**Supplemental Table 1: Variables information on the Questionnaire.**

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| **No** | **Name of variables** | **Definitions or description** |
| 1 | Source of cases | 1 = Screening cases; 2 = Inpatient cases;  3 = Outpatient cases; 4 = Household cases |
| 2 | Gender | 1 = Male; 2 = Female |
| 3 | Ages (Years) | 1 = 23–45; 2 = 46–65; 3 = >65 |
| 4 | Body-mass index (BMI) | Body weight (kg) divided by height (m) squared, classified into four categories.  0 = average weight (18.5–23.9 kg/m2);  1 = underweight (<18.5 kg/m2); 2 = overweight (24.0–27.9 kg/m2); 3 = obese (≥28.0 kg/m2) |
| 5 | Marital status | 1 = Married; 2 = Divorced; 3 = Widowed; 4 = Single |
| 6 | Smoking history | 0 = No smokers (never smokers or smoking index <100); 1 = Current smokers (more than one cigarette a day, continuous or accumulated for 6 months, and smoking index ≥ 100); 2 = Former smokers (ever smokers but already quit smoking more than six consecutive months) |
| 7 | Smoking index | Cigarettes smoked per day (CPD) × years of tobacco use, classified into four categories.  1 = < 100; 2 = 100-199; 3 = 200-399; 4 => 399 |
| 8 | Age starting smoking | 0 = never smokers; 1 => 27; 2 = 24–27;  3 = 20–23; 4 = 16–19; 5 =< 16 |
| 9 | Alcohol intake | 0 = No drinkers; 1 = Current drinkers (more than 1 time a week, continuous or accumulated for 6 months); 2 = Former drinkers (often drink alcohol before, now abstain from alcohol) |
| 10 | Often eat eggs | 0 = No; 1 = Yes (eat every day or once a few days ) |
| 11 | Often eat fruits | 0 = No; 1 = Yes (eat every day or once a few days ) |
| 12 | Region | 1 = Eastern; 2 = Central;  3 = Western; 4 = Northeastern  Eastern includes 7 provinces, municipalities: Beijing, Hebei, Jiangsu, Zhejiang, Fujian, Shandong; Guangdong, Tianjin, Shanghai and Hainan were not surveyed. Central includes 6 provinces: Shanxi, Anhui, Jiangxi, Henan, Hubei and Hunan. Western includes 11 provinces, autonomous regions, municipalities: Inner Mongolia, Guangxi, Chongqing, Sichuan, Guizhou, Yunnan, Shaanxi, Gansu, Qinghai, Ningxia; Xinjiang and Tibet were not surveyed. Northeastern includes 3 provinces: Liaoning, Jilin, Heilongjiang. |
| 13 | Education level | 1 = Illiterate or semiliterate; 2 = Elementary education; 3 = Intermediate school; 4 = Senior high school or higher; 5 = Others |
| 14 | Annual personal income per capita (Yuan) | 1 =≤ 1000; 2 = 1001–5000; 3 = 5001–30000;  4 = 30001–40000; 5 => 40000 |
| 15 | Annual family income per capita (Yuan) | 1 =≤ 20000; 2 = 20001–39000; 3 = 39001–60000;  4 => 60000 |
| 16 | Birthplace | 1 = Rural area; 2 = Urban area |
| 17 | Residence | 1 = Rural area; 2 = Urban area |
| 18 | Kinds of work units | 1 = State-owned enterprise; 2 = Collectively-owned business; 3 = Private enterprise; 4 = Others |
| 19 | Current employment status | 1 = Retire; 2 = Unemployment; 3 = Temporary employment; 4 = Long-term employment; 5 = Others |
| 20 | Dust exposure in mining | 0 = No; 1 = Yes |
| 21 | Dust exposure in construction | 0 = No; 1 = Yes |
| 22 | Dust exposure in stone processing | 0 = No; 1 = Yes |
| 23 | Accumulated dust exposure time (years) | 1 => 34; 2 = 30–34; 3 = 25–29; 4 = 20–24; 5 = 15–19; 6 = 10–14; 7 = 5–9; 8 =< 5 |
| 24 | Workplace ventilation | 1 = Good; 2 = Average; 3 = Poor; 4 = Unclear |
| 25 | Residence ventilation | 1 = Good; 2 = Average; 3 = Poor; 4 = Unclear |
| 26 | Work-Related Injury Insurance (WRII) | 0 = No; 1 = Yes |
| 27 | Urban Resident Basic Medical Insurance (URBMI) | 0 = No; 1 = Yes |
| 28 | New Rural Cooperative Medical Scheme (NCMS) | 0 = No; 1 = Yes |
| 29 | Urban Employee Basic Medical Insurance (UEBMI) | 0 = No; 1 = Yes |
| 30 | Pulmonary tuberculosis(PTB) | 0 = No; 1 = Yes |
| 31 | History of close contact with PTB in hospital | 0 = No; 1 = Yes |
