
Emotional Balance and Psychological Irritability among Heavy Cigarette Male Smokers with/without Mental Disorders: Comparison Study

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Abstract

Background: Cigarette smoking is too prevalent and one of the prominent reasons for mortality and morbidity worldwide although negative health consequences on the general population. Mentally ill patients smoke at higher rates than the general population believing that reducing stress, enhances emotional balance, and decreases irritability. **Aim of Study:** To compare between emotional balance and psychological irritability among heavy cigarette smokers with/without mental disorders. **Design:** Descriptive correlational comparative design was used. **Sample:** A purposive sample of 300 males who meet the criteria of heavy smokers were divided into two groups; 150 patients in “group A” diagnosed with mental disorders and 150 in group B mental health employees. **Setting:** Group A was recruited from “the Psychiatric and Mental Health Hospital” in Meet-khalf at Menoufia, while group B employees were recruited from Menoufia University hospital who were adopted to reflect the correlation between emotional balance and psychological irritability in the presence of mental illness. **Tools:** Socio-Demographic Data Sheet, emotional balance, and psychological irritability scales. **Results:** There were significant differences in emotional balance; regarding the dimensions of emotional confrontation and flexibility; and psychological irritability between groups A and B ($P \leq 0.000$, 0.001 and 0.081) respectively. **Conclusion:** There were significant positive correlations between psychological irritability and emotional balance in group A of mental illness, and also a highly significant difference in psychological irritability between the A and B groups ($P \leq 0.001$). **Recommendation:** Health education programs should be designed for the prevention and management of emotional imbalance and psychological irritability among heavy smokers with mental disorders.

Keywords: *Emotional Balance, Psychological Irritability, Heavy Smokers & Mental Disorders.*

Introduction:

Egypt is a developing country with a rising prevalence of smoking in its population (**Centre for Disease Control, 2015**). Nevertheless, rates of cigarette smoking and other tobacco use are extremely high, and the health consequences of tobacco affect some populations disproportionately. Heavy smokers consume at least 25 cigarettes per day. Persons with mental illnesses, in particular, smoke at higher rates than the general population (**Gaku et al., 2014**). Furthermore, individuals living below the poverty line and those with low educational attainment are more likely to smoke than those in the general population. Such as the use of tobacco is unhealthy behavioural and coping strategy leading to mortality in Egypt (**Fouda et al., 2018**).

Psychological irritability is a condition that characterised by feelings of frustration or anger, as well as being impatient and easily irritated, particularly over minor issues. Irritability causes people to become enraged at the slightest provocation. They have a quick temper and may snap at others as a result of depression, anxiety, bipolar disorder, sleeping problems, stress, or post-traumatic

stress disorder (**Vidal-Ribas, 2016**). As well as emotional balance also indicated to emotional self-control which is the ability to remain calm and clear-headed during a stressful situation or crisis. This not only allows leaders to manage their emotions, but also spreads their calm to those they lead (**Cullen et al., 2017**).

Consequently, a strong association between tobacco consumption and psychological irritability and emotional balance was found, there was no clear evidence that high tobacco consumption was causally related to psychological distress and irritability or emotional imbalance (**Lise et al., 2017**). Although the smoking among mentally ill populations aggravate psychological irritability and anxiety even depression but such populations tend to smoking behaviour and more tobacco dependent which is associated with neuroadaptations in nicotinic pathways with occurrence of various psychological irritability as depressed mood, agitation and anxiety immediately after a cigarette is smoked, particularly among mental ill population, which is marked by fluctuations in a psychological state that might worsen mental capabilities (**Diogo & Lara, 2012**)

In addition, heavy smokers with mental illness are unable to regulate emotions through purposeful reappraisal mechanism system dysfunction and smokers' cigarette craving was linked with emotional stimulation including emotional experience and expression imbalance (Aldao & Nolen-Hoeksema, 2012). The previous researches have found a strong link between nicotine dependence and psychiatric disorders (Asharani et al., 2020). Furthermore, when compared to the general population, patients with psychiatric illnesses had a 2 to 3.2 times greater risk of smoking and a 25% lower chance of stopping (Smith et al., 2014). People with bipolar disorder, major depressive disorder and schizophrenia are more likely to smoke (Li et al., 2017 & Wootton et al., 2019).

