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From Social Circles to Smoke Clouds: The Impact of Group Dynamics on Reduction in the Use of Vaping and Mental Wellness

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ABSTRACT
The study aims to explore how group dynamics affect the decrease in vaping behaviors and the resultant effect on mental wellness. Vaping has recently become a major concern in public health, especially in the adolescent population and young adults, and the mental health effects are usually associated with anxiety and depression. Peer support, social norms and group behavior are some of the group dynamics that have been identified as key factors influencing addictive behaviors. This investigation aimed at analyzing the effect of group environments on cessation of vaping and mental well-being. By analyzing the results of the study, the results show that positive group dynamics play an important role in vaping reduction and mental health promotion. The support of the group interaction is emotional support, a feeling of belonging, and the development of coping mechanisms that allow the person to stop vaping, no longer needing to do it, and to become healthier mentally. The research underlines the significance of group-based interventions, including peer-based support groups and therapy, as far as both vaping cessation and mental well-being are concerned. These findings indicate that the application of group dynamics in substance use interventions is a potentially effective approach to vaping addiction and the enhancement of the mental outcomes of vulnerable populations. The study implications relate to the creation of more effective, socially supportive and accessible intervention programs.

Keywords: Group Dynamics, Vaping Behaviour, Mental Wellness, Young Adults,

Introduction

Vaping is an emerging concern related to public health, especially in adolescents and young adults, as more people are concerned about the physical and mental health effects of this behaviour. E-cigarettes were initially marketed as a harm-reduction tool, and an alternative to smoking, to help smokers quit the combustible tobacco. Nevertheless, it is increasingly clear that vaping activities, particularly in combination with nicotine and other drugs such as THC, can be related to severe mental health issues, such as anxiety, depression, and mood disorders (Patten, 2021; Willett et al., 2023). Group dynamics, including peer pressure, social norms, and group behavior have all been used to understand the

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mechanics of smoking, but there is little information on the influence of these factors on vaping cessation and mental health. The proposed study will explore how group dynamics improves the decrease in the use of vaping and its overall contribution to mental wellness.

The impact of group dynamics such as psychological and social forces that shape the relationship and behavior of a group has a deep influence on health behaviors. Group situations can either be supportive of the habit or help to quit, depending on the social norm and peer influence in the vaping context (Machado-Marques & Moyles, 2024; Yule & Tinson, 2017). Moreover, the psychological mechanisms that take place in such groups may both favor resilience and coping skills, and the development of mental health problems, thus establishing an intricate pattern of group actions and the personal mental health (Neuman, Assaf, & Cohen, 2012). The impact of peers is especially strong among teenagers, when the need to belong or fulfill social pressure may easily result in the adoption of such practices as vaping, which is frequently normalized in peer groups (Sanchez et al., 2020; Skinner et al., 2024). On the other hand, the supportive group interventions, including group therapy or peer-led cessation programs, have demonstrated potential in achieving positive mental health outcomes and decreasing substance-use behavior (Winship & Hardy, 1999; Parks, 2020).

The correlation between the group dynamics and vaping behavior is complex and according to the studies, it may result in both positive and negative outcomes. The impact of group dynamics on decisions made by people to engage in and continue to engage in an activity such as vaping is the fact that group dynamics usually reinforce an activity based on group attitudes and behaviors (Hernandez, Ranjit, & Collins, 2024). A body of research demonstrated that group identity and social norms may have a significant influence on the possibility of engaging in or stopping behaviors such as smoking and vaping (Piombo, Barrington-Trimis, & Valente, 2023; Denson et al., 2024). Groupthink, the tendency to make irrational or dysfunctional decisions under the influence of the desire to maintain harmony or conformity to a group may also be the factor contributing to the vaping behavior perpetuation in case the peer pressure or a shared ideology facilitates the normalization of a given behavior (Parks, 2020).

Moreover, group dynamics are strongly associated with mental wellness due to the activities of people who tend to use group environments to seek emotional support, relieve stress, and find social acceptance. Positive group dynamic has the potential of improving mental wellbeing through a sense of belonging and meaning to a community (Kelly et al., 2012). Conversely, negative group influences, including ostracism, stigmatization, or social isolation may also lead to poor mental health outlooks, especially when it is coupled with addictive habits, such as vaping (Willett et al., 2023). Depression and anxiety are more common in young vapers, and they can worsen or improve based on social contexts when in a group (Patten, 2021; Evans & Alkan, 2024).

It is important to unravel the complexity of group dynamics in vaping habits and psychological health to come up with effective strategies. Some studies have emphasized the necessity of the implementation of specific approaches to vaping cessation that would consider the social factors, including the support of peers, group-based treatment, and community-based interventions (Sanchez et al., 2020; Wyman et al., 2020). Also, the fact that vaping intersects with mental health problems emphasizes the need to incorporate mental health care into cessation interventions to support not only the behavioral component of addiction but also the emotional one (Rahman, Sebar, & Sofija, 2024). With vaping remaining one of the primary concerns among young people, the insights on how a group dynamic can be applied to affect its decline and the mental health outcomes will prove to be invaluable in devising comprehensive approaches to public health.