| 32 | History of close contact with PTB in household | 0 = No; 1 = Yes |
| 33 | History of close contact with PTB in workplace or residential district | Contact with co-workers in workplace or neighbors in residential district.  0 = No; 1 = Yes |
| 34 | Bacille Calmette-Guérin (BCG) history | Vaccinated with BCG, you can check the scars in your arm.  0 = No; 1 = Yes |
| 35 | Type of pneumoconiosis | 0 = Others; 1 = Silicosis;  2 = Coal worker’s pneumoconiosis (CWP) |
| 36 | Stages of pneumoconiosis | 1 = StageⅠ; 2 = StageⅡ; 3 = StageⅢ;  4 = Clinical cases (no classified stage) |
| 37 | Lung bulla or pneumothorax | 0 = No; 1 = Yes |
| 38 | Number of acute exacerbation | 0 = 0; 1 = 1–2; 2 = 3–5; 3 = >5 |
| 39 | History of drug using for treatment of pneumoconiosis | Often use drugs for treatment of pneumoconiosis, such as immunity enhancing drugs, anti-inflammatory and anti-infection drugs, phlegm relieving cough drugs, special treatment of pneumoconiosis drugs, drugs activating blood stasis and improving circulation, hormone therapy, the others.  0 = No or occasionally use; 1 = Usually |
| 40 | History of using immune-enhancing drugs | Use immune-enhancing drugs for the treatment of pneumoconiosis and its complication.  0 = No; 1 = Yes |
| 41 | History of using hormone therapy for pneumoconiosis | 0 = No; 1 = Yes |
| 42 | Formerly hospitalized | 0 = No; 1 = Yes |
| 43 | Season for survey | 1 = Spring; 2 = Summer; 3 = Autumn; 4 = Winter |

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| **Supplementary Table 2: The rest of demographics of patients with pneumoconiosis from 27 provinces of China, and risk factors and social determinations for PTB, by pneumoconiosis stage.** | | | | | | | | | | | | | | | | | | | |
| **Items** | **Total**  **(*n*=10137)** | |  | **No PTB**  **(*n*=9375)** | |  | **Case stage Ⅰ with PTB (*n*=175)** | |  | **Case stage Ⅱ with PTB (*n*=193)** | |  | **Case stage Ⅲ with PTB (*n*=269)** | |  | **Clinical case with PTB (*n*=125)** | |  | ***P* for difference** |
| **Proportion of participants** | 100% | |  | 92.5% | |  | 1.7% | |  | 1.9% | |  | 2.7% | |  | 1.2% | |  |  |
| **Age (years)** | 57.9±0.1 | |  | 57.9±0.1 | |  | 62.3±1.0 | |  | 58.6±0.9 | |  | 54. 8±0.7 | |  | 55.9±0.8 | |  |  |
| 23-45 years | 1232 | (12.2) |  | 1133 | (12.1) |  | 17 | (9.7) |  | 23 | (11.9) |  | 46 | (17.1) |  | 13 | (10.4) |  | 0.738 |
| 46-65 years | 6328 | (62.4) |  | 5854 | (62.4) |  | 84 | (48.0) |  | 118 | (61.1) |  | 181 | (67.3) |  | 91 | (72.8) |  |  |
| >65 years | 2577 | (25.4) |  | 2388 | (25.5) |  | 74 | (42.3) |  | 52 | (26.9) |  | 42 | (15.6) |  | 21 | (16.8) |  |  |
| **Marital status** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Married | 9363 | (92.4) |  | 8689 | (92.7) |  | 135 | (77.1) |  | 177 | (91.7) |  | 244 | (90.7) |  | 118 | (94.4) |  | <0.001 |
| Divorced | 190 | (1.9) |  | 164 | (1.7) |  | 10 | (5.7) |  | 5 | (2.6) |  | 7 | (2.6) |  | 4 | (3.2) |  |  |
| Widowed | 479 | (4.7) |  | 435 | (4.6) |  | 27 | (15.4) |  | 6 | (3.1) |  | 9 | (3.3) |  | 2 | (1.6) |  |  |
| Single | 105 | (1.0) |  | 87 | (0.9) |  | 3 | (1.7) |  | 5 | (2.6) |  | 9 | (3.3) |  | 1 | (0.8) |  |  |
| **Smoking history** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Non-smokers | 4936 | (48.7) |  | 4633 | (49.4) |  | 96 | (54.9) |  | 75 | (38.9) |  | 99 | (36.8) |  | 33 | (26.4) |  | <0.001 |
| Current smokers | 2267 | (22.4) |  | 2126 | (22.7) |  | 30 | (17.1) |  | 43 | (22.3) |  | 36 | (13.4) |  | 32 | (25.6) |  |  |
| Former smokers | 2934 | (28.9) |  | 2616 | (27.9) |  | 49 | (28.0) |  | 75 | (38.9) |  | 143 | (49.8) |  | 60 | (48.0) |  |  |
| **Age starting smoking** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| >27 years | 1219 | (12.0) |  | 1144 | (12.2) |  | 19 | (10.9) |  | 20 | (10.4) |  | 26 | (9.7) |  | 10 | (8.0) |  | <0.001 |