Smokers are forced to smoke due to poor coping approaches, using smoking as self-medication to deal with mental illness symptoms, or as a social reinforcement wherever smoking is a community culture/activity in people with mental health/rehabilitation services, and nicotine dependence severity symptoms of withdrawal (Asharani et al., 2020). Nicotine regulates neurotransmission through neurotrophins such as brain-derived neurotrophic factor (BDNF) involved in the reward circuitry. The dysregulation that contributes to the development of dependence on smoking. Previous studies stated significantly greater levels of BDNF in smokers than in non-smokers and a highly significant association among nicotine dependence and symptoms severity of schizophrenia (Wootton et al., 2019).

Significance of the study:

95% of Egyptian smokers are smoking daily. In 2014, approximately 170,000 tobacco-related deaths occurred (World Health Organization, 2015). Tobacco-related health complications cost the Egyptian government approximately 3.4 billion Egyptian pounds per year (Fouda et al., 2018). According to studies, adults and adolescents may turn to smoking to cope with the stressors or symptoms combined with mental disorders. People aged of 12 and 17 are 2.5 times more likely to say utilizing cigarettes in the previous month if they have had a major depressive episode and psychological irritability. Smoking is used by 70-85% of people with schizophrenia and 50-70% of persons with bipolar disorder. Since 1964, the harmful health consequences of second-hand smoke have killed approximately 2.5 million non-smokers. Smokers with severe mental disorders may pay out about a third of their income on cigarettes. Several studies have been conducted in various countries to assess prevalence of tobacco smoking, risk factors, complications, and prevention efforts.

Moreover, studies dealing with smoking and the main psychological causes especially among mentally ill patients in Egypt are scarce. Heavy smoking among mental ill patients were less clearly explains through the researches and studies. Broad explanations regarding a strong association between heavy smoking and emotional balance and psychological irritability will be in the current study.

In particular, heavy smokers with mental illness in the psychiatric inpatient ward or outpatient clinic are the primary responsibility of nursing professionals who are the unique position to assess the healthy and unhealthy behaviours of patients prior the illness and after illness as well as the psychological coping strategies and emotional balance for catching the predisposing factors for disease and the associated psychiatric symptoms and behavioural problems. Mental health professionals may enhance patients' gains knowledge about the healthy ways of coping rather than smoking or psychological irritability, attain skills to apply the emotional balance on stressful events. The role of psychiatric nurse present on the three level of prevention of those patients with heavy smoking and mental illness.

Aim of the study:

The current study aimed to compare between emotional balance and psychological irritability among heavy cigarette smokers with mental disorders and heavy cigarette smokers without mental disorders

Research question:

- What is the relation between emotional imbalance and psychological irritability among heavy cigarette male smokers with mental disorders?
- What are the results of comparison between emotional imbalance and psychological irritability among heavy cigarette male smokers with mental disorders and heavy cigarette male smokers without mental disorders?
- To what extent are the correlation between the psychological irritability and emotional balance among heavy cigarette male smokers with mental disorders and who without mental disorders?

Subject and Methods:

Study Design:

Descriptive correlational comparative design with quantitative methodology was utilized in the present study to compare emotional balance and psychological irritability among the "group A" who are heavy cigarette male smokers with mental disorders and its correlation with the "group B" without mental illness. The quantitative method guides the study by asking patients about the scale items and filling out the study tools.

Setting:

The current study sample was recruited from two places firstly “the Psychiatric and Mental Health Hospital in Meet-khalf at Menoufia that affiliated to the Ministry of Health and Population, Egypt. It is serving a large group of patents with psychiatric disorders. It involves of five departments’ three departments for male patients, one department for female and one department for addiction. The capacity of each one department is from 15- 25 patients. The psychiatric patient admitted to the ward for at least three weeks for discharge from the hospital. The second place is Menoufia University hospital which is big hospital for all specialities and medical services and follow Menoufia University. This study conducted during the period of 5 months from March 2022 to July 2022.

Sample:

A purposive sampling was utilized in the current study. Sample of 300 males’ heavy smokers divided into two groups as:

Group A: Involved of 150 psychiatric patients were diagnosed with different mental disorders, who granted agreement to participate and accessible at the time of data gathering from the Psychiatric and Mental Health Hospital in Meet-khalf at Menoufia.

Inclusion criteria: Male has psychiatric disorder, age 18 - 60 year’s old and heavy smokers (25 cigarette per day). **Exclusion criteria:** Patients have mental disorders, who have memory illnesses, Alzheimer disease, patients with cognitive disorders and mental retardation.

