

Analysis on Related Factors of Social Support, Self-efficacy, and Quality of Life in Tuberculosis Patients in Northern District of Taiwan, 2019

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Abstract

Tuberculosis (TB) remains one of the most important chronic infectious diseases threatening human health. In Taiwan, TB is a third-category notifiable infectious disease. Although TB is chronic, airborne transmissible, it can be effectively prevented and treated. The purpose of this study is to investigate the factors related to social support, self-efficacy, and quality of life of TB patients.

The subjects of this study were diagnosed with TB in 2019 and were under treatment. A total of 285 TB cases were enrolled in this study in the Northern District of Taiwan, including Taoyuan City, Hsinchu City, Hsinchu County, and Miaoli County. This study was conducted by a self-administered structural questionnaire.

The results showed that the average age of the subjects was 57 years old. Most of the subjects were male, with an education level of elementary school, married, having children, with a monthly household income of less than 30,000 New Taiwan Dollars, employed, and living in Taoyuan City. There were significant differences between education level, monthly household income, and social support. In self-efficacy, there were significant differences found related to gender, education level, monthly household income, occupation, place of residence, chronic diseases, and post-TB concerns. As for the quality of life, the monthly household income, occupation, chronic diseases,

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side effects of TB treatment, and post-TB worries differed significantly. In summary, the subjects' ages, marital status, monthly household income, occupation, social support, and self-efficacy were the predictors of quality of life, of which social support and self-efficacy were the most explanatory. We recommended regularly assessing the self-efficacy of TB patients, providing relevant channels of assistance, and strengthening social support to improve their quality of life.

Keywords: Northern district of Taiwan, TB patients, social support, self-efficacy, quality of life

week 46–week 47, 2023 (Nov.12, 2023–Nov.25, 2023)

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Weekly Data of Notifiable Inases (by week of diagnosis)