| 24–27 years | 898 | (8.9) |  | 831 | (8.9) |  | 13 | (7.4) |  | 17 | (8.8) |  | 19 | (7.1) |  | 18 | (14.4) |  |  |
| 20–23 years | 2497 | (24.6) |  | 2306 | (24.6) |  | 32 | (18.3) |  | 52 | (26.9) |  | 71 | (26.4) |  | 36 | (28.8) |  |  |
| 16–19 years | 1427 | (14.1) |  | 1295 | (13.8) |  | 21 | (12.0) |  | 35 | (18.1) |  | 51 | (19.0) |  | 25 | (20.0) |  |  |
| <16 years | 548 | (5.4) |  | 484 | (5.2) |  | 7 | (4.0) |  | 11 | (5.7) |  | 31 | (11.5) |  | 15 | (12.0) |  |  |
| Never smokers | 3548 | (35.0) |  | 3315 | (35.4) |  | 83 | (47.4) |  | 58 | (30.1) |  | 71 | (26.4) |  | 21 | (16.8) |  |  |
| **Often eat eggs** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Yes | 6863 | (67.7) |  | 6350 | (67.7) |  | 133 | (76.0) |  | 131 | (67.9) |  | 160 | (59.5) |  | 89 | (71.2) |  | <0.001 |
| No | 2024 | (20.0) |  | 1839 | (19.6) |  | 29 | (16.6) |  | 40 | (20.7) |  | 89 | (33.1) |  | 27 | (21.6) |  |  |
| Missing | 1250 | (12.3) |  | 1186 | (12.7) |  | 13 | (7.4) |  | 22 | (11.4) |  | 20 | (7.4) |  | 89 | (71.2) |  |  |
| **Often eat fruits** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Yes | 6087 | (60.0) |  | 5637 | (60.1) |  | 116 | (66.3) |  | 114 | (59.1) |  | 146 | (54.3) |  | 74 | (59.2) |  | <0.001 |
| No | 2804 | (27.7) |  | 2557 | (27.3) |  | 48 | (27.4) |  | 54 | (28.0) |  | 103 | (38.3) |  | 42 | (33.6) |  |  |
| Missing | 1246 | (12.3) |  | 1181 | (12.6) |  | 11 | (6.3) |  | 25 | (13.0) |  | 20 | (7.4) |  | 9 | (7.2) |  |  |
| **Socioeconomic factors** | | | | | | | | | | | | | | | | | | | |
| **Education level** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Illiterate or semiliterate | 1060 | (10.5) |  | 980 | (10.5) |  | 23 | (13.1) |  | 26 | (13.5) |  | 21 | (7.8) |  | 10 | (8.0) |  | <0.001 |
| Elementary school | 4385 | (43.3) |  | 3983 | (42.5) |  | 75 | (42.9) |  | 95 | (49.2) |  | 156 | (58.0) |  | 76 | (60.8) |  |  |
| Intermediate school | 3599 | (35.5) |  | 3368 | (35.9) |  | 61 | (34.9) |  | 59 | (30.6) |  | 79 | (29.4) |  | 32 | (25.6) |  |  |
| Senior high school or higher | 930 | (9.2) |  | 886 | (9.5) |  | 15 | (8.6) |  | 12 | (6.2) |  | 12 | (4.5) |  | 5 | (4.0) |  |  |
| Others | 163 | (1.6) |  | 158 | (1.7) |  | 1 | (0.6) |  | 1 | (0.5) |  | 1 | (0.4) |  | 2 | (1.6) |  |  |
| **Annual personal income per capita** | | | | | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| ≤ 1000 Yuan | 1502 | (14.8) |  | 1315 | (14.0) |  | 21 | (12.0) |  | 35 | (18.1) |  | 106 | (39.4) |  | 25 | (20.0) |  | <0.001 |
| 1001-5000 Yuan | 1026 | (10.1) |  | 921 | (9.8) |  | 14 | (8.0) |  | 30 | (15.5) |  | 48 | (17.8) |  | 13 | (10.4) |  |  |
| 5001-30000 Yuan | 3036 | (29.9) |  | 2828 | (30.2) |  | 54 | (30.9) |  | 59 | (30.6) |  | 58 | (21.6) |  | 37 | (29.6) |  |  |
| 30001-40000 Yuan | 1624 | (16.0) |  | 1546 | (16.5) |  | 36 | (20.6) |  | 23 | (11.9) |  | 11 | (4.1) |  | 8 | (6.4) |  |  |
| > 40000 Yuan | 2363 | (23.3) |  | 2244 | (23.9) |  | 42 | (24.0) |  | 37 | (19.2) |  | 27 | (10.0) |  | 13 | (10.4) |  |  |
| Missing | 586 | (5.8) |  | 521 | (5.6) |  | 8 | (4.6) |  | 9 | (4.7) |  | 19 | (7.1) |  | 29 | (23.2) |  |  |
| **Annual family income per capita** | | | | | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| ≤20000 Yuan | 2612 | (25.8) |  | 2331 | (24.9) |  | 39 | (22.3) |  | 65 | (33.7) |  | 138 | (51.3) |  | 39 | (31.2) |  | <0.001 |
| 20001-39000 Yuan | 2035 | (20.1) |  | 1896 | (20.2) |  | 37 | (21.1) |  | 42 | (21.8) |  | 39 | (14.5) |  | 21 | (16.8) |  |  |
| 39001-60000 Yuan | 2859 | (28.2) |  | 2686 | (28.7) |  | 51 | (29.1) |  | 43 | (22.3) |  | 40 | (14.9) |  | 30 | (24.0) |  |  |
| >60000 Yuan | 1772 | (17.5) |  | 1674 | (17.9) |  | 32 | (18.3) |  | 29 | (15.0) |  | 20 | (7.4) |  | 17 | (13.6) |  |  |
