

**Table 1.** The absolute and relative frequency of demographic characteristics of the intervention and control groups (75 cases per group) before educational intervention (the numbers in parentheses are percent)

| <b>Demographic characteristics</b>                                     | <b>Control group</b> | <b>Intervention group</b> |
|--|----------------------|---------------------------|
| <b>Marital status</b>  |                      |                           |
| Single   | 70 (93.3)            | 69 (92.0)                 |
| Married  | 5 (6.7)              | 6 (8.0)                   |
| <b>Education</b>   |                      |                           |
| Associate degree   | 20 (26.7)            | 26 (34.7)                 |
| Bachelor's degree  | 55 (73.3)            | 49 (65.3)                 |
| <b>Residence status</b>  |                      |                           |
| Dormitory  | 31 (41.3)            | 23 (30.7)                 |
| Home   | 44 (58.7)            | 52 (69.3)                 |
| <b>Occupation</b>  |                      |                           |
| Governmental   | 6 (8.0)              | 4 (5.3)                   |
| Non-governmental   | 26 (34.7)            | 20 (26.7)                 |
| Unemployed (student)   | 43 (57.3)            | 51 (68.0)                 |
| <b>Place of water pipe smoking for the first time</b>                  |                      |                           |
| At home  | 21 (28.0)            | 14 (18.7)                 |
| Dormitory  | 5 (6.7)              | 4 (5.3)                   |
| Coffee shop  | 17 (22.7)            | 22 (29.3)                 |
| Traditional Restaurants  | 18 (24.0)            | 22 (29.3)                 |
| Entertainment venues   | 14 (18.7)            | 13 (17.3)                 |
| <b>Accompanying person while water pipe smoking for the first time</b> |                      |                           |
| Friends  | 61 (81.3)            | 53 (70.7)                 |
| Alone  | 1 (1.3)              | 6 (8.0)                   |
| Family   | 3 (4.0)              | 3 (4.0)                   |
| Relatives  | 10 (13.3)            | 13 (17.3)                 |
| <b>History of water pipe smoking in family</b>                         |                      |                           |
| Yes  | 34 (45.3)            | 30 (40.0)                 |
| No   | 41 (54.7)            | 45 (60.0)                 |
| <b>Type of water pipe</b>  |                      |                           |
| fruit essence  | 71 (94.7)            | 73 (97.3)                 |
| Natural tobacco  | 4 (5.3)              | 2 (2.7)                   |

**Table 2.** Mean scores of the motivation phase structures of the Health Action Process Approach (HAPA) and Theory of Planned Behavior (TPB) in the intervention and control groups before and after the intervention

| <b>Constructs</b>                   | <b>Control group</b> | <b>Intervention group</b> | <b>P value*</b> |
|-------------------------------------|----------------------|---------------------------|-----------------|
| <b>Risk perception</b>              |                      |                           |                 |
| Before intervention                 | 61.50±20.30          | 59.60±18.10               | 0.412           |
| After intervention                  | 62.40±15.20          | 79.20±10.60               | 0.001           |
| P value**                           | 0.06                 | 0.001                     | -               |
| <b>Outcome expectations</b>         |                      |                           |                 |
| Before intervention                 | 56.80±16.70          | 55.70±15.80               | 0.828           |
| After intervention                  | 58.20±14.60          | 69.20±11.70               | 0.001           |
| P value**                           | 0.02                 | 0.001                     | -               |
| <b>Self-efficacy</b>                |                      |                           |                 |
| Before intervention                 | 53.20±26.60          | 53.30±22.20               | 0.980           |
| After intervention                  | 55.70±21.70          | 67.20±13.50               | 0.001           |
| P value**                           | 0.12                 | 0.001                     | -               |
| <b>Attitude</b>                     |                      |                           |                 |
| Before intervention                 | 67.70±25.90          | 63.90±23.60               | 0.343           |
| After intervention                  | 69.70±21.76          | 74.80±14.50               | 0.09            |
| P value**                           | 0.01                 | 0.001                     | -               |
| <b>Abstract norms</b>               |                      |                           |                 |
| Before intervention                 | 67.10±29.50          | 68.10±23.10               | 0.821           |
| After intervention                  | 67.50±24.50          | 76.70±13.90               | 0.005           |
| P value**                           | 0.54                 | 0.001                     | -               |
| <b>Perceived behavioral control</b> |                      |                           |                 |
| Before intervention                 | 55.50±18.10          | 59.80±18.10               | 0.145           |
| After intervention                  | 59.30±18.70          | 64.66±14.70               | 0.05            |
| P value**                           | 0.09                 | 0.03                      | -               |
| <b>Behavioral intention</b>         |                      |                           |                 |
| Before intervention                 | 51.70±30.70          | 51.00±27.90               | 0.890           |
| After intervention                  | 56.30±23.40          | 74.10±17.30               | 0.004           |
| P value**                           | 0.08                 | 0.001                     | -               |

\* Independent t-test; \*\* Paired t-test