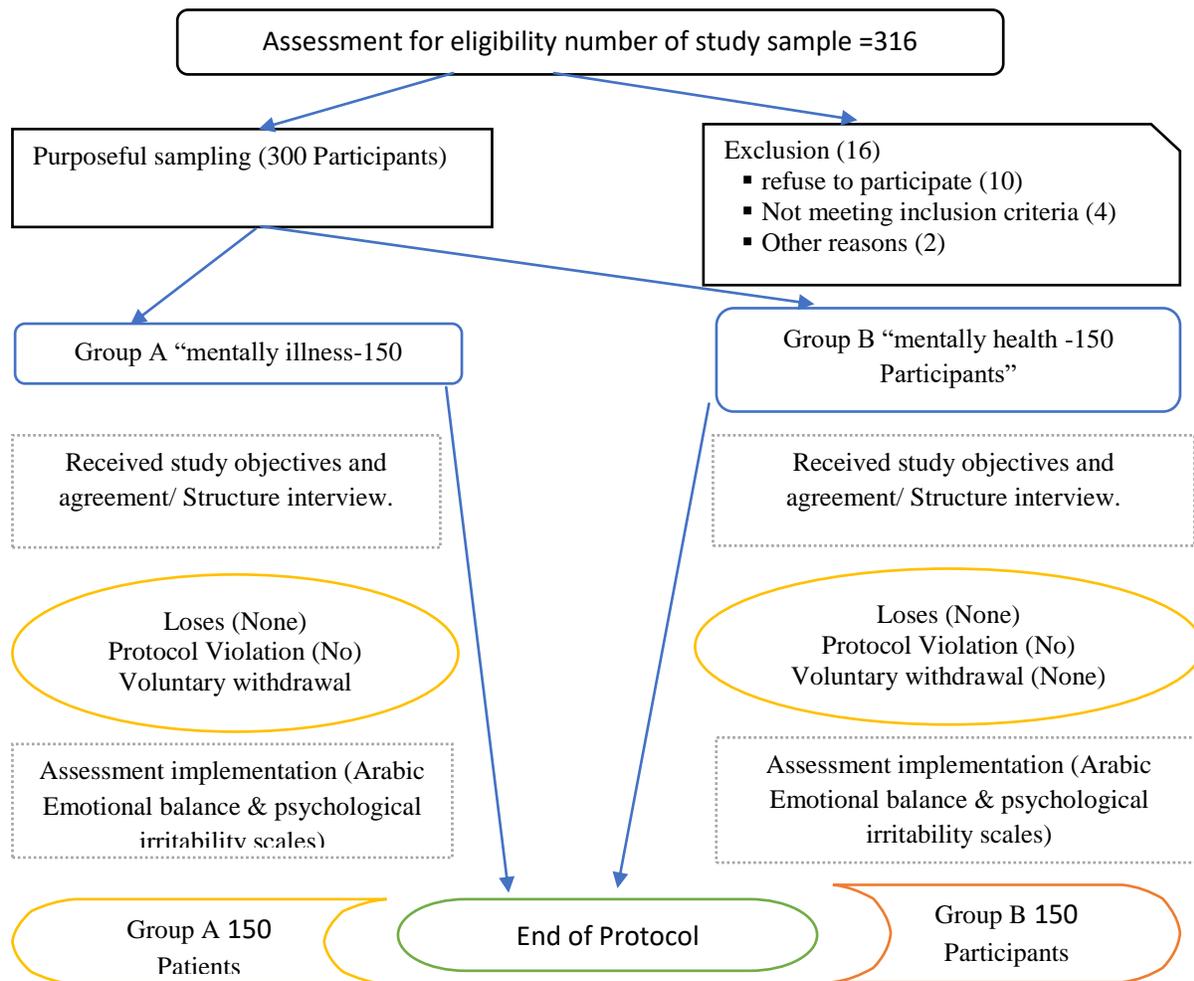


Figure (1): Flow diagram of the study.