This research has been designed to explore the way the group dynamics in BPO workplaces affected two important outcomes: the decrease of vaping behaviour and enhancement of mental wellness among the employees exposed to occupational stress.

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1. Review Of Literature

1.1 Group Dynamics and Use of Vaping

Some studies have shown that the social environment of vaping is of paramount concern in onset and continuation. Yule and Tinson (2017) referred to Vaping to a social ritual, typologies of users among the youth, and their emotional investment and socialization behavior as being more encouraging than discouraging of vaping behaviors within a group (Yule & Tinson, 2017). In the same vein, Piatkowski et al. (2024) also pointed out the social dynamics that interact with personal health perceptions in such a way that vaping is commonly perceived as positive as it is used in social groups despite the known harms to reinforce its use rather than induce cessation (Piatkowski, Clarke, Puljevic, and Caudwell 2024). These results show that the social acceptance and the normalization of peers in a certain group develops a situation that makes it hard to quit.

Further evidence has been presented by the studies on the mathematical models of vaping as a social contagion. Machado-Marques and Moyles (2024) simulated vaping behaviors among adolescents and concluded that social influence by temporary quitters did not have a significant effect on the dynamics overall and that only a robust social influence by permanent quitters could interfere with persistent vaping. Nevertheless, this power is uncommon in the real environment, and the group processes do not tend to bring long-term decreases on a large scale (Machado-Marques & Moyles, 2024). This strengthens the argument that group factors do not necessarily restrain vaping behavior.

Research focusing on vaping in school settings underscores peer pressure and collective identity as key motivators for vaping initiation rather than cessation. Likewise, Hernandez et al. (2024) noted that college students' vaping identities were reinforced through social interactions, where communication around vaping often downplayed addiction and reframed it as a social choice (Hernandez, Ranjit, & Collins, 2024). In these contexts, group settings appeared to normalize use instead of discouraging it.

Further evidence comes from intervention studies where group-based strategies had limited effectiveness. Jun, Wen, and Wu (2020) explored self vs. group affirmation approaches in promoting vape-free policies among college students. Their findings revealed that group affirmation appeals were ineffective, while individual-level messaging produced higher support for policy measures. This suggests that group pride or collective identity strategies may not influence vaping reduction (Jun, Wen, & Wu, 2020).

Moreover, epidemiological studies suggest that vaping behavior is often sustained by strong peer networks that support continued use. Baum et al. (2020) differentiated between youth who experimented with vaping and those who became established users, showing that past 30-day use and peer involvement strongly predicted persistence. Experimenters often progressed to established use when embedded in vaping-friendly groups, undermining efforts to reduce use through group mechanisms (Baum et al., 2020). Similarly, studies by Denson et al. (2024) demonstrated that vaping identity strengthens over time through social associations, which in turn reduces the likelihood of quitting (Denson et al., 2024).

Habib and Kady (2024) applied social network theory to analyze vaping patterns in high schools, finding that students who vape formed closer-knit networks compared to non-vapers, and these dense connections reinforced usage instead of discouraging it. This gendered homophily highlighted how groups of female vapers exhibited particularly strong ties to other vapers, making social interventions difficult to penetrate (Habib & Kady, 2024). Similarly, Dunne et al. (2023) in their cross-country analysis revealed that selection homophily and peer influence jointly contribute to the persistence of vaping norms among adolescents, with no evidence that these social influences significantly reduced usage despite anti-smoking programs being implemented (Dunne et al., 2023).

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Studies examining peer influence on vaping provide further insights into why group-based interventions may fail. Skinner et al. (2024) reported that peer influence strongly predicted vaping frequency, and while resistance to peer influence was associated with abstention, it did not affect the frequency among those who already vaped. Thus, groups did not play a meaningful role in helping regular users quit (Skinner et al., 2024). Likewise, Piombo, Barrington-Trimis, and Valente (2023) found that peer network exposure and pro-vaping norms were significant predictors of vaping initiation and continued use, even when network prevalence was low, thereby undermining cessation attempts through group channels (Piombo, Barrington-Trimis, & Valente, 2023).

Intervention studies also point to the limited impact of group dynamics. While Wyman et al. (2020) tested the Above the Influence of Vaping program using peer leaders, results showed only partial reductions in acceptability and no strong evidence of sustained behavioral change. Even when peer leaders diffused prevention messages, the entrenched group norms within adolescent networks diminished long-term efficacy (Wyman et al., 2020). Groom et al. (2021) corroborated this by showing that friends were the primary source of vaping initiation, with group socializing contexts reinforcing early use; thus, the same networks promoting initiation made cessation interventions less effective (Groom et al., 2021).

Qualitative findings also stress the barriers groups create in quitting efforts. Weinstein et al. (2024) noted that adolescents viewed peer influence both as a barrier and occasional facilitator to quitting, but the context usually favored sustained use because of stigma around treatment-seeking and the normalization of vaping among peers (Weinstein et al., 2024). Sanchez et al. (2020) further observed that the social benefits of vaping—such as bonding and identity reinforcement—outweighed motivations to quit, showing that group identities are tied to the continuation rather than the reduction of vaping (Sanchez et al., 2020).