| Missing | 859 | (8.5) |  | 788 | (8.4) |  | 16 | (9.1) |  | 14 | (7.3) |  | 23 | (8.6) |  | 18 | (14.4) |  |  |
| **Working and living environment** | | | | | | | | | | | | | | | | | | | |
| **Kinds of work units** | | | | | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| State-owned enterprise | 4802 | (47.4) |  | 4555 | (48.6) |  | 106 | (60.6) |  | 74 | (38.3) |  | 49 | (18.2) |  | 18 | (14.4) |  | <0.001 |
| Collectively-owned business | 879 | (8.7) |  | 820 | (8.7) |  | 13 | (7.4) |  | 17 | (8.8) |  | 24 | (8.9) |  | 5 | (4.0) |  |  |
| Private enterprise | 3733 | (36.8) |  | 3334 | (35.6) |  | 50 | (28.6) |  | 91 | (47.2) |  | 178 | (66.2) |  | 80 | (64.0) |  |  |
| Others | 723 | (7.1) |  | 666 | (7.1) |  | 6 | (3.4) |  | 11 | (5.7) |  | 18 | (6.7) |  | 22 | (17.6) |  |  |
| **Dust exposure in mining** | 7084 | (69.9) |  | 6539 | (69.7) |  | 118 | (67.4) |  | 141 | (73.1) |  | 214 | (79.6) |  | 72 | (57.6) |  | 0.162 |
| **Dust exposure in construction** | 1033 | (10.2) |  | 910 | (9.7) |  | 19 | (10.9) |  | 26 | (13.5) |  | 35 | (13.0) |  | 43 | (34.4) |  | <0.001 |
| **Dust exposure in stone processing** | 195 | (1.9) |  | 167 | (1.8) |  | 4 | (2.3) |  | 7 | (3.6) |  | 10 | (3.7) |  | 7 | (5.6) |  | 0.001 |
| **Accumulated dust exposure time** | | | | | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| > 34 years | 691 | (6.8) |  | 650 | (6.9) |  | 12 | (6.9) |  | 7 | (3.6) |  | 12 | (4.5) |  | 10 | (8.0) |  | 0.013 |
| 30–34 years | 1418 | (14.0) |  | 1325 | (14.1) |  | 37 | (21.1) |  | 20 | (10.4) |  | 26 | (9.7) |  | 10 | (8.0) |  |  |
| 25–29 years | 1227 | (12.1) |  | 1148 | (12.2) |  | 24 | (13.7) |  | 23 | (11.9) |  | 27 | (10.0) |  | 5 | (4.0) |  |  |
| 20–24 years | 1920 | (18.9) |  | 1791 | (19.1) |  | 24 | (13.7) |  | 36 | (18.7) |  | 49 | (18.2) |  | 20 | (16.0) |  |  |
| 15–19 years | 1391 | (13.7) |  | 1276 | (13.6) |  | 18 | (10.3) |  | 33 | (17.1) |  | 47 | (17.5) |  | 17 | (13.6) |  |  |
| 10–14 years | 1648 | (16.3) |  | 1508 | (16.1) |  | 25 | (14.3) |  | 38 | (19.7) |  | 52 | (19.3) |  | 25 | (20.0) |  |  |
| 5–9 years | 1263 | (12.5) |  | 1154 | (12.3) |  | 23 | (13.1) |  | 22 | (11.4) |  | 40 | (14.9) |  | 24 | (19.2) |  |  |
| < 5 years | 579 | (5.7) |  | 523 | (5.6) |  | 12 | (6.9) |  | 14 | (7.3) |  | 16 | (5.9) |  | 14 | (11.2) |  |  |
| **Workplace ventilation** | | | | | |  |  |  |  |  |  |  |  |  |  |  |  |  | 0.001 |
| Good | 1224 | (12.1) |  | 1115 | (11.9) |  | 17 | (9.7) |  | 31 | (16.1) |  | 29 | (10.8) |  | 32 | (25.6) |  |  |
| Average | 2828 | (27.9) |  | 2660 | (28.4) |  | 68 | (38.9) |  | 30 | (15.5) |  | 33 | (12.3) |  | 37 | (29.6) |  |  |
| Poor | 5678 | (56.0) |  | 5220 | (55.7) |  | 82 | (46.9) |  | 123 | (63.7) |  | 200 | (74.3) |  | 53 | (42.4) |  |  |
| Unclear | 407 | (4.0) |  | 380 | (4.1) |  | 8 | (4.6) |  | 9 | (4.7) |  | 7 | (2.6) |  | 3 | (2.4) |  |  |
| **Residence ventilation** | | | | | |  |  |  |  |  |  |  |  |  |  |  |  |  | <0.001 |
| Good | 4736 | (46.7) |  | 4404 | (47.0) |  | 88 | (50.3) |  | 73 | (37.8) |  | 110 | (40.9) |  | 61 | (48.8) |  |  |
| Average | 3718 | (36.7) |  | 3458 | (36.9) |  | 57 | (32.6) |  | 69 | (35.8) |  | 89 | (33.1) |  | 45 | (36.0) |  |  |
| Poor | 1256 | (12.4) |  | 1119 | (11.9) |  | 22 | (12.6) |  | 40 | (20.7) |  | 62 | (23.0) |  | 13 | (10.4) |  |  |
| Unclear | 427 | (4.2) |  | 394 | (4.2) |  | 8 | (4.6) |  | 11 | (5.7) |  | 8 | (3.0) |  | 6 | (4.8) |  |  |
| **Social security** | | | | | | | | | | | | | | | | | | | |
| **URBMI** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 0.197 |
| Yes | 554 | (5.5) |  | 518 | (5.5) |  | 12 | (6.9) |  | 9 | (4.7) |  | 11 | (4.1) |  | 4 | (3.2) |  |  |
| No | 9583 | (94.5) |  | 8857 | (94.5) |  | 163 | (93.1) |  | 184 | (95.3) |  | 258 | (95.9) |  | 121 | (96.8) |  |  |
| **NCMS** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | <0.001 |