Group B: Involved of 150 participants were not diagnosed with any of mental disorders who are employees in Menoufia University hospital and meet the criteria of heavy smokers. The group **B** were recruited in this study to reflect the correlation between heavy cigarette smoking as mentally healthy participant and those who have mental disorders. **Inclusion criteria:** Mentally healthy males, age 18 - 60 year's old and heavy smokers (25 cigarette per day) and agree to participate in this study. **Exclusion criteria:** Persons have any psychiatric disorders. Who have memory disorders, Alzheimer disease, mental retardation and patients with cognitive disorders. The study represented in flow chart (Figure 1). Using G-Power software to determine Sample size and Effect size (Partial Eta Square= 0.458) the suggested sample size was (150 - 200) per group.

Tools for data collection:

Tool I: Socio-demographic data sheet: It was developed by the researchers, and it evaluates the socio-demographic data of all participants (A & B groups). It involves of 6 items, which are marital status, age, educational level, residence, and the clinical data of the patients including the psychiatric diagnosis, chronicity of the disease.

Tool II: Emotional balance scale (Arabic version): It was developed by **Sabawi and Arafat. (2007)**. It was adopted in this study for measuring a multi-dimensions of emotional balance that serves as an indicator of emotional balance, it consists of 20 items which are broken down into three subscales or three dimensions; emotional regulation (5 items; no. 1-5), emotional confrontation (9 items; no. 6-14), emotional flexibility (6 items; no. 15-20) the responses are ranked between 1 (not applied) to 5 (applied). Total score was attained by summing the 20 items, the higher value indicates highly positive emotional balance (score 100), but the lower score indicates highly negative emotional balance (score 20). To ensure the reliability of the scale using Cronbach's Alpha coefficient on the survey sample data, It ranged between (.67-.80) and (.86) for the total score, and these values are considered high and make the tool applicable to the study.

Tool III: Psychological irritability scale (Arabic version): It was developed by **Stephen et al. (2020)**. It was adopted in this study for measuring the three dimensions of psychological irritability: Physiological dimension such as redness of the face, difficulty breathing and headache, and it has 9 items; (no. 1 - 9), The cognitive dimension, which is concerned with forgetfulness, poor concentration, and distraction, and it has 12 items; (no. 10 - 22), The psychological dimension such as anxiety, fear, excessive sensitivity, and sleep disorders, and it has 14 items; (no. 23 - 36). It consists of 35 items and the responses are ranked

between 0 (not applied) to 2 (applied). To correct the scale, the high score was given two marks, the medium score was one, and the low score was given zero mark, noting that all items of the scale are positive, and thus the highest mark on the scale becomes 70 means a high degree of psychological irritability, and the lowest score is zero, which means a low degree of Psychological irritability. To ensure the reliability of the scale using Cronbach's Alpha coefficient on the survey sample data, it measured .85 for the total score.

A pilot study:

A pilot study was carried out to determine the time required to fill out the tools and to verify their applicability and completeness. It was conducted on a sample of 30 patients (15 with psychiatric disorders and 15 healthy people), indicating nearly 10% of the population. Participants in the pilot study were excluded from the main sample of the study because minor changes to the tools were required.

Procedures:

The present study initiated with a thorough review of the literature, followed by the selection and preparation of data collection tools. To become acquainted with the research problem, a review of associated literature including different aspects of the problem was performed, using readily available books, journals, and the internet. This study was conducted out with the approval of the Scientific Research Ethics Committee of the Faculty of Nursing, Menoufia University. The director of the hospital also gave written permission. The study's objectives were clarified to the participants, who were also requested to read the informed consent. All questions and inquiries were discussed and determined prior to data collection. After being properly informed, each participant signed a written consent. For five months, the researchers conducted structured interviews with patients "Group A" on two days per week during the morning shift. The interview lasted approximately 20 - 30 minutes. Participants from 'Group B' were interviewed by the researchers once a week at official working time, questions were asked about the validated tools and the answers were recorded by the researchers.

Ethical Considerations:

The approval of the Scientific Research Ethics Committee (No: 842) of the Faculty of Nursing, Menoufia University was achieved to conduct the present study. The hospital director also provided written consent. The study objectives and procedures were explained to all participants. All participants were informed that their participation was completely voluntary and that the information collected would only be used for the purposes of the study. Each participant signed a written informed consent form

prior to data collection. Throughout the data collection process, precautions were taken to ensure anonymity and confidentiality.

Statistical Analysis:

The data were analysed using the statistical package for social science (SPSS) version 22. The mean and SD were used to express the numerical data. Quantitative data were expressed using frequency and percentage. Pearson correlation was used to investigate the relationships between various numerical variables. In the probability (p-value) range, less than 0.05 was considered significant, and less than 0.001 was considered highly significant.