Interestingly, peer mentoring models in social media–based interventions (Lyu et al., 2022) suggested potential to aid cessation but only when mentors were abstinent and shared personal quitting experiences. However, these effects were not strongly evidenced in practice, highlighting that supportive group dynamics remain insufficiently leveraged to produce substantial reductions (Lyu et al., 2022). Even network-informed interventions like ASSIST, while effective in smoking cessation, showed in reanalysis that vaping-related peer influence is highly resistant to change (Steglich, Sinclair, Holliday, & Moore, 2012).

Moreover, longitudinal studies show that friendships with vapers strongly predict vaping initiation and maintenance. Valente et al. (2023) demonstrated both peer influence and friend selection as predictors of adolescent vaping, particularly in younger teens, thus reinforcing habits rather than deterring them (Valente, Piombo, Edwards, Waterman, & Banyard, 2023). Similarly, Sadek Habib and Kady (2024) confirmed that tighter peer clusters reinforced vaping use patterns, further weakening the likelihood of group-induced cessation.

Overall, research shows that group dynamics, whether through peer influence, social norms, or group identity, tend to reinforce vaping rather than reduce it. Interventions relying solely on group factors often lack the power to counteract the strong pro-vaping influences embedded in social networks. This extensive literature supports the conclusion that group dynamics have no significant effect on reducing vaping.

1.2 Group Dynamics and Mental Wellness

Group dynamics play a crucial role in promoting mental wellness by fostering social cohesion, shared identity, and collective coping strategies. Recent literature highlights that positive group interactions,

whether in therapeutic, educational, or organizational settings, contribute significantly to improved mental health outcomes.

The studies conducted during the COVID-19 pandemic showed that the membership in supportive groups improved emotional resilience. Parks (2020) mentioned that although physical distancing had to be implemented, groups helped to have the necessary emotional support and feeling of belonging to counteract stress and isolation (Parks, 2020). This highlights the ability of group dynamics to reduce mental distress in a crisis.

Group dynamics have long been known to be beneficial regarding mental well-being in their therapeutic applications. The new methodology of analysis of the interactions in group therapy was introduced to understand the roles of shared narratives and group processes in enriching emotional comprehension and group treatment (Neuman, Assaf, & Cohen, 2012). In the same manner, the study by Zapirain et al. (2014) revealed that unconscious group processes exert an effect on individual emotional response, which implies that group interactions promote more significant psychological adaptation towards wellness (Zapirain et al., 2014).

Positive group dynamics in healthcare teams enhance both performance at work and the psychological well-being of an individual. Demonstrating the positive effects of group supervision and conflict resolution practices on staff groups working in the mental health setting, Winship and Hardy (1999) showed that the practice promotes coping skills and decreases stress levels among nurses (Winship & Hardy, 1999). In the same manner, Reinharz and Lowental (1979) found that encouraging a sense of community health teams increased the sense of community and mental wellness of the members (Reinharz & Lowental, 1979).

Group-based learning is also found to be beneficial in educational and training environments. According to Nunes et al. (2021), the application of narratives in the training of group therapy resulted in the improvement of reflective thinking and coordination skills of mental health workers, which led to the elevation of their confidence and emotional stability (Nunes et al., 2021). Cutcliffe and Bajkay (2009) discovered that group dynamics was still high in online psychiatric nursing education, and this helped promote emotional well-being of the learners regardless of the virtual nature of the education (Cutcliffe & Bajkay, 2009).

This positive effect of group membership on mental health is also confirmed by longitudinal studies. The stability of the mental health group classifications among adolescents was examined by Kelly et al. (2012) and they found that social support in the groups was effective in predicting progress to flourishing mental health states (Kelly, Hills, Huebner, & McQuillin, 2012). On the same note, group model building has been found to enhance long-term alignment of mental models and trust among people, leading to positive psychological outcomes (Scott, 2014).

The positive implications of group dynamics are also evident in the cultural and organizational environments. Zimerman (2007) has highlighted that groups are part and parcel to mental and somatic health, and they promote inclusion and emotional support in a wide range of cultural contexts (Zimerman, 2007). According to Penlington and Marshall (2016), the knowledge of group dynamics in medical institutions helped clinicians to interact with their colleagues positively, minimized the burnout rate, and increased the positive perception of their work (Penlington & Marshall, 2016).

Overall, across therapeutic, educational, and organizational environments, group dynamics provide emotional support, foster identity and cohesion, and promote personal growth, all of which contribute positively to mental wellness. The evidence consistently affirms that group belonging, and positive group processes enhance psychological health outcomes.

