Research Article

Comparison between Smoking and Nonsmoking Palestinian Medical Students in the Health-Promoting Behaviors and Lifestyle Characteristics

Nihad Al-Othman,1 Mustafa Ghanim,1 and Moath Alqaraleh2

1Faculty of Medicine and Health Sciences, An-Najah National University, Nablus, State of Palestine
2Pharmacological and Diagnostic Research Center (PDRC), Faculty of Pharmacy, Al-Ahliyya Amman University, Amman 19328, Jordan

Correspondence should be addressed to Nihad Al-Othman; n.othman@najah.edu

Received 13 January 2021; Revised 7 March 2021; Accepted 10 March 2021; Published 23 March 2021

Academic Editor: Bishwajit Ghose

Copyright © 2021 Nihad Al-Othman et al. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Objectives. This study was aimed at comparing the predictors of health-promoting lifestyle behaviors between smoking and nonsmoking medical students at An-Najah National University located in Palestine. Methods. A descriptive cross-sectional study was performed during the academic year 2017/2018. Medical students were asked to complete a self-reported questionnaire that involved the predictors of Health-Promoting Lifestyle Profile-II. With the use of a suitable available sample composed of a total of 430 medical students, 400 had successfully completed the questionnaire and were included in the study. The data was analyzed by using SPSS version 24 software. Results. The sample included 400 medical students with a mean age of 18.7 years, 311 (77.7%) were females, and 89 (22.3%) were males. The prevalence of smokers in the sample was 110 (27.5%). For the health status of over half the students, 211 (52.8%) were excellent. The total HPLP-II score for smoking students resulted to be significantly lower in comparison to nonsmoking students (131.2 versus 135.7). This significant difference was clear in the interpersonal relation subscale (25.6 versus 26.8) for smoking and nonsmoking students, respectively. The score differences in other subscales were generally lower in smoking students. However, these differences were not consistent with statistical significance. Conclusion. The significant lower total Health-Promoting Lifestyle Profile-II score in smoking students necessitates the urgent need for awareness programs, not only towards smoking but also on how to enhance student health-promoting lifestyle behaviors.

1. Introduction

Smoking is considered a central public health problem as it is among the leading preventable causes of death worldwide [1]. It is estimated that more than 8 million people die every year as a direct or indirect result of smoking [2]. Around 80% of smokers reside in low- and middle-income countries, which further aggravates the deleterious health effects associated with tobacco in these countries, especially that they lack sufficient resources to adopt preventive and management programs against smoking [2, 3]. Palestine has very limited income resources and suffers from the continuity of the rising rate of smokers, particularly among university students [4–6]. Such status can be quite frustrating because it is reported that the earlier the smoking intake, the more susceptible an individual can be for cancer, heart disease, and other health-related consequences [7, 8]. Previous studies in Arab countries, including Palestine, focused on the estimation of the prevalence, awareness, patterns, and attitudes of smoking [3, 9, 10]. A recent study found that Palestinian smoking university students adapted towards unhealthy habits such as consuming high amounts of caffeinated drinks as well as fast food, which would accelerate the occurrence and seriousness of smoking health effects [4]. Some studies within the Arabian Peninsula and nearby countries addressed the unhealthy behaviors and lifestyle among
university students using the Pender model [9, 10]. This model focused on a lifestyle that triggers the consumption of a low-fat diet, performing consistent physical activities, preserving healthy body weight, and preventing smoking and anxiety in youth [11].

The objective of this study was to assess the differences in health-promoting behaviors and lifestyle between smoking and nonsmoking medical students at An-Najah National University in Palestine with the use of the Pender model.

2. Materials and Methods

2.1. Study Sample. A cross-sectional study was done to investigate the health-promoting lifestyle behaviors (HPLBs) among students at the Faculty of Medicine and Health Sciences at An-Najah National University, the largest university in Palestine, during the spring semester of 2018. A convenient nonprobability available sample took part in this study. The size of the sample was estimated using Jekel et al. equation [12]. Assuming the probability of smoking among students is 0.5 with a confidence level of 95%, the estimated minimal sample size was 384. Nevertheless, we decided to increase the sample size to 431 in order to decrease the standard error of the mean and to account for nonresponse rate. Only 400 students who were included in the study agreed voluntarily to complete the questionnaire for research purposes. We excluded 31 students who failed to complete the questionnaire or did not sign the consent form.