Results

Table (1): Distribution of the socio-demographic characteristics of the studied sample (NO. = 300)

| Items | Group A Mean± SD or % | | Group B Mean± SD or % | | t-value | Sig. |
|-----------------------|--------------------------|-----|--------------------------|-----|---------|------|
| Age | 31.23 ± 7.32 | | 40.2 ± 4.62 | | 0.067 | NS |
| | % | NO. | % | NO. | | |
| Residence | | | | | | |
| Rural | 42% | 63 | 38% | 57 | 0.462 | NS |
| Urban | 58% | 87 | 62% | 93 | 0.562 | |
| Total | 100% | 150 | 100% | 150 | | |
| Marital Status | | | | | | |
| Single | 34% | 51 | 28% | 42 | 0.034 | NS |
| Married | 66% | 99 | 58% | 87 | 0.603 | |
| Widow | 0% | 0 | 12% | 18 | 0.322 | |
| Divorced | 0% | 0 | 2% | 3 | 0.036 | |
| Total | 100% | 150 | 100% | 150 | | |
| Education | | | | | | |
| Illiterate | 32% | 48 | 32% | 48 | 0.352 | S |
| Primary/ secondary | 62% | 93 | 34% | 51 | 0.035 | |
| University | 6% | 9 | 22% | 33 | 0.026 | |
| Postgraduate | 0% | 0 | 12% | 18 | 0.001 | |
| Total | 100% | 150 | 100% | 150 | | |

SD: Stander deviation S: Significant NS: Non-Significant %: Cumulative frequency

*significant at p-value<0.05

** Highly significant at p ≤ 0.01

Table (2): Frequency distribution of the clinical data for the group A (No. 150).

| Items | % | NO. | t-value | Sig. |
|------------------------------------|--------|-----|---------|------|
| Diagnosis | | | | |
| Schizophrenia | 32% | 48 | 0.236 | NS |
| Schizoaffective disorder | 36% | 54 | 0.324 | |
| Bipolar disorder II | 26.7% | 40 | 0.402 | |
| Depressive psychosis | 5% | 8 | 0.367 | |
| Total | 100% | 150 | | |
| Chronicity of disease/years | | | | |
| <1 year | 38.4 % | 28 | 0.652 | NS |
| 1<5 years | 35.6% | 26 | 0.535 | |
| 5<10 years | 19.2% | 14 | 0.726 | |
| >10 years | 6.8% | 5 | 0.613 | |
| Total | 100% | 150 | | |

SD: Stander deviation NS: Non-Significant %: Cumulative frequency

*Significant at p <0.05

** Highly significant at p ≤ 0.01 S:Significant, NS: Non-significant

Table (3): Frequency distribution of emotional balance dimensions among the studied subjects in group A (NO. = 150).

| Emotional balance Subscale | Low emotional balance score (≤ 50) | | High emotional balance score (> 51) | |
|----------------------------|---|------|---|------|
| | No. | % | No. | % |
| Emotional regulation | 45 | 30 | 28 | 18.7 |
| Emotional confrontation | 42 | 28 | 11 | 7.3 |
| Emotional flexibility | 32 | 21.3 | 2 | 1.3 |
| Total | 109 | 72.6 | 41 | 27.3 |

Table (4): Frequency distribution of emotional balance dimensions among group B (NO. = 150).

| Emotional balance Subscale | Low emotional balance score (≤ 50) | | High emotional balance score (> 51) | |
|----------------------------|---|------|---|------|
| | No. | % | No. | % |
| Emotional regulation | 15 | 30 | 58 | 18.7 |
| Emotional confrontation | 6 | 28 | 33 | 7.3 |
| Emotional flexibility | 6 | 21.3 | 32 | 1.3 |
| Total | 27 | 18 | 123 | 82 |

Table (5): Differences between emotional balance of the studied sample (NO. = 300).

| Dimensions of the scale | Group (A) Mean \pm SD | Group (B) Mean \pm SD | P value | Significance | |
|-------------------------|-------------------------|-------------------------|---------|--------------|----|
| Emotional regulation | 30.03 \pm 6.91 | 52.43 \pm 6.23 | 1.154 | 0.256 | NS |
| Emotional confrontation | 7.05 \pm 2.21 | 13.78 \pm 1.67 | 1.169 | 0.000 | S* |
| Emotional flexibility | 8.05 \pm 2.21 | 13.78 \pm 1.67 | 1.169 | 0.000 | S* |