| Yes | 4796 | (47.3) |  | 4296 | (45.8) |  | 63 | (36.0) |  | 109 | (56.5) |  | 216 | (80.3) |  | 112 | (89.6) |  |  |
| No | 5341 | (52.7) |  | 5079 | (54.2) |  | 112 | (64.0) |  | 84 | (43.5) |  | 53 | (19.7) |  | 13 | (10.4) |  |  |
| **UEBMI** | 945 | (9.3) |  | 820 | (8.7) |  | 0 | (0) |  | 0 | (0) |  | 0 | (0) |  | 0 | (0) |  | <0.001 |
| Yes | 4517 | (44.6) |  | 4298 | (45.8) |  | 105 | (60.0) |  | 68 | (35.2) |  | 39 | (14.5) |  | 7 | (5.6) |  |  |
| No | 5620 | (55.4) |  | 5077 | (54.2) |  | 70 | (40.0) |  | 125 | (64.8) |  | 230 | (85.5) |  | 118 | (94.4) |  |  |
| **Disease and treatment conditions** | | | | | | | | | | | | | | | | | | | |
| **Number of acute exacerbation** | | | | | |  |  |  |  |  |  |  |  |  |  |  |  |  | 0.001 |
| 0 | 1092 | (10.8) |  | 1049 | (11.2) |  | 15 | (8.6) |  | 11 | (5.7) |  | 17 | (6.3) |  | 0 | (0) |  |  |
| 1–2 | 3053 | (30.1) |  | 2833 | (30.2) |  | 46 | (26.3) |  | 50 | (25.9) |  | 69 | (25.7) |  | 55 | (44.0) |  |  |
| 3–5 | 2510 | (24.8) |  | 2279 | (24.3) |  | 48 | (27.4) |  | 64 | (33.2) |  | 98 | (36.4) |  | 21 | (16.8) |  |  |
| > 5 | 1077 | (10.6) |  | 963 | (10.3) |  | 23 | (13.1) |  | 30 | (15.5) |  | 51 | (19.0) |  | 10 | (8.0) |  |  |
| missing | 2405 | (23.7) |  | 2251 | (24.0) |  | 43 | (24.6) |  | 38 | (19.7) |  | 34 | (12.6) |  | 39 | (31.2) |  |  |
| **History of drug using for treatment of pneumoconiosis** | | | | | |  |  |  |  |  |  |  |  |  |  |  |  |  | 0.001 |
| No or occasional use | 5540 | (54.7) |  | 5212 | (55.6) |  | 85 | (48.6) |  | 83 | (43.0) |  | 88 | (32.7) |  | 72 | (57.6) |  |  |
| Usual use | 4597 | (45.3) |  | 4163 | (44.4) |  | 90 | (51.4) |  | 110 | (57.0) |  | 181 | (67.3) |  | 53 | (42.4) |  |  |
| **History of using immune-enhancing drugs** | | | | | |  |  |  |  |  |  |  |  |  |  |  |  |  | 0.001 |
| Yes | 1643 | (16.2) |  | 1469 | (15.7) |  | 33 | (18.9) |  | 50 | (25.9) |  | 76 | (28.3) |  | 15 | (12.0) |  |  |
| No | 8494 | (83.8) |  | 7906 | (84.3) |  | 142 | (81.1) |  | 143 | (74.1) |  | 193 | (71.7) |  | 110 | (88.0) |  |  |
| Formerly hospitalized |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 0.001 |
| Yes | 7480 | (73.8) |  | 6824 | (72.8) |  | 136 | (77.7) |  | 174 | (90.2) |  | 233 | (86.6) |  | 113 | (90.4) |  |  |
| No | 2657 | (26.2) |  | 2551 | (27.2) |  | 39 | (22.3) |  | 19 | (9.8) |  | 36 | (13.4) |  | 12 | (9.6) |  |  |

Data are expressed as number (%) or mean±standard deviation. NCMS: New Rural Cooperative Medical Scheme; PTB: Pulmonary tuberculosis; SE: Standard error; UEBMI: Urban Employee Basic Medical Insurance; URBMI: Urban Resident Basic Medical Insurance.

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Supplementary Table 3: The rest of prevalence and ORs for PTB with risk factors and social determinants in patients with pneumoconiosis from 27 provinces of China, by rural and urban residence.** | | | | | | | | | | | | |
| **Items** | **Prevalence (%) in patients (95% CI)** | | | | | | | |  | **OR** | **95% CI** | ***P*** |
|  | **Living in rural** | |  | **Living in urban** | |  | **Total** | |  |
| **Sex** |  |  |  |  |  |  |  |  |  |  |  |  |
| Male | 9.0 | (8.3–9.7) |  | 5.7 | (5.0–6.4) |  | 7.6 | (7.1–8.1) |  | 1.00 | (ref) |  |
| Female | 7.1 | (1.1–13.2) |  | 4.7 | (1.7–7.7) |  | 5.3 | (2.6–8.1) |  | 0.69 | (0.40–1.19) | 0.180 |
| *P* for difference | <0.001 | |  | <0.001 | |  | <0.001 | |  |  |  |  |
| **Age** |  |  |  |  |  |  |  |  |  |  |  |  |
| 23–45 years | 8.8 | (6.9–10.6) |  | 6.3 | (3.8–8.8) |  | 8.0 | (6.5–9.6) |  | 1.00 | (ref) |  |
| 46–65 years | 9.2 | (8.3–10.1) |  | 4.5 | (3.7–5.4) |  | 7.5 | (6.8–8.1) |  | 0.93 | (0.74–1.16) | 0.508 |
| > 65 years | 8.1 | (6.3–9.9) |  | 7.0 | (5.8–8.2) |  | 7.3 | (6.3–8.3) |  | 0.91 | (0.70–1.17) | 0.444 |