2.2. Study Instrument. We used the previously validated self-administered questionnaire: Health-Promoting Lifestyle Profile-II (HPLP-II), after we had got the official permission from the author who invented this tool. HPLP-II is an extensively useful tool that helps researchers to measure the patterns and determinants of HPLBs [13]. The questionnaire was distributed to the students in English which is the official adopted language in studying medicine in the faculty. The HPLP-II is composed of a 52-item questionnaire which is made of two main categories (health-promoting behaviors and psychosocial well-being) and six subscales as it is explained in Table 1. Participants answer each question of the 52 items on a four-point Likert scale (1, never; 2, sometimes; 3, and often 4, routinely). The subscale score was calculated by summing the scores for all items within that subscale. The total HPLP-II score was calculated as the sum of all subscale scores, with a higher score being consistent with better HPLBs.

2.3. Pilot Study. Researchers performed a pilot study composed of 20 undergraduate medical students to examine the clarity and relevance of the instrument. The Cronbach alpha value for total HPLP-II was 0.881.

2.4. Ethical Approval. Informed signed consent has been acquired from all participants. This study got official ethical approval by the Institutional Review Board of research ethics according to the laws of An-Najah National University located in Nablus, Palestine.

2.5. Statistical Analysis. Statistical analysis was done using SPSS version 24 software. A chi-square test was applied to compare the differences in item responses between smoking and nonsmoking medical students. An independent sample t-test was applied to analyze the variations in the total HPLP-II mean scores between the two groups. The p-value < 0.05 was considered statistically significant.

3. Results

3.1. Characteristics of the Sample. The age of the students ranged from 17 to 21 years (mean age was 18.7 years). Of the 400 students included in this study, 110 (27.5%) were smoking and 290 (72.5%) were nonsmoking. Data were tested by the normally test and were found to be normally distributed. As for the gender of students, 311 (77.7%) were females and 89 (22.3%) were males. About 223 (55.8%) of the students were in their first academic year. Over 69.3% of students were living in cities; 21.3% and 9.6% came from rural backgrounds and refugee camps, respectively. For the health status of over half of the students, 211 (52.8%) was excellent while it was good for 183 (45.8%) and bad for 6 (1.4%).

3.2. Health-Promoting Behaviors of Students. When analyzing health-promoting behaviors, only those who reported often or routinely engaging in each health practice item were considered practicing health-promoting behaviors. Those who reported never or sometimes were considered not practicing particular health-promoting behaviors. Table 2 illustrates the results of the three subscales of health-promoting behaviors (health responsibility, physical activity, and nutritional habits) and the comparison between smoking and nonsmoking students who were considered practicing health-promoting behaviors.

3.2.1. Health Responsibility (HR). Only 47.9% of the students had a sense of overall HR. We found 19.2% of the students examining their body shape monthly for physical alterations or danger marks. About 38.3% of students watch TV programs about developing health, and 42.8% of them discuss health concerns with health professionals. The overall proportion of HR items among nonsmoking and smoking students was approximately equal. More nonsmoking than smoking students examine their body shape monthly for physical alterations or danger marks (24.8% versus 17.3%), attend learning programs on individual healthcare (37.6% versus 35.5%), follow TV programs about developing health (39% versus 36.4%), and discuss health fears with health professionals (45.2% versus 39.4%). On the other hand, fewer nonsmoking students seek advice from health professionals (59% versus 70.9%). Chi-square test analysis showed that, with the exception of the difference in the item (seeking advice from health professionals), all other differences regarding HR items between smoking and nonsmoking students were statistically insignificant.

3.2.2. Physical Activity (PA). On average, 25.1% of the students were involved in doing the PA items. Among the 400 students of the sample, 18% followed a designed exercise
program, 26.5% were trained forcefully, 27.5% practiced light-to-moderate PA, and 19.3% inspected their target pulse rate while exercising. Nonsmoking and smoking students engaged equally in the overall PA items, whereas more nonsmoking than smoking students were trained forcefully for at least 20 minutes (27.9% versus 22.7%). Chi-square test shows that there were no statistically significant differences between the PA items and the smoking status.

