment referred to the descriptive statistics outcomes since the mediation showed suppression. This may commence through intake assessments followed by emotion regulation, including mindfulness and breathing exercises, and setbacks simulation with socioeconomic reality themes, which can be connected with Stress and Coping Theory, where cognitive appraisal is a determinant for coping behavior (Biggs & Brough, 2025). Conjugal issues replication may be added due to a high percentage (demographics). Progress monitoring can be tracked using self-assessment tools (with technology), inserting feedback and milestone recognition. Mentorship, peer groups, community-based activities (for social support), and public education (with vape quitters' narratives) may also nourish life sturdiness, which can support the relevance of social factors in Resilience Theory (Suslovic & Lett, 2024).

Discussion

The demographic profile suggests that respondents face challenges in transitioning to full adulthood, as evidenced by struggles with professional competency, personal obligations, and daily work duties (Herzog, 2024). Furthermore, the BEIS-10 results indicate a moderate level of emotional awareness and a baseline ability to practice self-soothing. Additionally, data from PS-ECDI revealed that sleep disturbances and anxiety serve as significant predictors of VD (Goel, 2025). In fact, Halladay et al. (2025) determined that various psychological distresses (e.g., depression, self-harm) can predict vaping. Overall ARP scores signify that respondents predominantly rely on short-term coping mechanisms when facing adversities (Joseph, 2025).

The positive and significant association of EI and AI contributes to professional competence (Widodo et al., 2022). Moreover, the observed negative relationship between AI and VD helps bridge an empirical gap, contrasting with Kaloriya (2024), who previously reported this association as insignificant. A positive and significant direct effect of EI on VD indicates a context-dependent relationship that deviates from previous findings. The result suggests that emotional awareness alone may not ensure adaptive behavioral outcomes without corresponding coping mechanisms (Jawabreh, 2024), whereas Chaleechad et al. (2026) reported no significant relationship between the two variables. Conversely, a study identified EI as a factor in mitigating psychological issues (Agusto-Landa et al., 2024).

Mainly, the negative and significant indirect effect indicates that AI acts as a suppressor, explicitly removing EI noise and influencing VD (Allison, 2022). Consequently, the proposed intervention framework emphasizes that enhancing both EI and, more critically, AI is essential for reducing or eliminating VD among young adult workers.

Conclusion

Respondents generally show average EI, high VD, and below-average AI, suggesting moderate emotional management yet low perceived control and liability in the face of adversity. The path coefficients show that EI may positively influence AI, and AI negatively affects VD. The statistical mediation did not evince a direct causal link and identify EI and VD positive and significant associations as a contextual factor and AI as a suppressor. There could also be issues in generalizability or external validity.

Suggestion

The selection of healthy coping strategies should hinge on EI upskilling. Further inquiries can also be instigated to figure out which EI variances are rescinded by AI. An exploration of path estimate AI and VD is encouraged since this may be the only study filling the gap. The program should be implemented as part of the employee assistance program (EAP) in the workplace.

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Authors' Contributions

JANL conducted an online survey and composed the manuscript. JND is the research adviser and editor. All authors read and approved the final version of the manuscript.

Competing interest

The authors do not declare any competing interests.

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