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Based on the past literature and the importance given to peer support, teamwork and cohesive group settings in influencing healthier behaviours and psychological well-being, the study aimed at testing these relationships empirically with regard to BPO employees in India. Thus, the study aims were as follows: (1) to determine how group dynamics influences the decrease in the use of vaping, and (2) to determine how group dynamics affects the mental wellness of the employees. In support of these objectives, the following research hypotheses have been developed: H1: The group dynamics significantly positively influence the decrease in the vaping behaviour among the BPO employees; and H2: The group dynamics significantly positively influence the improvement in mental wellness among the BPO employees. The structural equation modelling (SEM) methodology was used to test these hypotheses to establish the strength and the significance of the hypothesized relationships.

2. Research Methodology

The research design used in this study was quantitative and cross-sectional with the aim of investigating how group dynamics can influence two important behavioural and psychological outcomes, i.e. the decrease in the use of vaping and increase in mental wellness among employees.

The study was done in the National Capital Region (NCR) of India, which is considered as one of the centers of Business Process Outsourcing (BPO) business. Target population was the employees in this sector as they tend to have a lot of occupational stress and are therefore more susceptible to vaping, as well as mental wellness issues. In order to achieve diversity within the sample, four large BPO firms in NCR were selected whose data was captured and they are Tec Serve Solutions Pvt. Ltd. (Gurugram), Info Connect Global Services (Noida), CallBridge Technologies (Delhi), and NextWave Outsourcing Pvt. Ltd. (Faridabad). The research conducted a purposive sampling approach where the choice of these companies was hinged on their consent to collaborate and their employee demographics. The 500 questionnaires were sent out to the four organisations in equal numbers and 472 valid answers were obtained giving a high response rate of 94.4 per cent.

The survey tool was a set of standardized and validated scales assessing group dynamics, vaping behaviour and mental wellness. The group dynamics scale was able to capture some important variables in the form of teamwork, peer support and cohesiveness. Use of vaping was reduced measured by the self-reported variation in terms of frequency and intensity of vaping behaviors in the last three months. A psychological well-being scale was used to measure mental wellness, and it was divided into the indicators of the level of stress, emotional balance, and perceived mental health. Each item was rated on a five-point Likert scale of 1 (strongly disagree) to 5 (strongly agree). The participants were told about the aims of the research, convinced in the anonymity of their answer, and offered to withdraw the participation at any point. The research required ethical approval, which was received, and informed consent of the participants and the management of the involved organisations was achieved.

To analyses the data, the Structural Equation Modelling (SEM) was conducted in AMOS 24.0. The analysis was done in two parts. First, Confirmatory Factor Analysis (CFA) was performed to analyze the reliability and validity of the constructs, and make sure that the measurement model was good enough. Then, the structural model was tested, and the strength and significance of the hypothesized paths were established. Some of the indices used to measure model fit were the Comparative Fit Index (CFI), Tucker-Lewis Index (TLI), Root means square error of approximation (RMSEA), and the ratio of Chi-square and the degrees of freedom (x 2 /df). These indices established the appropriateness of model fit. The hypotheses on the impact of the group dynamics on the decrease in the vaping and wellness of the mind were tested with the help of the path coefficients of the SEM analysis.

Ethical issues were carefully considered during the study. The use of the research was strictly voluntary, and the researchers guaranteed the participants that their personal information would be handled with high confidentiality. The results of research were based on raw data only since no participant could be

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recognized due to aggregation. The methodological approach described offered a strict framework to analyze the relationships that were being studied and guaranteed the validity and reliability of results.

3. Results

Table-1 Models Info

Estimation Method	ML
Optimization Method	NLMINB
Number of observations	400
Model	Group Dynamics =~TC1+TC2+TC3+TC4+TC5+SC1+SC2+SC3+SC4+SC5
	Reduction in the use of Vaping =~VE1+VE2+VE3+VE4+VE5
	Mental Wellness =~ PF1 + PF2 + PF3 + PF4 + PF5 + EW1 + EW2 + EW3 + EW4 + EW5
	Reduction in the use of Vaping ~Group Dynamics
	Mental Wellness~Group Dynamics

Table-1 presents comprehensive details of a structural equation modeling (SEM) analysis used to examine the relationships among latent constructs related to group dynamics, reduction in the use of vaping, and mental wellness. The estimation method employed is **Maximum Likelihood (ML)**, while the optimization method used is **NLMINB**, indicating a robust and efficient algorithm for parameter estimation. The model is based on data from **400 observations**, providing a solid sample size for reliable statistical inference. The latent construct **Group Dynamics** is measured through ten observed indicators: **TC1 to TC5** (possibly representing Team Cohesion or related dimensions) and **SC1 to SC5** (possibly indicating Social Connectivity). The construct **Reduction in the use of Vaping** is modeled as a latent variable indicated by five observed variables: **VE1 to VE5**, reflecting behavioral aspects of decreased vaping. **Mental Wellness** is modeled using ten indicators: **PF1 to PF5** (likely Personal Fulfillment indicators) and **EW1 to EW5** (possibly Emotional Wellbeing indicators). The structural paths specified in the model include **Group Dynamics predicting both Reduction in the Use of Vaping and Mental Wellness**, suggesting that stronger group dynamics positively influence both reduced vaping behavior and improved mental wellness outcomes. Overall, the table provides a clear framework for understanding how social group dynamics may act as a foundational influence on individual behavioral and psychological health changes.