3.2.3. Nutritional Habits (NH). About 40.3% of the students were involved in appropriate NH within the overall items. Only 29.8% of the students chose a diet poor in fat whether saturated or unsaturated, 34.3% restricted utilizing sugars and sweets, 36.5% consumed at least two to five servings of fruit, and 39% drank milk daily. More nonsmoking than smoking students had better NH (41.2% versus 38.7%), consumed vegetables (40.3% versus 34.5%), drank milk (40.7% versus 34.5%), and examined labels to discover nutrients, fats, and sodium in enclosed food (43.1% versus 38.1%). There were no statistically significant differences between NH items and the smoking status.

3.3. Psychosocial Well-Being. When analyzing the psychosocial well-being of the students, only those who reported often or routinely adopting a psychosocial practice were considered having psychological well-being.

Table 1: Comparison of psychosocial well-being between smoking and nonsmoking medical students (n = 400) by the chi-square test.

| Subscale                        | Smoking (n = 110) | Nonsmoking (n = 290) | Total N (%) | X² | p value |
|----------------------------------|-------------------|----------------------|-------------|----|---------|
| Spiritual growth                 |                   |                      |             |    |         |
| Q27: I believe I am growing and varying in positive ways | 72 (65.45) | 189 (65.17) | 261 (63.3) | 0.00 | 0.95   |
| Q28: I feel that my existence has a purpose | 88 (80) | 245 (84.482) | 333 (83.3) | 1.15 | 0.28   |
| Q29: I look ahead to the future | 93 (84.54) | 253 (87.24) | 346 (86.5) | 0.49 | 0.48   |
| Q30: I feel comfortable and in harmony with myself | 84 (77.06) | 216 (74.48) | 300 (75) | 0.28 | 0.59   |
| Q31: I work in the direction of long-term aims in my life. | 86 (78.18) | 234 (80.68) | 320 (80) | 0.31 | 0.57   |
| Q32: I discover that every day is exciting and challenging | 58 (52.72) | 176 (60.68) | 234 (58.5) | 2.08 | 0.15   |
| Q33: I am attentive to what is vital to me in my life | 85 (77.27) | 235 (81.03) | 320 (80) | 0.70 | 0.40   |
| Q34: I believe linked with some force larger than myself | 70 (63.63) | 207 (71.38) | 277 (69.3) | 2.24 | 0.13   |
| Q35: I expose me to new skills in addition to challenges | 75 (68.18) | 199 (68.62) | 274 (68.5) | 0.01 | 0.93   |
| Mean (%)                        | 71.9              | 74.9                | 73.8        |     |         |
| Interpersonal relations         |                   |                      |             |    |         |
| Q36: I talk about my troubles and concerns with individuals close to me | 55 (50) | 182 (62.75) | 237 (59.3) | 5.37 | 0.02*  |
| Q37: I compliment other individuals simply for their successes | 76 (69.09) | 202 (69.65) | 278 (69.5) | 0.01 | 0.91   |
| Q38: I keep important and satisfying relationships with others | 87 (79.09) | 236 (81.38) | 323 (80.7) | 0.26 | 0.60   |
| Q39: I spend some time with my close friends | 82 (74.54) | 217 (74.82) | 299 (74.8) | 0.00 | 0.953  |
| Q40: I simply show worry, love, and warmth to many individuals | 60 (54.54) | 185 (63.79) | 245 (61.3) | 2.87 | 0.09   |
| Q41: I touch and I am touched by individuals that I concern about | 83 (75.45) | 215 (74.14) | 298 (74.5) | 0.07 | 0.79   |
| Q42: I discover ways to meet my demands for intimacy | 59 (53.63) | 188 (64.83) | 247 (61.8) | 4.23 | 0.04*  |
| Q43: I obtain support from a group of caring people | 82 (74.54) | 207 (71.37) | 289 (72.3) | 0.39 | 0.52   |
| Q44: I settle conflicts with others through discussion and compromise | 78 (70.91) | 207 (71.37) | 285 (71.3) | 0.01 | 0.92   |
| Mean (%)                        | 66.7              | 70.5                | 69.5        |     |         |
| Stress management               |                   |                      |             |    |         |
| Q45: I obtain sufficient sleep | 49 (44.54) | 148 (51.03) | 197 (49.3) | 1.34 | 0.24   |
| Q46: I get enough time for leisure each day | 48 (43.63) | 147 (50.68) | 195 (48.8) | 1.58 | 0.20   |
| Q47: I believe those effects in my life that I cannot modify | 57 (51.81) | 166 (57.24) | 223 (55.8) | 0.95 | 0.32   |
| Q48: I focus on enjoyable feelings at bedtime | 56 (50.90) | 152 (52.41) | 208 (52) | 0.07 | 0.78   |
| Q49: I use precise ways to manage my stress | 55 (50) | 150 (51.72) | 205 (51.3) | 0.09 | 0.75   |
| Q50: I pose time between job and play | 54 (49.09) | 139 (47.93) | 193 (48.3) | 0.04 | 0.83   |
| Q51: I perform leisure or contemplation for at least 15 to not more than 20 min a day | 48 (43.63) | 126 (43.44) | 174 (43.5) | 0.00 | 0.97   |
| Q52: I pace myself to avoid exhaustion | 57 (51.82) | 141 (48.62) | 198 (49.5) | 0.32 | 0.56   |
| Mean (%)                        | 48.2              | 50.4                | 49.8        |     |         |

