**Supplementary Table S1. Prevalence polypharmacy without vitamins among pre-diabetics and diabetics population**

| | Pre-diabetes population | | Diabetic population | |
|---|---|---|---|---|
| **Polypharmacy** | **≥ 3** | **≥ 5** | **≥ 3** | **≥ 5** |
| | % (95% CI) | % (95% CI) | % (95% CI) | % (95% CI) |
| Total | 25.89 (22.13, 30.03) | 9.09 (6.87, 11.93) | 48.48 (43.25, 53.75) | 25.31 (20.94, 30.25) |
| Age | | | | |
| < 60 | 21.87 (17.15, 27.45) | 6.07 (3.72, 9.77) | 39.31 (31.57, 47.63) | 16.65 (11.33, 23.80) |
| ≥ 60 | 30.23 (24.61, 36.52) | 12.35 (8.79, 17.08) | 54.62 (47.89, 61.17) | 31.10 (25.07, 37.85) |
| Sex | | | | |
| Female | 29.43 (24.14, 35.34) | 9.22 (6.31, 13.29) | 49.64 (42.90, 56.39) | 27.69 (21.95, 34.27) |
| Male | 22.15 (17.10, 28.19) | 8.96 (5.90, 13.36) | 46.95 (38.79, 55.28) | 22.18 (15.90, 30.04) |
| BMI [kg/(m)$^2$] | | | | |
| < 25 | 14.64 (9.86, 21.21) | 5.09 (2.75, 9.22) | 45.75 (34.28, 57.69) | 20.36 (12.23, 31.93) |
| 25-30 | 26.78 (21.15, 33.27) | 11.72 (7.91, 17.02) | 43.18 (34.83, 51.94) | 21.77 (15.25, 30.08) |
| > 30 | 34.65 (27.17, 42.98) | 8.39 (5.22, 13.22) | 54.84 (46.93, 62.52) | 31.21 (24.29, 39.08) |
| Waist (cm) | | | | |
| < 95 | 22.72 (17.18, 29.41) | 7.90 (4.85, 12.62) | 44.81 (34.53, 55.56) | 16.09 (9.78, 25.33) |
| ≥ 95 | 28.02 (23.14, 33.47) | 9.89 (7.02, 13.77) | 49.84 (43.81, 55.87) | 28.72 (23.43, 34.66) |
| Residential area | | | | |
| Rural | 22.77 (16.63, 30.36) | 7.11 (4.09, 12.08) | 38.02 (28.51, 48.54) | 20.17 (13.20, 29.56) |
| Urban | 27.06 (22.55, 32.10) | 9.84 (7.12, 13.44) | 51.80 (45.76, 57.79) | 26.94 (21.78, 32.82) |
| Wealth index | | | | |
| 0 (lowest) | 23.71 (17.97, 30.61) | 10.50 (6.73, 16.01) | 43.28 (34.78, 52.20) | 22.02 (15.61, 30.13) |
| 1 | 26.29 (19.98, 33.76) | 7.90 (4.42, 13.76) | 51.23 (42.15, 60.23) | 27.60 (19.97, 36.79) |
| 2 (highest) | 27.77 (21.11, 35.59) | 8.88 (5.70, 13.59) | 51.01 (41.74, 60.21) | 26.26 (18.82, 35.37) |
| Employment status | | | | |
| Unemployed | 28.44 (24.08, 33.23) | 11.17 (8.29, 14.89) | 51.92 (45.97, 57.82) | 27.58 (22.51, 33.31) |
| Employed | 19.00 (12.30, 28.17) | 3.46 (1.67, 7.03) | 35.28 (25.64, 46.30) | 16.59 (9.68, 26.96) |
| Marital status | | | | |
| Single | 23.79 (15.52, 34.66) | 10.49 (5.87, 18.06) | 50.68 (38.58, 62.71) | 28.37 (18.43, 440.98) |
| Married | 26.24 (22.16, 30.79) | 8.85 (6.45, 12.03) | 47.96 (42.20, 53.79) | 24.59 (19.86, 30.03) |
| Years of schooling (years) | | | | |
| ≤ 6 | 26.05 (21.40, 31.29) | 10.69 (7.75, 14.57) | 49.78 (43.20, 56.37) | 29.59 (23.72, 36.22) |
| 7-11 | 23.50 (14.40, 35.94) | 6.29 (2.73, 13.82) | 38.76 (26.13, 53.11) | 13.36 (6.63, 25.10) |
| ≥ 12 | 26.93 (19.69, 35.64) | 7.39 (3.65, 14.39) | 50.62 (39.84, 61.35) | 21.10 (13.75, 30.97) |
| Alcohol consumption during past 12 months | | | | |
| No | 26.35 (22.53, 30.56) | 9.30 (7.04, 12.21) | 48.82 (43.52, 54.15) | 25.39 (20.97, 30.40) |
| Yes | 6.02 (0.80, 33.82) | 0 | 35.63 (12.16, 68.86) | 22.08 (4.66, 62.18) |
| Current smoking | | | | |
| No | 27.09 (23.02, 31.59) | 8.94 (6.73, 11.78) | 49.15 (43.60, 54.72) | 25.04 (20.45, 30.27) |
| Yes | 18.31 (10.24, 30.57) | 10.06 (3.86, 23.73) | 43.04 (28.56, 58.82) | 27.52 (15.44, 44.13) |
| Physical activity | | | | |
| < 150 min/week | 30.58 (25.10, 36.67) | 11.99 (8.74, 16.24) | 49.91 (43.35, 56.48) | 28.64 (22.97, 35.07) |
| ≥ 150 min/week | 20.69 (15.99, 26.33) | 5.88 (3.32, 10.21) | 45.89 (37.34, 54.69) | 19.28 (13.23, 27.22) |
| Multiple long-term Conditions | | | | |
| No disease | 11.55 (7.73, 16.92) | 3.59 (1.91, 6.65) | 35.30 (25.14, 47.00) | 10.50 (5.03, 20.63) |
| One disease | 26.77 (21.25, 33.14) | 8.42 (5.35, 13.02) | 41.31 (33.42, 49.68) | 20.43 (14.54, 27.91) |
| Two or more diseases | 55.86 (45.43, 65.80) | 22.78 (15.10, 32.85) | 63.50 (54.88, 71.33) | 38.77 (30.71, 47.50) |