| *P* for trend | 0.600 | |  | <0.001 | |  | 0.500 | |  |  |  |  |
| **Marital status** |  |  |  |  |  |  |  |  |  |  |  |  |
| Married | 8.8 | (8.0–9.5) |  | 5.1 | (4.5–5.8) |  | 7.2 | (6.7–7.7) |  | 1.00 | (ref) |  |
| Divorced | 11.7 | (6.1–17.3) |  | 17.7 | (8.2–27.3) |  | 13.7 | (8.8–18.6) |  | 2.04 | (1.34–3.11) | <0.001 |
| Widowed | 9.8 | (5.4–14.2) |  | 8.9 | (5.7–12.0) |  | 9.2 | (6.6–11.8) |  | 1.30 | (0.95–1.80) | 0.100 |
| Single | 17.2 | (9.3–25.2) |  | 16.7 | (0.0–33.9) |  | 17.1 | (9.9–24.4) |  | 2.67 | (1.60–4.46) | <0.001 |
| *P* for difference | <0.001 | |  | <0.001 | |  | <0.001 | |  |  |  |  |
| **Smoking history** |  |  |  |  |  |  |  |  |  |  |  |  |
| Non-smokers | 6.9 | (5.9–7.8) |  | 5.3 | (4.4–6.2) |  | 6.1 | (5.5–6.8) |  | 1.00 | (ref) |  |
| Current smokers | 8.1 | (6.6–9.7) |  | 4.0 | (2.9–5.2) |  | 6.2 | (5.2–7.2) |  | 1.01 | (0.83–1.25) | 0.890 |
| Former smokers | 12.4 | (10.9–13.9) |  | 7.9 | (6.3–9.6) |  | 10.8 | (9.7–12.0) |  | 1.86 | (1.58–2.19) | <0.001 |
| *P* for difference | <0.001 | |  | <0.001 | |  | <0.001 | |  |  |  |  |
| **Age started smoking** |  |  |  |  |  |  |  |  |  |  |  |  |
| > 27 years | 7.3 | (5.4–9.1) |  | 4.5 | (2.7–6.3) |  | 6.2 | (4.8–7.5) |  | 1.00 | (ref) |  |
| 24–27 years | 8.2 | (5.9–10.6) |  | 6.3 | (3.8–8.8) |  | 7.5 | (5.7–9.2) |  | 1.23 | (0.84–1.73) | 0.240 |
| 20–23 years | 9.0 | (7.6–10.4) |  | 5.4 | (3.9–6.8) |  | 7.6 | (6.6–8.7) |  | 1.26 | (0.96–1.67) | 0.100 |
| 16–19 years | 11.3 | (9.2–13.5) |  | 6.3 | (4.3–8.3) |  | 9.3 | (7.7–10.8) |  | 1.56 | (1.16–2.09) | <0.001 |
| < 16 years | 15.1 | (11.2–19.0) |  | 7.0 | (3.7–10.2) |  | 11.7 | (9.0–14.4) |  | 2.02 | (1.42–2.86) | <0.001 |
| Never smokers | 7.6 | (6.4–8.9) |  | 5.5 | (4.5–6.6) |  | 6.6 | (5.8–7.4) |  | 1.07 | (0.82–1.40) | 0.610 |
| *P* for trend | <0.001 | |  | 0.715 | |  | <0.001 | |  |  |  |  |
| **Often eat eggs** |  | |  |  | |  |  | |  |  |  |  |
| Yes | 9.0 | (8.1–10.0) |  | 5.9 | (5.1–6.7) |  | 7.5 | (6.9–8.1) |  | 1.00 | (ref) |  |
| No | 10.2 | (8.7–11.8) |  | 6.1 | (4.0–8.1) |  | 9.1 | (7.9–10.4) |  | 1.24 | (1.04–1.49) | 0.015 |
| Missing | 6.5 | (4.7–8.2) |  | 2.8 | (1.3–4.3) |  | 5.1 | (3.9–6.3) |  | 0.67 | (0.51–0.87) | 0.003 |
| *P* for difference | 0.011 | |  | 0.022 | |  | <0.001 | |  |  |  |  |
| **Often eat fruits** |  |  |  |  |  |  |  |  |  |  |  |  |
| Yes | 9.0 | (8.0–10.0) |  | 5.9 | (5.1–6.8) |  | 7.4 | (6.7–8.1) |  | 1.00 | (ref) |  |
| No | 9.8 | (8.5–11.1) |  | 6.0 | (4.3–7.7) |  | 8.8 | (7.8–9.9) |  | 1.21 | (1.03–1.42) | 0.015 |
| Missing | 6.6 | (4.8–8.4) |  | 3.1 | (1.5–4.6) |  | 5.2 | (4.0–6.5) |  | 0.69 | (0.53–0.90) | 0.003 |
| *P* for difference | 0.032 | |  | 0.032 | |  | <0.001 | |  |  |  |  |
| **Socioeconomic factors** | | | | | | | | | | | | |
| **Education level** |  |  |  |  |  |  |  |  |  |  |  |  |
| Illiterate or semiilliterate | 7.4 | (5.4–9.5) |  | 7.7 | (5.1–10.3) |  | 7.5 | (6.0–9.1) |  | 1.00 | (ref) |  |
| Elementary school | 10.1 | (9.0–11.2) |  | 7.3 | (6.0–8.6) |  | 9.2 | (8.3–10.0) |  | 1.24 | (0.96–1.59) | 0.100 |
| Intermediate school | 8.1 | (6.9–9.4) |  | 4.7 | (3.7–5.7) |  | 6.4 | (5.6–7.2) |  | 0.84 | (0.65–1.09) | 0.200 |
| Senior high school or higher | 8.1 | (4.8–11.4) |  | 3.4 | (2.1–4.8) |  | 4.7 | (3.4–6.1) |  | 0.61 | (0.42–0.89) | 0.010 |
| Others | 3.9 | (0.2–7.7) |  | 1.6 | (0.0–4.8) |  | 3.1 | (0.4–5.7) |  | 0.39 | (0.16–0.97) | 0.040 |
| *P* for trend | 0.106 | |  | <0.001 | |  | <0.001 | |  |  |  |  |
| **Annual personal income per capita** | | |  |  |  |  |  |  |  |  |  |  |
| ≤ 1000 Yuan | 12.6 | (10.9–14.4) |  | 10.9 | (5.8–15.9) |  | 12.5 | (10.8–14.1) |  | 2.68 | (2.11–3.41) | <0.001 |
| 1001–5000 Yuan | 10.5 | (8.5–12.5) |  | 8.3 | (3.4–13.2) |  | 10.2 | (8.4–12.1) |  | 2.15 | (1.64–2.83) | <0.001 |
| 5001–30000 Yuan | 7.4 | (6.2–8.5) |  | 5.8 | (4.4–7.3) |  | 6.9 | (6.0–7.7) |  | 1.39 | (1.10–1.75) | 0.006 |