Values for smoking and nonsmoking medical students are expressed as n (%). * p < 0.05.
| Subscale                                      | Smoking (n = 110) N (%) | Nonsmoking (n = 290) N (%) | Total N (%) | X²    | p value |
|----------------------------------------------|------------------------|---------------------------|-------------|-------|---------|
| **Health responsibility**                    |                        |                           |             |       |         |
| Q1: I examine my body shape monthly for physical alterations/danger marks | 19 (17.27)             | 72 (24.82)                | 91 (22.8)   | 2.59  | 0.11    |
| Q2: I record any odd signs or marks to a physician or additional health professionals | 51 (46.36)             | 153 (52.75)               | 204 (51)    | 1.30  | 0.25    |
| Q3: I look for guidance or advice when necessary | 79 (71.81)             | 189 (65.17)               | 268 (67)    | 1.59  | 0.20    |
| Q4: I ask health professionals to realize their advice | 78 (70.91)             | 171 (58.96)               | 249 (62.3)  | 4.84  | 0.03*   |
| Q5: I obtain a second judgment when asked about the opinion supplied by health professionals | 74 (67.27)             | 185 (63.79)               | 259 (64.8)  | 0.42  | 0.51    |
| Q6: I seek data from health professionals concerning how to obtain fine care of myself | 55 (50)                | 120 (41.37)               | 175 (43.8)  | 2.40  | 0.12    |
| Q7: I discuss health fears with health professionals | 40 (36.36)             | 131 (45.17)               | 171 (42.8)  | 2.53  | 0.11    |
| Q8: I follow TV programs about developing health | 40 (36.36)             | 113 (38.96)               | 153 (38.3)  | 0.23  | 0.63    |
| Q9: I attend learning programs on individual health care | 39 (35.45)             | 109 (37.58)               | 148 (37)    | 0.15  | 0.69    |
| Mean (%)                                     | 48                     | 47.6                      | 47.9        |       |         |
| **Physical activity**                        |                        |                           |             |       |         |
| Q10: I pursue a designed exercise program    | 23 (20.91)             | 49 (16.89)                | 72 (18)     | 0.86  | 0.35    |
| Q11: I train forcefully at least for 20 min for more than twice a week, for example, jogging, bicycling, climbing stairs, dancing, swimming | 25 (22.72)             | 81 (27.93)                | 106 (26.5)  | 1.12  | 0.29    |
| Q12: I practice light-to-moderate physical activity, for example, continue walking between 30 and 40 minutes at least five times a week | 27 (24.54)             | 83 (28.62)                | 110 (27.5)  | 0.66  | 0.41    |
| Q13: I engage in entertaining PA, such as bicycling and swimming | 25 (22.72)             | 67 (23.10)                | 92 (23)     | 0.01  | 0.93    |
| Q14: I perform stretching exercises more than three times a week | 24 (21.82)             | 59 (20.34)                | 83 (21)     | 0.10  | 0.74    |
| Q15: I do exercise through normal daily activities, for example, jogging and using stairs | 46 (41.82)             | 122 (42.06)               | 168 (42)    | 0.00  | 0.96    |
| Q16: I inspect my heart rate while exercising | 23 (20.91)             | 54 (18.62)                | 77 (19.3)   | 0.26  | 0.60    |
| Q17: I attain my target pulse rate while exercising | 29 (26.36)             | 65 (22.41)                | 94 (23.5)   | 0.69  | 0.40    |
| Mean (%)                                     | 24.8                   | 25                        | 25.1        |       |         |
| **Nutritional habits**                       |                        |                           |             |       |         |
| Q18: I select a diet poor in fat whether saturated or unsaturated | 33 (30)                | 86 (29.65)                | 119 (29.8)  | 0.00  | 0.94    |
| Q19: I restrict the utilization of sugars and sweets | 37 (33.64)             | 100 (34.48)               | 137 (34.3)  | 0.02  | 0.87    |
| Q20: I consume at least six to less than 12 servings of bread, pasta, and rice daily | 42 (38.18)             | 118 (40.69)               | 160 (40)    | 0.21  | 0.65    |
| Q21: I consume at least two to less than five servings of fruit daily | 41 (37.27)             | 105 (36.21)               | 146 (36.5)  | 0.04  | 0.84    |
| Q22: I consume from three to not more than five servings of vegetables daily | 38 (34.54)             | 117 (40.34)               | 155 (38.8)  | 1.13  | 0.29    |
| Q23: I consume from two to not more than three servings of milk and cheese daily | 38 (34.54)             | 118 (40.69)               | 156 (39)    | 1.26  | 0.26    |
| Q24: I consume at least two to not more than three servings of eggs, meat, nuts, poultry, beans, and fish daily | 49 (44.54)             | 136 (46.89)               | 175 (43.8)  | 0.17  | 0.67    |
| Q25: I examine labels to discover nutrients, fats, and sodium in enclosed food | 42 (38.18)             | 125 (43.10)               | 167 (41.8)  | 0.79  | 0.37    |
Table 2: Continued.