CI, confidence interval; BMI, body mass index.

**Table S3. Five most common therapeutic drug groups used by patients with diabetes and pre-diabetes**

| Drug Group | Pre-diabetes population | Diabetes population | Total |
|---|---|---|---|
| | **% (95% CI)** | **% (95% CI)** | **% (95% CI)** |
| Cardiovascular drugs | 44.90 (40.64, 49.25) | 40.72 (31.81, 43.69) | 42.64 (40.12, 45.19) |
| Musculoskeletal drugs | 14.94 (12.72, 17.48) | 11.51 (9.98, 13.24) | 13.08 (11.75, 14.54) |
| Nervous system drugs | 13.36 (9.44, 18.57) | 5.46 (4.00, 7.41) | 9.08 (9.99, 11.70) |
| Gastrointestinal drugs | 6.05 (4.47, 8.15) | 2.09 (1.38, 3.15) | 3.90 (3.04, 4.99) |
| Vitamins | 3.96 (2.76, 5.66) | 2.82 (2.03, 3.90) | 3.34 (2.61, 4.27) |

CI, confidence interval. The percentages presented in this table are column-wise.

**Supplementary Table S2. Cumulative prevalence of medication use without vitamins among individuals with normal blood glucose, pre-diabetes, and diabetes**

| | Number of medication use | |
|---|---|---|
| | Pre-diabetes population | Diabetic population |
| | % (95% CI) | % (95% CI) |
| **Mean** | 1.47 (1.29, 1.65) | 2.82 (2.56, 3.09) |
| **0** | 49.46 (45.10, 53.82) | 23.97 (19.97, 28.48) |
| **≥ 1** | 50.54 (46.18, 54.90) | 76.03 (71.52, 80.03) |
| **≥ 2** | 36.04 (31.93, 40.36) | 63.88 (58.81, 68.66) |
| **≥ 3** | 25.91 (22.18, 30.02) | 48.46 (43.26, 53.70) |
| **≥ 4** | 15.20 (12.34, 18.59) | 34.03 (29.13, 39.29) |
| **≥ 5** | 9.26 (7.04, 12,09) | 25.21 (20.87, 30.12) |
| **≥ 6** | 5.15 (3.43, 7.66) | 15.40 (12.01, 19.53) |
| **≥ 7** | 2.58 (1.51, 4.38) | 7.99 (5.60, 11.27) |
| **≥ 8** | 1.05 (0.04, 2.92) | 5.12 (3.26, 7.93) |
| **≥ 9** | 0.85 (0.25, 2.87) | 2.37 (1.21, 4.58) |
| **≥ 10** | 0.21 (0.00, 1.46) | 1.50 (0.62, 3.63) |

CI, confidence interval.