*Significant at $p < 0.05$ ** Highly significant at $p \leq 0.01$ S:Significant, NS: Non-significant

Table (6): Frequency distribution of psychological irritability among of the studied sample (NO. = 300)

| psychological irritability | Low psychological irritability score (≤ 35) | | High psychological irritability score (> 35) | | Total | |
|----------------------------|--|------|--|------|-------|-----|
| | No. | % | No. | % | No. | % |
| Group A | 25 | 16.7 | 125 | 83.3 | 150 | 100 |
| Group B | 106 | 70.7 | 44 | 29.3 | 150 | 100 |

Table (7): Difference between psychological irritability of the studied sample (NO. = 300)

| Total score of scale | Group A | Group B | F value | Sig. | |
|----------------------------------|-----------------|-----------------|---------|------|----|
| Psychological irritability scale | 8.75 \pm 1.07 | 2.95 \pm 0.83 | 0.917 | .001 | S* |

*Significant at $p < 0.05$ ** Highly significant at $p \leq 0.01$ S:Significant, NS: Non-significant

Table (8): Correlation between the psychological irritability and emotional balance of the studied sample (NO. = 300)

| Variables | | Emotional Balance | | |
|----------------------------|---------|-------------------|---------|------|
| | | r- value | P value | Sig. |
| Psychological Irritability | Group A | -0.601 | 0.081 | S |
| | Group B | -0.332 | 0.227 | NS |

*Significant at $p < 0.05$ ** Highly significant at $p \leq 0.01$ S:Significant, NS: Non-significant

Table (1): Shows that, studied sample's age was 18 - 60 years with Mean \pm SD (31.23 \pm 7.32) and (40.2 \pm 4.62) respectively in group (A & B). Regarding residence more than half of patients 58% of group (A) were urban while 62% of group (B) were rural, concerning educational levels 62% of the group (A)

where primary or secondary where while in group (B) 34% where primary or secondary education.

Table (2): Reveals that 36% of participants were diagnosed as schizoaffective disorder and 32% were diagnosed as schizophrenia in "group A". Regarding chronicity of the disease, 38.4% of the studied sample

in “group A” had been mentally ill for less than a year.

Table (3): Reveals that most of the patients in the group of the patients in group (A) 72.6 % suffer from a low score of emotional balance (≤ 50) on the total score of the scale.

Table (4): Shows that most of the studied subjects in a group (B) 82% have a high score of emotional balance (> 51) on the total score of the scale.

Table (5): Reveals that there was a significant difference in emotional balance scores in both groups A & B for the dimensions of Emotional confrontation and flexibility ($P \leq 0.000$), while there were no significant differences in emotional balance first dimension (Emotional regulation), values of the group A versus group B ($P \leq 0.256$).

Table (6): Indicates that majority of the patients in group (A) 83.3 % suffering from high score of psychological irritability (> 35) of the total score of the scale while 70.7% of the group (B) have low score of psychological irritability (≤ 35) of the total score of the scale.

Table (7): Shows that there was a highly significant difference in psychological irritability scores in both groups A & B ($P \leq 0.001$).

Table (8): Demonstrates that there was a significance correlation between the total score of the psychological irritability and emotional balance in the group A ($P \leq 0.081$), where there was no significance correlation in group B ($P \leq 0.227$).

Discussion

Current study was aimed to assess emotional balance and psychological irritability among heavy cigarette male smokers with mental disorders in comparison with other mentally healthy group. It is critical to realize that reducing psychological irritability and improving emotional balance among heavy smokers with mental illnesses is one of several treatment objectives that will be significant in diminishing psychological symptoms and promoting smoking cessation in both mentally ill smokers and smokers with mental health. There may be particular perspectives that are more related to treatment outcomes as reported by **Jebreene (2020)**.

Concerning the gender, the researchers adopted the study on male only which is congruent with the Egyptian culture in using cigarette smoking for female that is not common and was differed in their lifestyle and there was a chance that women with mental disorder might have less access to psychiatric care than men. Regarding the social and demographic data shown in Table (1 and 2), the present study demonstrated that more than half of the group (A & B) was married and educated to primary/secondary education that agreed with the study of **Asharani et.**

al. (2020) who reported that male, low educational level, and psychiatric diagnosis as schizophrenia are high risks for heavy smoking.