| 30001–40000 Yuan | 4.6 | (2.7–6.5) |  | 4.9 | (3.6–6.1) |  | 4.8 | (3.8–5.8) |  | 0.95 | (0.71–1.28) | 0.739 |
| > 40000 Yuan | 4.1 | (2.5–5.7) |  | 5.3 | (4.3–6.4) |  | 5.0 | (4.2–5.9) |  | 1.00 | (ref) |  |
| *P* for trend | <0.001 | |  | 0.053 | |  | <0.001 | |  |  |  |  |
| **Annual family income per capita** | | |  |  |  |  |  |  |  |  |  |  |
| ≤ 20000 Yuan | 11.0 | (9.7–12.3) |  | 8.7 | (5.6–11.9) |  | 10.8 | (9.6–11.9) |  | 2.06 | (1.62–2.61) | <0.001 |
| 20001–39000 Yuan | 7.5 | (6.0–8.9) |  | 5.8 | (4.2–7.5) |  | 6.8 | (5.7–7.9) |  | 1.25 | (0.96–1.64) | 0.098 |
| 39001–60000 Yuan | 7.1 | (5.6–8.6) |  | 5.4 | (4.3–6.4) |  | 6.1 | (5.2–6.9) |  | 1.10 | (0.85–1.42) | 0.463 |
| > 60000 Yuan | 6.7 | (4.5–8.9) |  | 5.1 | (3.9–6.3) |  | 5.5 | (4.5–6.6) |  | 1.00 | (ref) |  |
| *P* for trend | <0.001 | |  | 0.156 | |  | <0.001 | |  |  |  |  |
| **Working and living environment** | | | | | | | | | | | | |
| **Kinds of work units** |  |  |  |  |  |  |  |  |  |  |  |  |
| State-owned enterprise | 5.9 | (4.6–7.2) |  | 4.9 | (4.2–5.6) |  | 5.1 | (4.5–5.8) |  | 1.00 | (ref) |  |
| Collectively-owned business | 6.9 | (5.0–8.7) |  | 6.2 | (2.8–9.6) |  | 6.7 | (5.1–8.4) |  | 1.33 | (0.99–1.78) | 0.060 |
| Private enterprise | 10.8 | (9.7–11.9) |  | 10.0 | (7.3–12.7) |  | 10.7 | (9.7–11.7) |  | 2.21 | (1.84–2.60) | <0.001 |
| Others | 7.8 | (5.6–10.1) |  | 8.0 | (4.0–12.1) |  | 7.9 | (5.9–9.8) |  | 1.58 | (1.17–2.13) | <0.001 |
| *P* for difference | <0.001 | |  | <0.001 | |  | <0.001 | |  |  |  |  |
| **Engaged in mining** |  |  |  |  |  |  |  |  |  |  |  |  |
| Yes | 9.3 | (8.4–10.1) |  | 5.6 | (4.8–6.4) |  | 7.7 | (7.1–8.3) |  | 1.09 | (0.93–1.28) | 0.310 |
| No | 8.3 | (7.0–9.7) |  | 5.7 | (4.5–6.9) |  | 7.1 | (6.2–8.0) |  | 1.00 | (ref) |  |
| *P* for difference | 0.147 | |  | 0.462 | |  | 0.162 | |  |  |  |  |
| **Engaged in construction** |  |  |  |  |  |  |  |  |  |  |  |  |
| Yes | 14.5 | (11.8–17.2) |  | 7.6 | (4.9–10.2) |  | 11.9 | (9.9–13.9) |  | 1.79 | (1.46–2.20) | <0.001 |
| No | 8.3 | (7.5–9.0) |  | 5.4 | (4.7–6.1) |  | 7.0 | (6.5–7.5) |  | 1.00 | (ref) |  |
| *P* for difference | <0.001 | |  | 0.087 | |  | <0.001 | |  |  |  |  |
| **Stone processing** |  |  |  |  |  |  |  |  |  |  |  |  |
| Yes | 14.0 | (8.4–19.6) |  | 15.6 | (5.0–26.1) |  | 14.4 | (9.4–19.3) |  | 2.10 | (1.40–3.16) | <0.001 |
| No | 8.8 | (8.1–9.6) |  | 5.5 | (4.8–6.2) |  | 7.4 | (6.9–7.9) |  | 1.00 | (ref) |  |
| *P* for difference | 0.029 | |  | 0.004 | |  | <0.001 | |  |  |  |  |
| **Accumulated dust exposure time** | | |  |  |  |  |  |  |  |  |  |  |
| > 34 years | 8.9 | (4.8–12.9) |  | 4.8 | (2.9–6.7) |  | 5.9 | (4.2–7.7) |  | 1.00 | (ref) |  |
| 30–34 years | 7.8 | (5.6–10.1) |  | 5.7 | (4.2–7.3) |  | 6.6 | (5.3–7.8) |  | 1.11 | (0.76–1.63) | 0.580 |
| 25–29 years | 8.9 | (6.4–11.4) |  | 4.7 | (3.2–6.3) |  | 6.4 | (5.1–7.8) |  | 1.09 | (0.74–1.61) | 0.660 |
| 20–24 years | 7.8 | (6.3–9.4) |  | 5.2 | (3.6–6.7) |  | 6.7 | (5.6–7.8) |  | 1.14 | (0.80–1.64) | 0.470 |
| 15–19 years | 9.6 | (7.7–11.6) |  | 6.0 | (4.0–8.1) |  | 8.3 | (6.8–9.7) |  | 1.43 | (0.99–2.07) | 0.060 |
| 10–14 years | 9.8 | (8.1–11.6) |  | 5.5 | (3.5–7.5) |  | 8.5 | (7.1–9.8) |  | 1.47 | (1.03–2.11) | 0.040 |
| 5–9 years | 8.9 | (7.1–10.7) |  | 7.8 | (4.9–10.7) |  | 8.6 | (7.1–10.2) |  | 1.50 | (1.03–2.17) | 0.030 |
| < 5 years | 10.3 | (7.3–13.4) |  | 8.3 | (4.4–12.2) |  | 9.7 | (7.3–12.1) |  | 1.70 | (1.12–2.58) | 0.010 |
| *P* for trend | 0.148 | |  | 0.047 | |  | <0.001 | |  |  |  |  |
| **Workplace ventilation** |  |  |  |  |  |  |  |  |  |  |  |  |
| Good | 11.8 | (9.3–14.2) |  | 5.5 | (3.6–7.4) |  | 8.9 | (7.3–10.5) |  | 1.00 | (ref) |  |
| Average | 6.8 | (5.5–8.1) |  | 5.1 | (3.9–6.2) |  | 5.9 | (5.1–6.8) |  | 0.65 | (0.50–0.83) | <0.001 |