| Subscale                          | Smoking \((n = 110)\) N (%) | Nonsmoking \((n = 290)\) N (%) | Total N (%) | \(X^2\) | \(p\) value |
|----------------------------------|----------------------------|----------------------------|-------------|--------|------------|
| Q26: I have breakfast           | 63 (57.27)                | 171 (58.96)               | 234 (58.5)   | 0.09   | 0.76       |
| Mean (%)                         | 38.7                      | 41.2                      | 40.3        |        |            |

Values for smoking and nonsmoking medical students are expressed as \(n\) (%). \(^*\) \(p < 0.05\).

Table 3: Comparison of subscale scores of the HPLBs between smoking and nonsmoking medical students \((n = 400)\) using \(t\)-test.

| Health promotion lifestyle profile | Smoking \((n = 110)\) | Nonsmoking \((n = 290)\) | Mean difference | \(t\)-test | \(p\) value |
|-----------------------------------|-----------------------|--------------------------|-----------------|------------|------------|
| Health-promoting behaviors        |                       |                          |                 |            |            |
| Health responsibility (nine questions) | 22.29 ± 4.82         | 23.42 ± 14.45            | -1.13           | 0.80       | 0.21       |
| Physical activity (eight questions)          | 15.42 ± 5.02         | 15.40 ± 5.26             | 0.02            | 0.03       | 0.48       |
| Nutritional habits (nine questions)          | 20.67 ± 4.88         | 21.45 ± 4.84             | -0.78           | 1.43       | 0.07       |
| Well-being habits                   |                       |                          |                 |            |            |
| Spiritual growth (nine questions)         | 27.16 ± 6.70         | 28.06 ± 5.75             | -0.91           | 1.33       | 0.09       |
| Interpersonal relations (nine questions)    | 25.58 ± 5.08         | 26.82 ± 5.66             | -1.24           | 2.01       | 0.02*      |
| Stress management (eight questions)            | 20.04 ± 4.63         | 20.47 ± 5.07             | -0.43           | 0.77       | 0.21       |
| Total Health-Promoting Lifestyle Profile-II scale (52 questions) | 131.17 ± 20.60       | 135.65 ± 24.52           | -4.48           | 1.70       | 0.04*      |