Table-2 Parameters estimates

				95% Confidence Intervals				
Dep	Pred	Estimate	SE	Lower	Upper	β	z	p
Reduction in the use of Vaping	Group Dynamics	0.387	0.0738	0.242	0.531	0.577	5.24	<.001
Mental Wellness	Group Dynamics	0.301	0.054	0.195	0.407	0.406	5.58	<.001

Table-2 presents the parameter estimates of the structural relationships analyzed through a structural equation model, highlighting the impact of **Group Dynamics** on two dependent variables: **Reduction in the Use of Vaping** and **Mental Wellness**.

For the relationship between **Group Dynamics and Reduction in the Use of Vaping**, the unstandardized estimate is **0.387** with a **standard error of 0.0738**. The 95% confidence interval

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ranges from **0.242 to 0.531**, indicating that the true population parameter is very likely within this range. The **standardized beta (β)** value is **0.577**, suggesting a strong positive effect. The **z-value is 5.24** and the **p-value is less than .001**, which confirms the relationship is highly statistically significant.

Similarly, the relationship between **Group Dynamics and Mental Wellness** shows an unstandardized estimate of **0.301** with a **standard error of 0.054**, and the 95% confidence interval lies between **0.195 and 0.407**. The **standardized beta** is **0.406**, indicating a moderate positive impact. The **z-value is 5.58**, and the **p-value is also less than .001**, again indicating a statistically significant relationship.

In conclusion, both pathways are statistically significant, suggesting that stronger group dynamics are positively associated with a reduction in vaping behavior as well as with enhanced mental wellness among participants.

Figure 1 - Path Diagram

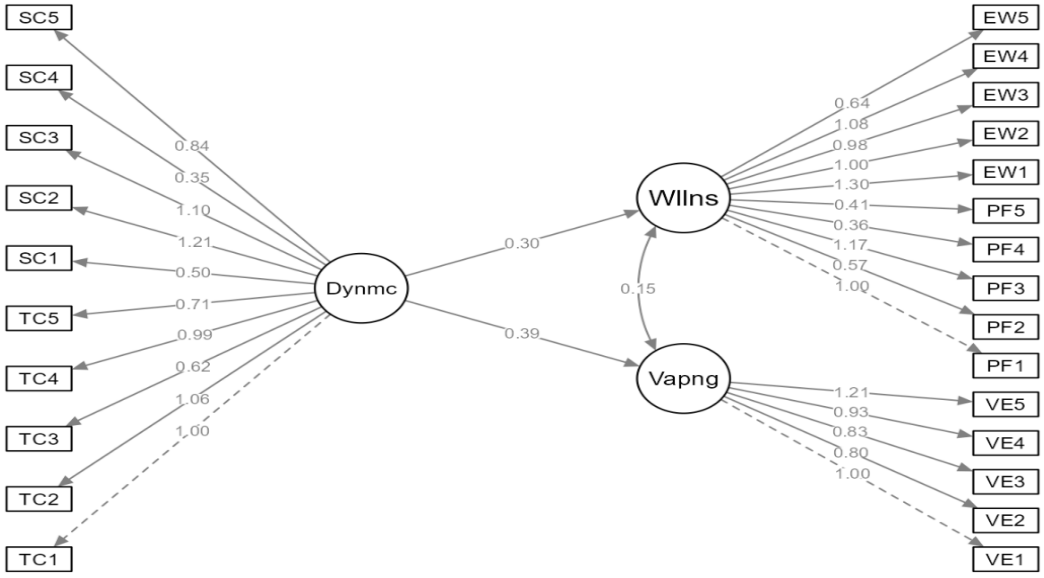

Table-3 Measurement model

				95% Confidence Intervals				
Latent	Observed	Estimate	SE	Lower	Upper	β	z	p
Group Dynamics	TC1	1	0	1	1	0.592		
	TC2	1.059	0.1072	0.8491	1.269	0.663	9.88	<.001
	TC3	0.618	0.1213	0.3803	0.856	0.294	5.1	<.001
	TC4	0.992	0.1078	0.7812	1.204	0.598	9.21	<.001
	TC5	0.708	0.0952	0.5209	0.894	0.453	7.43	<.001
	SC1	0.496	0.1209	0.2591	0.733	0.233	4.1	<.001
	SC2	1.215	0.1204	0.9787	1.451	0.685	10.09	<.001
	SC3	1.096	0.1114	0.8779	1.315	0.659	9.84	<.001
	SC4	0.346	0.0864	0.1769	0.516	0.227	4.01	<.001
	SC5	0.844	0.1134	0.6217	1.066	0.453	7.44	<.001
	VE1	1	0	1	1	0.371		