| Case diagnosis year | | Week 46★ | | Week 1–46 | | | |
|---|---|----------|-----------|--------------|----------------|--------------|----------------|
| Classification | Disease Diagnosed | 2023 | 2022 | 2023 | | 2022 | |
| | | | | Total cases★ | Imported cases | Total cases★ | Imported cases |
| Category I | Plague | 0 | 0 | 0 | 0 | 0 | 0 |
| | Rabies | 0 | 0 | 0 | 0 | 0 | 0 |
| | SARS | 0 | 0 | 0 | 0 | 0 | 0 |
| | Smallpox | 0 | 0 | 0 | 0 | 0 | 0 |
| | Cholera | 0 | 0 | 1 | 0 | 1 | 0 |
| Category II | Typhoid fever | 0 | 0 | 8 | 6 | 3 | 1 |
| | Paratyphoid Fever | 4 | 1 | 23 | 1 | 5 | 0 |
| | Epidemic Typhus Fever | 0 | 0 | 0 | 0 | 0 | 0 |
| | Shigellosis | 0 | 3 | 60 | 12 | 72 | 7 |
| | Amoebiasis | 12 | 1 | 251 | 100 | 181 | 61 |
| | Enterohemorrhagic E.coli Infection | 0 | 0 | 0 | 0 | 2 | 0 |
| | Anthrax | 0 | 0 | 0 | 0 | 0 | 0 |
| | Diphtheria | 0 | 0 | 0 | 0 | 0 | 0 |
| | Meningococcal Meningitis | 0 | 0 | 4 | 0 | 1 | 0 |
| | Poliomyelitis | 0 | 0 | 0 | 0 | 0 | 0 |
| | Acute Flaccid Paralysis | 1 | 1 | 55 | 0 | 28 | 0 |
| | Measles | 0 | 0 | 2 | 2 | 1 | 0 |
| | Rubella | 0 | 0 | 0 | 0 | 0 | 0 |
| | Dengue Fever | 1,082 | 4 | 24,340 | 247 | 78 | 58 |
| | West Nile Fever | 0 | 0 | 0 | 0 | 0 | 0 |
| | Acute Viral Hepatitis type A | 3 | 0 | 79 | 6 | 115 | 1 |
| | Malaria | 1 | 0 | 2 | 2 | 2 | 2 |
| | Chikungunya Fever | 0 | 0 | 8 | 8 | 1 | 1 |
| | Hantavirus syndrome | 0 | 0 | 6 | 0 | 4 | 0 |
| | Zika virus infection | 0 | 0 | 3 | 3 | 0 | 0 |
| Mpox | 2 | 0 | 354 | 14 | 4 | 4 | |
| Category III | Acute Viral Hepatitis type B | 4 | 2 | 127 | 6 | 89 | 0 |
| | Acute Viral Hepatitis type C | 7 | 7 | 457 | 1 | 430 | 2 |
| | Acute Viral Hepatitis type D | 0 | 0 | 0 | 0 | 0 | 0 |
| | Acute Viral Hepatitis type E | 0 | 0 | 12 | 5 | 11 | 0 |
| | Acute Viral Hepatitis, untyped | 0 | 0 | 9 | 2 | 0 | 0 |
| | Congenital Syphilis | 0 | 0 | 0 | 0 | 0 | 0 |
| | Congenital Rubella Syndrome | 0 | 0 | 0 | 0 | 0 | 0 |
| | Enteroviruses Infection with Severe Complications | 0 | 0 | 14 | 0 | 0 | 0 |
| | Haemophilus Influenza type b Infection | 0 | 0 | 1 | 0 | 2 | 0 |
| | Japanese Encephalitis | 0 | 0 | 26 | 0 | 19 | 0 |
| | Legionnaires' Disease | 7 | 9 | 345 | 8 | 300 | 1 |
| | Mumps | 4 | 11 | 258 | 8 | 256 | 0 |
| | Neonatal Tetanus | 0 | 0 | 0 | 0 | 0 | 0 |
| | Pertussis | 0 | 0 | 0 | 0 | 1 | 0 |
| Tetanus | 0 | 0 | 5 | 0 | 7 | 0 | |
| Category IV | Botulism | 0 | 0 | 0 | 0 | 0 | 0 |
| | Brucellosis | 0 | 0 | 0 | 0 | 0 | 0 |
| | Complicated Varicella | 2 | 0 | 42 | 0 | 30 | 0 |
| | Endemic Typhus Fever | 0 | 1 | 24 | 0 | 12 | 0 |
| | Herpesvirus B Infection | 0 | 0 | 0 | 0 | 0 | 0 |
| | Influenza Case with Severe Complications | 21 | 1 | 934 | 12 | 4 | 1 |
| | Invasive Pneumococcal Disease | 6 | 2 | 246 | 1 | 158 | 0 |
| | Leptospirosis | 2 | 3 | 70 | 0 | 59 | 0 |
| | Listeriosis | 5 | 1 | 171 | 2 | 128 | 0 |
| | Lyme Disease | 0 | 0 | 0 | 0 | 1 | 1 |
| | Melioidosis | 1 | 2 | 26 | 2 | 23 | 2 |
| | Q Fever | 0 | 0 | 3 | 0 | 3 | 0 |
| | Scrub Typhus | 3 | 4 | 182 | 0 | 253 | 0 |
| | Toxoplasmosis | 0 | 2 | 23 | 2 | 24 | 0 |
| | Tularemia | 0 | 0 | 0 | 0 | 0 | 0 |
| Severe Fever with Thrombocytopenia Syndrome | 0 | 0 | 0 | 0 | 1 | 0 | |
| Severe Pneumonia with Novel Pathogens | 221 | 128,715 | 1,394,717 | 18,143 | 8,145,956 | 34,845 | |
| Category V | Ebola Virus Disease | 0 | 0 | 0 | 0 | 0 | 0 |
| | Lassa Fever | 0 | 0 | 0 | 0 | 0 | 0 |
| | Marburg Hemorrhagic Fever | 0 | 0 | 0 | 0 | 0 | 0 |
| | Middle East Respiratory Syndrome Coronavirus Infections | 0 | 0 | 0 | 0 | 0 | 0 |
| | Novel Influenza A Virus Infections | 0 | 0 | 1 | 0 | 0 | 0 |
| | Rift Valley Fever | 0 | 0 | 0 | 0 | 0 | 0 |
| Yellow Fever | 0 | 0 | 0 | 0 | 0 | 0 | |

1. ★The weekly and cumulative total numbers include indigenous and imported cases of notifiable infectious diseases.
 2. MDR-TB, Tuberculosis, Syphilis, Gonorrhoea, HIV Infection, AIDS, Hansen's Disease and Creutzfeldt-Jakob Disease are excluded from the table.
 3. Numbers of Mumps and Tetanus are based on reported cases and summed up by week of report.
 4. "Mpox" has been listed as a Notifiable Infectious Disease since June 23, 2022.
 5. "Severe Pneumonia with Novel Pathogens": The case definition has been revised to include patients who have both a positive test for SARS-CoV-2 and associated complications since March 20, 2023. Additionally, it has been modified from Category V to Category IV since May 1, 2023.

Suspected Clusters

- Forty-nine clusters related to Upper respiratory tract infection (25), Diarrhea (18), Varicella (4), and TB (2) were reported during week 46.