Regarding the emotional balance and psychological irritability in table (6, 7 and 8), the result of the current study presented that the majority of the group (A) suffering from psychological irritability and low score of emotional balance, the results consistent with the result of **Sagud et al., (2019); Carlson (2015); Al-Muzaini (2015) & Mikita et al., (2015)** who reported that the evidence of an increase in severe distress among heavy smokers men and women, although this increase affects their mood and emotional balance, that smoking was causing worse mental health for this group but for men, the effects are mixed. In particular, some men facing severe mental and personality health issues who may select smoking to help to manage their severe symptoms.

These results are congruent with **McRae et al. (2010); Mocaiber et al. (2011); Moratti et al. (2011) & Sutherland et al. (2012)** which reported that neuroimaging studies have demonstrated that nicotine addicts are associated with abnormal prefrontal cortex functions that are involved in cognitive emotion regulation.

It was supposed that heavy smokers would exhibit general emotion control deficits in a reappraisal task. The result of the current study contradicted with the study of **Meckel (2022)** who concluded that smoking is associated with lower fear control, drive, lower control, and higher anger, were associated with being a heavy smoker and current smoking. As well study of **Wu (2015)** who supposed that heavy smokers do not have a cognitive impairment in general emotion regulation via deliberate reappraisal, although this does not exclude their inability to select and apply appraisal strategies to regulate emotions in real-life situations.

These findings are congruent with **Brose et al. (2020)** who found that certain risk groups are more vulnerable to use nicotine dependence and tobacco, a strong link between nicotine dependence and psychiatric disorders. Those with mental illnesses had a 2 to 3.2 times higher risk of smoking and a 25% lower chance of quitting when associated to the general population. This result is consistent with that of another study by **Li et al. (2017) & Wootton et al. (2019)** who documented that people with major depressive disorder, schizophrenia, and bipolar disorder are more likely to smoke.

These outcomes are consistent with those of **World Health Organization and Framework Convention on Tobacco Control (2020)** reported that this is presumably due to genetic/biological, psychological, and social factors. In 2019, 27.2% of adults in the United States with any mental illness reported having

smoked cigarettes within the past month compared to 15.8% of adults without a mental illness. Approximately 1 in 4 (or 25%) adults in the United States suffer from some form of mental illness or substance use disorder, and these adults consume nearly 40% of all cigarettes smoked by adults.

It is clear that people with mental illness have a shorter lifespan (10 - 25 years) than the general population **World Health Organization (2015)**, and smoking contributes to additional risk of mortality and morbidity in this population **Bandiera et al. (2019)**. As well, **Cheng & Chen (2019)** who found that these reports add further evidence that smoking can be detrimental to people with mental illness, especially those with depression and psychosis.

Conclusion:

Based on the findings of the present study, it is possible to conclude that, there were significant differences in emotional balance between the A and B groups for the dimensions of emotional confrontation and flexibility ($P \leq 0.000$). There was a high significant difference in psychological irritability between the A and B groups ($P \leq 0.001$). The results concluded that there were significance positive correlations between the psychological irritability and emotional balance in the group A ($P \leq 0.081$), which supports the study hypothesis.

Recommendations:

Corresponding on the results and conclusions of the present study, recommended the following:

- More attention is being directed towards smoking cessation programmes; access to the programs remains suboptimal and therefore needs improvement in order to reduce personality factors among psychiatric patients and the general public.
- Health care workers and professional psychiatric nurses should be trained to provide smoking cessation counselling, as current literature indicates that Egyptian health workers are not well trained to provide such a service to their patients.
- Health education programs should be standardized to reach a broad range of Egyptians, and they should be delivered through mass media and school-based prevention programs aimed at high-risk adolescent groups.
- These programs should also aim at educating Egyptian females, who are being targeted by tobacco companies under the false message of liberty and equality.
- Motivational interviewing and managing of psychiatric disorders are crucial elements of abstinence and relapse prevention of smoking.
- Furthermore, annual studies on the effectiveness of smoking prevention programs are needed and the

aim of these studies should be extended to investigate psychological effects and personality disorders

Limitation of this study:

This study did not investigate both emotional balance and psychological irritability among heavy smokers with mental disorders among females or specified population eras, the study might exclude the other co factors for high irritability and emotional imbalance among mentally ill patients rather than smoking or mental illness as genital, environmental or family factors.

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