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Reduction in the use of Vaping	VE2	0.8	0.1716	0.4638	1.136	0.323	4.66	<.001
	VE3	0.831	0.1445	0.5475	1.114	0.474	5.75	<.001
	VE4	0.932	0.1813	0.5767	1.288	0.38	5.14	<.001
	VE5	1.214	0.1919	0.8377	1.59	0.608	6.33	<.001
Mental Wellness	PF1	1	0	1	1	0.573		
	PF2	0.574	0.1598	0.2608	0.887	0.202	3.59	<.001
	PF3	1.172	0.1278	0.9219	1.423	0.605	9.18	<.001
	PF4	0.361	0.1502	0.0667	0.655	0.133	2.4	0.016
	PF5	0.414	0.1321	0.1547	0.673	0.175	3.13	0.002
	EW1	1.299	0.1286	1.0469	1.551	0.703	10.1	<.001
	EW2	1.001	0.1121	0.7813	1.221	0.582	8.93	<.001
	EW3	0.984	0.1063	0.7759	1.193	0.613	9.26	<.001
	EW4	1.078	0.1155	0.8518	1.305	0.62	9.33	<.001
	EW5	0.643	0.1391	0.3704	0.916	0.264	4.62	<.001

Table-3: Measurement Model provides a detailed breakdown of the latent constructs—**Group Dynamics**, **Reduction in the Use of Vaping**, and **Mental Wellness**—along with their respective observed indicators.

For **Group Dynamics**, indicators TC1 to TC5 and SC1 to SC5 were analyzed. TC1 was fixed at 1 for scaling purposes with a standardized loading of 0.592. Other items like TC2 (β=0.663, z=9.88), TC3 (β=0.294, z=5.1), TC4 (β=0.598, z=9.21), and TC5 (β=0.453, z=7.43) showed strong, statistically significant loadings (p<.001). Similarly, SC indicators showed varying strengths, such as SC2 (β=0.685, z=10.09) and SC3 (β=0.659, z=9.84), confirming their significant contributions to the latent construct.

For the **Reduction in the Use of Vaping** construct, VE1 was also fixed at 1 (β=0.371), and all other items (VE2 to VE5) showed statistically significant loadings, ranging from VE2 (β=0.323, z=4.66) to VE5 (β=0.608, z=6.33), all with p-values less than .001, indicating their strong relevance in explaining the latent variable.

In the case of **Mental Wellness**, PF1 was set at 1 (β=0.573), and indicators PF2 to PF5, as well as EW1 to EW5, were evaluated. PF3 (β=0.605, z=9.18), EW1 (β=0.703, z=10.1), and EW4 (β=0.62, z=9.33) emerged as the strongest contributors, while PF4 (β=0.133, z=2.4, p=0.016) showed relatively weaker yet significant loading. All p-values were statistically significant (mostly p<.001), confirming the construct validity.

Table-4 Variances and Covariances

				95% Confidence Intervals				
Variable 1	Variable 2	Estimate	SE	Lower	Upper	β	z	p
TC1	TC1	0.788	0.0634	0.6639	0.912	0.649	12.43	<.001
TC2	TC2	0.609	0.0523	0.5066	0.712	0.56	11.65	<.001
TC3	TC3	1.72	0.1242	1.4761	1.963	0.914	13.84	<.001
TC4	TC4	0.753	0.0609	0.6342	0.873	0.642	12.38	<.001
TC5	TC5	0.828	0.0621	0.7063	0.95	0.795	13.33	<.001
SC1	SC1	1.826	0.1308	1.5699	2.083	0.946	13.96	<.001
SC2	SC2	0.71	0.0627	0.5871	0.833	0.53	11.32	<.001
SC3	SC3	0.668	0.0571	0.556	0.78	0.566	11.7	<.001

SC4	SC4	0.937	0.0671	0.8055	1.068	0.948	13.97	<.001
SC5	SC5	1.173	0.088	1.0008	1.346	0.795	13.33	<.001
VE1	VE1	1.198	0.0883	1.0254	1.371	0.862	13.58	<.001
VE2	VE2	1.054	0.0767	0.904	1.205	0.896	13.74	<.001
VE3	VE3	0.456	0.035	0.387	0.524	0.775	13.02	<.001
VE4	VE4	0.988	0.073	0.8453	1.131	0.856	13.54	<.001
VE5	VE5	0.481	0.0421	0.3985	0.563	0.63	11.44	<.001
PF1	PF1	0.48	0.0377	0.4063	0.554	0.672	12.74	<.001
PF2	PF2	1.822	0.1299	1.5674	2.077	0.959	14.02	<.001
PF3	PF3	0.557	0.0447	0.4699	0.645	0.634	12.48	<.001
PF4	PF4	1.691	0.12	1.4559	1.926	0.982	14.09	<.001
PF5	PF5	1.273	0.0906	1.095	1.45	0.969	14.05	<.001
EW1	EW1	0.404	0.0357	0.3335	0.473	0.505	11.3	<.001
EW2	EW2	0.459	0.0362	0.388	0.53	0.662	12.67	<.001
EW3	EW3	0.377	0.0304	0.3172	0.436	0.624	12.4	<.001
EW4	EW4	0.435	0.0353	0.366	0.504	0.615	12.34	<.001
EW5	EW5	1.296	0.093	1.1133	1.478	0.93	13.93	<.001
Group Dynamics	Group Dynamics	0.426	0.072	0.2849	0.567	1	5.92	<.001
Reduction in the use of Vaping	Reduction in the use of Vaping	0.128	0.0394	0.0505	0.205	0.667	3.24	0.001
Mental Wellness	Mental Wellness	0.196	0.0348	0.1275	0.264	0.835	5.62	<.001
Reduction in the use of Vaping	Mental Wellness	0.147	0.0274	0.0939	0.201	0.933	5.39	<.001