| Poor | 9.4 | (8.4–10.4) |  | 6.1 | (5.1–7.1) |  | 8.1 | (7.4–8.8) |  | 0.90 | (0.72–1.12) | 0.330 |
| Unclear | 8.8 | (5.0–12.5) |  | 4.2 | (1.4–7.1) |  | 6.6 | (4.2–9.1) |  | 0.73 | (0.47–1.13) | 0.150 |
| *P* for difference | 0.002 | |  | 0.472 | |  | 0.001 | |  |  |  |  |
| **Residence ventilation** |  |  |  |  |  |  |  |  |  |  |  |  |
| Good | 8.8 | (7.6–9.9) |  | 5.2 | (4.3–6.1) |  | 7.0 | (6.3–7.7) |  | 1.00 | (ref) |  |
| Average | 8.2 | (7.0–9.3) |  | 5.4 | (4.2–6.5) |  | 7.0 | (6.2–7.8) |  | 1.00 | (0.84–1.18) | 0.980 |
| Poor | 11.2 | (9.1–13.3) |  | 10.2 | (7.1–13.2) |  | 10.9 | (9.2–12.6) |  | 1.62 | (1.32–2.00) | <0.001 |
| Unclear | 10.3 | (6.4–14.3) |  | 4.6 | (1.7–7.6) |  | 7.7 | (5.2–10.3) |  | 1.11 | (0.77–1.61) | 0.580 |
| *P* for difference | 0.049 | |  | 0.001 | |  | <0.001 | |  |  |  |  |
| **Social security** | | | | | | | | | | | | |
| **URBMI** |  |  |  |  |  |  |  |  |  |  |  |  |
| Yes | 4.3 | (3.0–5.5) |  | 5.0 | (4.3–5.7) |  | 4.8 | (4.2–5.5) |  | 1.00 | (ref) |  |
| No | 10.0 | (9.1–10.9) |  | 8.0 | (6.2–9.7) |  | 9.7 | (8.9–10.4) |  | 2.10 | (1.79–2.47) | <0.001 |
| *P* for difference | <0.001 | |  | 0.001 | |  | <0.001 | |  |  |  |  |
| **NCMS** |  |  |  |  |  |  |  |  |  |  |  |  |
| Yes | 10.5 | (9.5–11.4) |  | 10.1 | (7.6–12.6) |  | 10.4 | (9.6–11.3) |  | 1.00 | (ref) |  |
| No | 4.7 | (3.6–5.8) |  | 5.0 | (4.3–5.7) |  | 4.9 | (4.3–5.5) |  | 2.26 | (1.93–2.63) | <0.001 |
| *P* for difference | <0.001 | |  | <0.001 | |  | <0.001 | |  |  |  |  |
| **UEBMI** |  |  |  |  |  |  |  |  |  |  |  |  |
| Yes | 7.3 | (4.4–10.1) |  | 5.5 | (2.6–8.4) |  | 6.5 | (4.4–8.6) |  | 1.00 | (ref) |  |
| No | 9.1 | (8.3–9.8) |  | 5.6 | (4.9–6.3) |  | 7.6 | (7.0–8.1) |  | 1.18 | (0.83–1.67) | 0.350 |
| *P* for difference | 0.158 | |  | 0.534 | |  | 0.197 | |  |  |  |  |
| **Disease and treatment conditions** | | | | | | | | | | | | |
| **Number of acute exacerbation** |  |  |  |  |  |  |  |  |  |  |  |  |
| 0 | 5.3 | (3.5–7.1) |  | 2.2 | (0.9–3.5) |  | 3.9 | (2.8–5.1) |  | 1.00 | (ref) |  |
| 1–2 | 8.3 | (7.0–9.6) |  | 5.9 | (4.6–7.1) |  | 7.2 | (6.3–8.1) |  | 1.89 | (1.36–2.65) | <0.001 |
| 3–5 | 10.8 | (9.2–12.4) |  | 6.7 | (5.1–8.3) |  | 9.2 | (8.1–10.3) |  | 2.47 | (1.77–3.45) | <0.001 |
| > 5 | 11.5 | (9.1–13.9) |  | 9.0 | (6.2–11.8) |  | 10.6 | (8.7–12.4) |  | 2.89 | (2.01–4.15) | <0.001 |
| Missing | 8.1 | (6.5–9.6) |  | 4.8 | (3.6–6.0) |  | 6.4 | (5.4–7.4) |  | 1.67 | (1.18–2.36) | <0.001 |
| *P* for trend | <0.001 | |  | <0.001 | |  | <0.001 | |  |  |  |  |
| **History of drug using for treatment of pneumoconiosis** | | |  |  |  |  |  |  |  |  |  |  |
| No or occasional use | 6.7 | (5.8–7.5) |  | 4.8 | (3.9–5.7) |  | 5.9 | (5.3–6.5) |  | 1.00 | (ref) |  |
| Usual use | 12.3 | (11.0–13.6) |  | 6.4 | (5.4–7.5) |  | 9.4 | (8.6–10.3) |  | 1.66 | (1.43–1.92) | <0.001 |
| *P* for difference | <0.001 | |  | 0.010 | |  | <0.001 | |  |  |  |  |
| **History of using immune-enhancing drugs** | | |  |  |  |  |  |  |  |  |  |  |
| Yes | 13.1 | (10.9–15.4) |  | 7.8 | (6.0–9.7) |  | 10.6 | (9.1–12.1) |  | 1.59 | (1.33–1.90) | <0.001 |
| No | 8.2 | (7.5–9.0) |  | 5.1 | (4.4–5.9) |  | 6.9 | (6.4–7.5) |  | 1.00 | (ref) |  |
| *P* for difference | <0.001 | |  | 0.005 | |  | <0.001 | |  |  |  |  |
| Formerly hospitalized |  | |  |  | |  |  | |  |  |  |  |
| Yes | 11.1 | (10.1-12.1) |  | 6.1 | (5.4-6.9) |  | 8.8 | (8.1-9.4) |  | 2.31 | (1.88-2.86) | <0.001 |
| No | 4.2 | (3.2-5.1) |  | 3.6 | (2.4-4.8) |  | 4.0 | (3.2-4.7) |  | 1.00 | (ref) |  |
| *P* for difference | <0.001 | |  | 0.002 | |  | <0.001 | |  |  |  |  |

CI: Confidence interval; NCMS: New Rural Cooperative Medical Scheme; OR: Odds ratio; PTB: Pulmonary tuberculosis; UEBMI: Urban Employee Basic Medical Insurance; URBMI: Urban Resident Basic Medical Insurance.