The mean values for smoking and nonsmoking medical students are given. \(^*\) \(p < 0.05\).

relations, and stress management) and the comparison between smoking and nonsmoking students who were considered having psychological well-being.

3.3.1. Spiritual Growth (SG). About 73.8% of the students resulted to have good SG within the overall items. More nonsmoking than smoking students had more efficient SG (74.9% versus 71.9%), felt that their existence has a purpose (84.5% versus 80%), and discovered that each day is exciting and challenging (60.7% versus 52.7%). Chi-square tests showed that there were no statistically significant differences between SG items and the smoking status.

3.3.2. Interpersonal Relations (IR). About 69.5% of the students had effective IR in the overall items (70.5% in nonsmoking versus 66.9% in smoking students). Statistically significant differences between nonsmoking and smoking students were found only in two items: discovering ways to meet their demands for intimacy (64.8% versus 53.6%) and talking more about their troubles and concerns to individuals close to them (62.8% versus 50%).

3.3.3. Stress Management. Less than half of the students could manage stress in the overall items. A greater number of nonsmoking students showed stress-management skills (50.4% versus 48.2%) and obtained enough time for leisure each day (50.7% versus 43.6%), without statistical significance.

3.4. Comparison of Subscale Scores of the Health Promotion Lifestyle Profile II. Nonsmoking students had significantly higher total HPLP-II scores than smoking students \((t = 1.702, p < 0.05)\). Nonsmoking students were shown to be significantly more actively engaged in IR subscale in comparison to smoking students \((t = 2.011, p < 0.05)\). The subscale scores for HR, NH, SG, and SM were higher in nonsmoking students compared to smoking ones without statistical significance (Table 3).

4. Discussion

This is the first study to explore the differences in HPLBs among smoking and nonsmoking medical students in Palestine according to Pender’s model. Medical students were the focus of this study as they represent the prospective doctors to serve people in the country. The results of this study help the stakeholders at the universities for better understanding of the health habits of medical students in order to ameliorate their future responsibility towards their humanitarian professions.

This study found that smoking students resulted to have a significantly lower total mean value for HPLP-II than that in nonsmoking students \((t = 1.702, p < 0.05)\). Based on this, we can conclude that it appears that smoking students show less care about their health and nutrition, despite their realization of the deleterious health effects of smoking on their well-being [10]. These findings are consistent with previous regional and international studies [10, 14–16] but are inconsistent with other studies [17].

This study revealed that the total HPLP-II mean score for medical students was 133.4, which is higher than that observed in Saudi Arabia [14], Turkey [10], and Iran [18]. These variations in HPLP-II mean scores could result from including nursing, paramedical, or health sciences students.
in these studies while our sample included medical students. The high total mean scores of HPLP-II for medical students reflect their high level of health awareness, which is attributed to the nature of their health and scientific background as prospective doctors [19, 20].

Our results showed that the differences between smoking and nonsmoking medical students were insignificant in all HPLP-II subscales with the exception of the IR subscale which was significantly lower in nonsmoking students. This is consistent with other studies [10, 21, 22]. These findings are assuring that smoking will not significantly affect most of the HPLB items. With this regard, it seems that smoking decreases the chances of students to talk about their troubles and concerns and reduces their skills to discover ways to meet their demands for intimacy.

Our research revealed that 27.5% of medical students resulted to be smokers. These findings are in agreement with previous studies [22–24]. Regarding the gender, there were more smoking males compared to females. The gender-specific smoker frequency in our study was lower than what was reported in previous studies in Palestine [23], Syria [25], and Saudi Arabia [26]. The lower ratio of female smokers is related to traditions and cultural backgrounds, as smoking is still considered a social stigma for females [27, 28]. It is noteworthy that there was a female predominance in our sample which reflects the high ratio of female students at the faculty. This might have affected the results concerning the gender.