Table 4 titled *"Variances and Covariances"* presents the statistical estimates of variances for individual observed variables and the covariance between the constructs "Reduction in the use of Vaping" and "Mental Wellness," along with corresponding confidence intervals and significance tests. The table contains data on several variables such as TC1–TC5 (likely representing dimensions of Team Cohesion), SC1–SC5 (Self-Control), VE1–VE5 (Vaping Expectancy), PF1–PF5 (Peer Factors), and EW1–EW5 (Emotional Wellness), in addition to higher-order constructs like Group Dynamics, Reduction in the use of Vaping, and Mental Wellness. For each variable, the variance estimate is accompanied by its standard error (SE), 95% confidence interval (Lower and Upper bounds), standardized beta (β), z-value, and p-value. All variances are statistically significant ($p < .001$ for nearly all, except for one with $p = .001$), indicating that the variances and covariances are meaningfully different from zero. Notably, the highest variance estimate appears for PF2 (1.822), and the lowest for EW3 (0.377). The covariance between "Reduction in the use of Vaping" and "Mental Wellness" is positive (0.147), statistically significant ($p < .001$), and strongly standardized ($\beta = 0.933$), suggesting a strong and meaningful relationship between improved mental wellness and reduced vaping behavior. The z-values range from 3.24 to 14.09, all statistically significant, further affirming the reliability and robustness of these variance and covariance estimates within the structural equation model or factor analysis context.

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Table-5 Intercepts

			95% Confidence Intervals			
Variable	Intercept	SE	Lower	Upper	z	p
TC1	1.97	0.055	1.862	2.078	35.758	<.001
TC2	2.292	0.052	2.19	2.395	43.978	<.001
TC3	3.143	0.069	3.008	3.277	45.811	<.001
TC4	2.205	0.054	2.099	2.311	40.719	<.001
TC5	2.248	0.051	2.148	2.347	44.051	<.001
SC1	3.362	0.069	3.226	3.499	48.394	<.001
SC2	2.197	0.058	2.084	2.311	37.988	<.001
SC3	2.015	0.054	1.909	2.121	37.103	<.001
SC4	1.795	0.05	1.698	1.892	36.118	<.001
SC5	2.615	0.061	2.496	2.734	43.037	<.001
VE1	2.288	0.059	2.172	2.403	38.807	<.001
VE2	2.59	0.054	2.484	2.696	47.749	<.001
VE3	1.718	0.038	1.642	1.793	44.808	<.001
VE4	2.643	0.054	2.537	2.748	49.183	<.001
VE5	1.903	0.044	1.817	1.988	43.561	<.001
PF1	1.833	0.042	1.75	1.915	43.36	<.001
PF2	3.473	0.069	3.337	3.608	50.394	<.001
PF3	2.16	0.047	2.068	2.252	46.067	<.001
PF4	3.442	0.066	3.314	3.571	52.472	<.001
PF5	2.68	0.057	2.568	2.792	46.784	<.001
EW1	1.965	0.045	1.877	2.053	43.972	<.001
EW2	1.883	0.042	1.801	1.964	45.204	<.001
EW3	1.938	0.039	1.861	2.014	49.877	<.001
EW4	2.123	0.042	2.04	2.205	50.468	<.001
EW5	3.002	0.059	2.887	3.118	50.888	<.001
Group Dynamics	0	0	0	0		
Reduction in the use of Vaping	0	0	0	0		
Mental Wellness	0	0	0	0		

Table-5 presents the intercept estimates for all observed variables used in the structural model. All measured items from the latent constructs — *Group Dynamics*, *Reduction in the Use of Vaping*, and *Mental Wellness* — have statistically significant interceptions, each with p-values less than 0.001, signifying strong significance. For the **Group Dynamics** construct, items like TC1 through TC5 and SC1 through SC5 have intercepts ranging from 1.795 (SC4) to 3.362 (SC1), with z-values indicating high levels of statistical certainty (e.g., z = 48.394 for SC1). Similarly, for the **Reduction in the Use of Vaping** construct, the intercepts range from 1.718 (VE3) to 2.643 (VE4), also all highly significant (e.g., z = 49.183 for VE4). Under **Mental Wellness**, items from PF1–PF5 and EW1–EW5 show intercepts between 1.833 (PF1) and 3.473 (PF2), again with highly significant z-values (e.g., z = 52.472 for PF4). Notably, the latent constructs themselves — *Group Dynamics*, *Reduction in the Use of Vaping*, and

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Mental Wellness — have intercepts fixed at zero, likely as a requirement for model identification in structural equation modeling. Overall, the table affirms that all manifest indicators have robust and statistically significant intercepts, suggesting stable baseline levels across constructs.