Imported Infectious Diseases

- There were 19 imported cases from at least 8 countries/areas during week 46.
 - Dengue Fever:** 13 cases from Indonesia (4), Vietnam (4), Cambodia (2), China (1), Myanmar (1), and the Philippines (1).
 - Amoebiasis:** 2 cases from Indonesia.
 - Severe Pneumonia with Novel Pathogens:** 1 case from Indonesia.
 - Acute Viral Hepatitis type A:** 1 case from Indonesia.
 - Mpox:** 1 case from Japan.
 - Malaria:** 1 case from Ethiopia.

- During week 1–46, the imported cases of notifiable diseases. The top three were Severe Pneumonia with Novel Pathogens(18,143), Dengue Fever(247), and Amoebiasis(100).
- During week 1–46, imported cases of notifiable diseases were from at least 50 countries/areas. The top three were China(3,180), Japan(730), and Thailand(211).

Summary of Epidemic

- **Influenza:** The epidemic has decreased and is still in an epidemic period.
- **Dengue Fever:** The epidemic has decreased, but the risk of transmission persists.

Weekly Data of Notifiable Inases (by week of diagnosis)

| Case diagnosis year | | Week 47 | | Week 1–47 | | | |
|---|---|---------|-----------|--------------|----------------|--------------|----------------|
| Classification | Disease Diagnosed | 2023 | 2022 | 2023 | | 2022 | |
| | | | | Total cases★ | Imported cases | Total cases★ | Imported cases |
| Category I | Plague | 0 | 0 | 0 | 0 | 0 | 0 |
| | Rabies | 0 | 0 | 0 | 0 | 0 | 0 |
| | SARS | 0 | 0 | 0 | 0 | 0 | 0 |
| | Smallpox | 0 | 0 | 0 | 0 | 0 | 0 |
| | Cholera | 0 | 0 | 1 | 0 | 1 | 0 |
| Category II | Typhoid fever | 1 | 1 | 9 | 7 | 4 | 2 |
| | Paratyphoid Fever | 0 | 1 | 23 | 1 | 6 | 0 |
| | Epidemic Typhus Fever | 0 | 0 | 0 | 0 | 0 | 0 |
| | Shigellosis | 0 | 5 | 60 | 12 | 77 | 7 |
| | Amoebiasis | 3 | 2 | 254 | 102 | 183 | 62 |
| | Enterohemorrhagic E.coli Infection | 0 | 0 | 0 | 0 | 2 | 0 |
| | Anthrax | 0 | 0 | 0 | 0 | 0 | 0 |
| | Diphtheria | 0 | 0 | 0 | 0 | 0 | 0 |
| | Meningococcal Meningitis | 1 | 0 | 5 | 0 | 1 | 0 |
| | Poliomyelitis | 0 | 0 | 0 | 0 | 0 | 0 |
| | Acute Flaccid Paralysis | 1 | 1 | 56 | 0 | 29 | 0 |
| | Measles | 0 | 0 | 2 | 2 | 1 | 0 |
| | Rubella | 0 | 0 | 0 | 0 | 0 | 0 |
| | Dengue Fever | 852 | 1 | 25,191 | 251 | 79 | 59 |
| | West Nile Fever | 0 | 0 | 0 | 0 | 0 | 0 |
| | Acute Viral Hepatitis type A | 1 | 1 | 80 | 6 | 116 | 1 |
| | Malaria | 0 | 0 | 2 | 2 | 2 | 2 |
| | Chikungunya Fever | 1 | 0 | 9 | 9 | 1 | 1 |
| | Hantavirus syndrome | 0 | 0 | 6 | 0 | 4 | 0 |
| | Zika virus infection | 0 | 0 | 3 | 3 | 0 | 0 |
| Mpox | 1 | 0 | 355 | 15 | 4 | 4 | |
| Category III | Acute Viral Hepatitis type B | 1 | 7 | 128 | 6 | 96 | 0 |
| | Acute Viral Hepatitis type C | 4 | 15 | 461 | 1 | 445 | 2 |
| | Acute Viral Hepatitis type D | 0 | 0 | 0 | 0 | 0 | 0 |
| | Acute Viral Hepatitis type E | 0 | 0 | 12 | 5 | 11 | 0 |
| | Acute Viral Hepatitis, untyped | 1 | 0 | 10 | 2 | 0 | 0 |
| | Congenital Syphilis | 0 | 0 | 0 | 0 | 0 | 0 |
| | Congenital Rubella Syndrome | 0 | 0 | 0 | 0 | 0 | 0 |
| | Enteroviruses Infection with Severe Complications | 0 | 0 | 14 | 0 | 0 | 0 |
| | Haemophilus Influenza type b Infection | 0 | 0 | 1 | 0 | 2 | 0 |
| | Japanese Encephalitis | 0 | 0 | 26 | 0 | 19 | 0 |
| | Legionnaires' Disease | 7 | 15 | 352 | 8 | 315 | 2 |
| | Mumps | 6 | 18 | 264 | 7 | 274 | 0 |
| | Neonatal Tetanus | 0 | 0 | 0 | 0 | 0 | 0 |
| Pertussis | 0 | 0 | 0 | 0 | 1 | 0 | |
| Tetanus | 0 | 1 | 5 | 0 | 8 | 0 | |
| Category IV | Botulism | 0 | 0 | 0 | 0 | 0 | 0 |
| | Brucellosis | 0 | 0 | 0 | 0 | 0 | 0 |
| | Complicated Varicella | 1 | 0 | 43 | 0 | 30 | 0 |
| | Endemic Typhus Fever | 0 | 3 | 24 | 0 | 15 | 0 |
| | Herpesvirus B Infection | 0 | 0 | 0 | 0 | 0 | 0 |
| | Influenza Case with Severe Complications | 11 | 6 | 945 | 12 | 10 | 1 |
| | Invasive Pneumococcal Disease | 3 | 4 | 249 | 1 | 162 | 0 |
| | Leptospirosis | 4 | 3 | 74 | 0 | 62 | 0 |
| | Listeriosis | 0 | 0 | 171 | 2 | 128 | 0 |
| | Lyme Disease | 0 | 0 | 0 | 0 | 1 | 1 |
| | Melioidosis | 1 | 0 | 27 | 2 | 23 | 2 |
| | Q Fever | 0 | 0 | 3 | 0 | 3 | 0 |
| | Scrub Typhus | 6 | 1 | 188 | 0 | 254 | 0 |
| | Toxoplasmosis | 0 | 2 | 23 | 2 | 26 | 0 |
| | Tularemia | 0 | 0 | 0 | 0 | 0 | 0 |
| Severe Fever with Thrombocytopenia Syndrome | 0 | 0 | 0 | 0 | 1 | 0 | |
| Severe Pneumonia with Novel Pathogens | 230 | 104,717 | 1,394,947 | 18,144 | 8,250,673 | 35,128 | |
| Category V | Ebola Virus Disease | 0 | 0 | 0 | 0 | 0 | 0 |
| | Lassa Fever | 0 | 0 | 0 | 0 | 0 | 0 |
| | Marburg Hemorrhagic Fever | 0 | 0 | 0 | 0 | 0 | 0 |
| | Middle East Respiratory Syndrome Coronavirus Infections | 0 | 0 | 0 | 0 | 0 | 0 |
| | Novel Influenza A Virus Infections | 0 | 0 | 1 | 0 | 0 | 0 |
| | Rift Valley Fever | 0 | 0 | 0 | 0 | 0 | 0 |
| Yellow Fever | 0 | 0 | 0 | 0 | 0 | 0 | |