There were several limitations of this study. The convenient sample was obtained from a single university which is the largest university in Palestine. Yet, it may not be representative of all Palestinian medical students. Additional thorough studies including medical students from all other universities in Palestine are needed. The questionnaire was self-reported, and so reporting bias cannot be excluded. The questionnaire was administered to students during their regular classes which may have influenced the responses, and students who were absent on that day did not have the chance to participate. We did not specify if the form of smoking is cigarette, water pipe, or cigar.

5. Conclusions

This study provides new information about the possible impact of smoking status among medical students on the performance of HPLBs. A significant difference level of the total HPLP-II mean score was found between smoking and nonsmoking university students. No statistically significant differences were found between the two groups and all subscales except for IR.

University educators should acquire a perception of the significance of including the concepts of HPLBs and lifestyle modifications within the curriculum plan. It is vital to implement the programs of smoking cessation among medical students as they represent future doctors. Further studies with more representative samples from different faculties and various universities are needed for a better understanding of the impact of smoking on different HPLB scores.

Data Availability

All the utilized data to support the findings of the current study are included in the article.

Conflicts of Interest

The authors declare no conflict of interest.

Authors’ Contributions

All research was done by the authors.

Acknowledgments

The authors would like to offer their gratitude to all participants for their cooperation. We are thankful to our colleague, Dr. Saed Zyoud, for his valuable comments on the manuscript. We appreciate the efforts of Miss. Yasmeen Saleh from the USA and Mr. Faisal Abbas from Palestine for their English language editing.

References

[1] R. J. Bonnie, K. Stratton, and L. Y. Kwan, Eds., Public health implications of raising the minimum age of legal access to tobacco products, National Academies Press, Washington, DC, 2015.

[2] Organization WH, “Smoking”.

[3] M. Ng, M. K. Freeman, T. D. Fleming et al., “Smoking prevalence and cigarette consumption in 187 countries, 1980–2012,” Journal of the American Medical Association, vol. 311, no. 2, pp. 183–192, 2014.

[4] R. Abu Seir, A. Kharroubi, and I. Ghannam, “Prevalence of tobacco use among young adults in Palestine,” Eastern Mediterranean Health Journal, vol. 26, no. 1, pp. 75–84, 2020.

[5] R. Hamadheh, J. Lee, N. M. E. Abu-Rmeileh et al., “Gender differences in waterpipe tobacco smoking among university students in four Eastern Mediterranean countries,” Tobacco Induced Diseases, vol. 18, pp. 1–12, 2020.

[6] M. Tucktuck, R. Ghandour, and N. M. E. Abu-Rmeileh, “Waterpipe and cigarette tobacco smoking among Palestinian university students: a cross-sectional study,” BMC Public Health, vol. 18, no. 1, p. 1, 2017.

[7] K. Li, C. Yao, X. di et al., “Smoking and risk of all-cause deaths in younger and older adults: a population-based prospective cohort study Among Beijing Adults in China,” Medicine, vol. 95, no. 3, article e2438, 2016.

[8] B. Thomson, N. A. Rojas, B. Lacey et al., “Association of childhood smoking and adult mortality: prospective study of 120 000 Cuban adults,” The Lancet Global Health, vol. 8, no. 6, pp. e850–e857, 2020.

[9] K. M. Almutairi, W. B. Alonazi, J. M. Vinluan et al., “Health promoting lifestyle of university students in Saudi Arabia: a cross-sectional assessment,” BMC Public Health, vol. 18, no. 1, p. 1093, 2018.

[10] M. Nacar, Z. Baykan, F. Cetinkaya et al., “Health promoting lifestyle behaviour in medical students: a multicentre study from Turkey,” Asian Pacific Journal of Cancer Prevention: APJCP, vol. 15, no. 20, pp. 8969–8974, 2014.
[11] R. L. Lee and A. J. Loke, "Health-promoting behaviors and psychosocial well-being of university students in Hong Kong," *Public Health Nursing*, vol. 22, no. 3, pp. 209–220, 2005.