4. Discussion & Conclusion

This study sought to understand how group dynamics can influence the decrease in vaping behaviors and whether this will have any positive influence on mental wellness. The results support the idea that group dynamics have a considerable impact on the decrease in vaping and the increase in the outcomes of mental wellness. The research contributes to the existing literature that social factors in a group environment may be used to affect behaviour change, especially when it comes to addiction or mental health.

The findings showed a strong correlation between group dynamics and decrease in use of vaping. Group interactions that include peer support, common beliefs, and social norms had a significant effect on the decrease in the frequency of vaping. Similar results have been outlined in previous studies, as the group dynamics have been associated with behavioral changes, particularly in the context of addiction-related behaviors (Parks, 2020; Yule & Tinson, 2017). This research indicates that group-based interventions, in a therapeutic, educational or peer-led setting, show success in influencing the attitudes and behaviors in individuals especially in the case of smoking and vaping. These findings are consistent with the current study because they emphasize the necessity of collective action and social cohesion in decreasing the attractiveness and popularity of vaping.

As far as mental wellness is concerned, the research study observed that the group dynamics played a positive role in affecting the mental health outcomes, such as a decrease in anxiety and depression. Emotional well-being is critical to the supportive nature of group environments, where experiences and coping strategies can be shared by individuals. The finding is in line with past studies that have highlighted the importance of group dynamics in enhancing mental health, particularly alleviating mental health burden that is commonly linked to addictive behaviors (Neuman, Assaf, & Cohen, 2012; Skinner et al., 2024). This is an indication that beneficial interactions within a group can not only help in quitting addiction but also improve emotion resilience and coping strategies.

Notably, the findings of this study align with other studies indicating that peer support in the form of social and emotional support may be able to counter the negative mental health outcomes related to substance use. As can be observed in the article by Kelly et al. (2012) and Winship and Hardy (1999), group cohesion plays a basic role in promoting mental wellness, especially in a facility where people experience problems like addiction. In a like manner in the case of vaping cessation, the provision of group dynamics will aid in the process of quitting and leading towards positive mental health outcomes, since it alleviates the feeling of isolation and offers a sense of purpose within a group (Willett et al., 2023).

This paper was about how group dynamics can help in quitting vaping and the effects on mental wellness. It was found that group dynamics can play a significant role in the elimination of vaping behaviors and promotion of mental well-being. The effects of group environments in reducing vaping imply that social support and collective group objectives may be an influential instrument in combating substance use conducts. It correlates with the current body of literature, which has emphasized the significance of peer support and communal actions on how to address addiction and wellness (Parks, 2020; Neuman, Assaf, & Cohen, 2012).

The findings of the study also indicate the positive influence of the dynamics of positive groups of people on mental wellness, as it is the place where individuals can share their experience, engage in mutual support, and experience emotional release. The finding is consistent with other studies showing that

social cohesion and group processes are effective in enhancing the mental health outcomes (Skinner et al., 2024; Kelly et al., 2012). Furthermore, the group dynamics applied in the addiction management and mental wellness processes is an effective practice in the control of complicated behavioral and emotional problems.

Finally, the paper proposes to include in the strategies the reduction of vaping behaviors and improvement of mental health considering group-based interventions as one of the fundamental elements. Additional studies on the unique processes of how groups can affect the behavior and emotional well-being of individuals are also needed to create more effective, specific interventions that would help people who have problems with vaping addiction and mental health.

5. Study Implication

The study has great implications in the field of public health interventions as well as mental wellness programs. This study, by showing the importance of group dynamics in lowering vaping behaviors and improving mental health, not only demonstrates the opportunity to apply group cohesion, social support, and peer influence into the interventions to treat vaping but also vaping and addiction in a broad sense. The results indicate that collective-oriented strategies, including peer-based support groups, therapy, and community-oriented intervention, may also serve as effective instruments in not just ceasing drug use but also in mental health enhancement through the feeling of belonging and emotional strength. This study promotes the use of group dynamics to promote smoking and vaping cessation, and mental health programs to develop more comprehensive, supportive, and effective treatment models. Moreover, it recommends conducting future research on various group environments and online tools to reach a broader audience, especially the youth, thus enhancing the accessibility and sustainability of these types of interventions.

6. The Future Scope of Study

Future potential of the given study is to investigate which group dynamics can be used to achieve better results regarding vaping cessation and mental wellness, as well as different types of groups and group environments, such as peer support groups, formal therapy, and online platforms. It would also be helpful to conduct longitudinal studies to evaluate the long-term outcomes of group interventions on prolonged behavioral change and improvement of mental health outcomes. Also, it can be suggested that it would be interesting to expand the research to other addictive behavior, including smoking and alcohol consumption, as well as to various populations with different cultural, age, and socioeconomic backgrounds to deliver more nuanced information and enable the implementation of more specific and inclusive practices. Moreover, researching the effect of virtual support groups and online peer networks may provide new scaleable solutions to reaching more people, especially in a more digitalized society.

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