1. ★The weekly and cumulative total numbers include indigenous and imported cases of notifiable infectious diseases.
2. MDR-TB, Tuberculosis, Syphilis, Gonorrhoea, HIV Infection, AIDS, Hansen’s Disease and Creutzfeldt-Jakob Disease are excluded from the table.
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4. "Mpox" has been listed as a Notifiable Infectious Disease since June 23, 2022.
5. "Severe Pneumonia with Novel Pathogens": The case definition has been revised to include patients who have both a positive test for SARS-CoV-2 and associated complications since March 20, 2023. Additionally, it has been modified from Category V to Category IV since May 1, 2023.

Suspected Clusters

- Thirty-seven clusters related to Diarrhea (20), Upper respiratory tract infection (12), TB (3), and Enterovirus (2) were reported during week 47.

Imported Infectious Diseases

- There were 9 imported cases from at least 8 countries/areas during week 47.
 - Dengue Fever:** 4 cases from Vietnam (2), the Philippines (1), and Malaysia (1).
 - Typhoid fever:** 1 case from Thailand.
 - Severe Pneumonia with Novel Pathogens:** 1 case from UAE.
 - Chikungunya Fever:** 1 case from India.
 - Mpox:** 1 case from Cambodia.
 - Amoebiasis:** 1 case from Indonesia.
- During week 1–47, there were 18,602 the imported cases of notifiable diseases. The top three were Severe Pneumonia with Novel Pathogens (18,144), Dengue Fever (251), and Amoebiasis (102).
- During week 1–47, imported cases of notifiable diseases were from at least 50 countries/areas. The top three were China (3,180), Japan (730), and Thailand (212).

Summary of Epidemic

- **Influenza:** The epidemic has decreased.
- **Dengue Fever:** The epidemic has decreased.

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