[12] J. F. Jekel, D. L. Katz, J. G. Elmore, and D. Wild, *Epidemiology, Biostatistics and Preventive Medicine*, Elsevier Health Sciences, 2007.

[13] S. N. Walker, K. Volkan, K. R. Schrist, and N. J. Pender, "Health-promoting life styles of older adults: comparisons with young and middle-aged adults, correlates and patterns," *ANS Advances in Nursing Science*, vol. 11, no. 1, pp. 76–90, 1988.

[14] S. H. Alzahrani, A. A. Malik, J. Bashawri et al., "Health-promoting lifestyle profile and associated factors among medical students in a Saudi university," *SAGE Open Medicine*, vol. 7, 2019.

[15] G. Mahmoodi, M. A. Jahani, M. N•ghavian, A. Nazari, and N. Ahmadi, "A study of health-promoting behaviors of medical sciences students of Islamic Azad University of Sari, Iran 2013," *Iranian Journal of Health Sciences*, vol. 2, no. 2, pp. 52–57, 2014.

[16] M. Bhuiyan, J. W. K. Sheng, F. H. B. Ghazali et al., "Health-promoting lifestyle habits among preclinical medical students," *Pakistan Journal of Medical and Health Sciences*, vol. 11, no. 2, pp. 490–495, 2017.

[17] B. Kara and B. Iscan, "Predictors of health behaviors in Turkish female nursing students," *Asian Nursing Research*, vol. 10, no. 1, pp. 75–81, 2016.

[18] N. Ghafouri, J. D. Hirsch, G. Heydari, C. M. Morello, G. M. Kuo, and R. F. Singh, "Waterpipe smoking among health sciences university students in Iran: perceptions, practices and patterns of use," *BMC Research Notes*, vol. 4, no. 1, 2011.

[19] A. A. K. Bany Sayd, "Nutrition awareness level of Al-Balqa Applied University students," *Journal of Biology, Agriculture and Healthcare*, vol. 4, pp. 99–106, 2014.

[20] S. Mandic, H. Wilson, M. Clark-Grill, and D. O’Neill, "Medical students’ awareness of the links between physical activity and health," *Montenegrin Journal of Sports Science and Medicine*, vol. 6, no. 2, pp. 5–12, 2017.

[21] N. Özçakar, M. Kartal, H. Mert, and D. Güldal, "Healthy living behaviors of medical and nursing students," *International Journal of Caring Sciences*, vol. 8, no. 3, p. 536, 2015.

[22] R. Hacihasanoglu, M. A. Al-Khatib, and H. J. Alharazin, "Smoking, awareness of smoking-associated health risks, and knowledge of national tobacco legislation in Gaza, Palestine," *Central European Journal of Public Health*, vol. 22, no. 2, pp. 80–89, 2014.

[23] S. Keller, J. E. Maddock, W. Hannöver, J. R. Thyrian, and H.-D. Basler, "Multiple health risk behaviors in German first year university students," *Preventive Medicine*, vol. 46, no. 3, pp. 189–195, 2008.

[24] W. Maziak, F. M. Fouad, T. Asfar et al., "Prevalence and characteristics of narghile smoking among university students in Syria," *The International Journal of Tuberculosis and Lung Disease*, vol. 8, no. 7, pp. 882–889, 2004.

[25] H. M. Abdulghani, N. A. Alrowais, A. I. Alhawi et al., "Cigarette smoking among female students in five medical and non-medical colleges," *International Journal of General Medicine*, vol. 6, p. 719, 2013.

[26] A. F. Al-Kaïba, A. A. Saeed, A. M. Abdalla, H. A. Hassan, and A. A. Mustafa, "Prevalence and associated factors of cigarette smoking among medical students at King Fahad Medical City in Riyadh of Saudi Arabia," *Journal of Family and Community Medicine*, vol. 18, no. 1, pp. 8–12, 2011.

[27] J. S. Jarallah, K. A. Al-Rubeaan, A. R. A. Al-Nuaim, A. A. Al-Ruhaili, and K. A. Kalantari, "Prevalence and determinants of smoking in three regions of Saudi Arabia," *Tobacco Control*, vol. 8, no. 1, pp. 53–56, 1999.