

使用全民健保資料庫之投稿經驗分享

Experiences in submissions by using the NHIRD ● ● ●



Presented by Professor Herng-Ching Lin

2009.08.06

Publication

Research Topics

Why uses the NHIRD

Disadvantages of the NHIRD

Submission experience

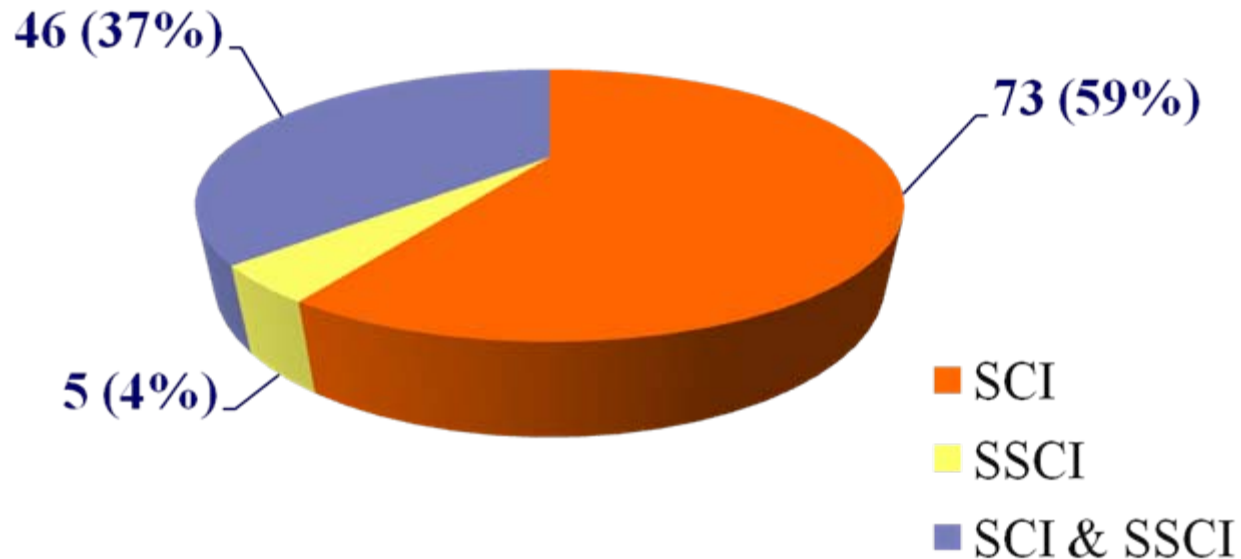


Publication

- ❖ Using the NHIRD published **126** articles in the international journals (from **2004 to 7/31/2009**).
- ❖ A total of 124 were either first or corresponding authors or both.

Publication - Journal type

- ❖ **73** articles published in SCI journals
- ❖ **5** articles published in SSCI journals
- ❖ **46** articles published in both SCI and SSCI journals





Publication - Journal type

- ❖ Journal of Affective Disorders- 7 (IF=3.271)
- ❖ Health Policy- 7 (IF=1.334)
- ❖ Schizophrenia Research- 6 (IF=4.174)
- ❖ Stroke- 4 (IF=6.499)
- ❖ Chronobiology International- 3 (IF=3.495)
- ❖ Annals of Thoracic Surgery- 3 (IF=2.689)
- ❖ Journal of General Internal Medicine- 3 (IF=2.720)



Reported by Reuters

- ❖ 1. Sudden sensorineural hearing loss increases the risk of stroke: a 5-year follow-up study. *Stroke*. 2008;39:2744-8.

Finding: The adjusted hazard of stroke for patients with SSNHL during the 5-year follow-up period was 1.64-times (95% CI, 1.31 to 2.07; $P < 0.001$)

- ❖ 2. Increased risk of stroke in patients who undergo cesarean section delivery: a nationwide population-based study. *Am J Obstet Gynecol*. 2008;198:391.e1-7.

Finding: Cesarean section delivery is an independent risk factor for stroke.



Research Topics

- ❖ Volume-outcome relationship
- ❖ Risk of stroke or AMI for certain diseases
- ❖ Seasonality of disease
- ❖ Mental health



Volume-outcome (1)

- ❖ Physician's case volume of intensive care unit pneumonia admissions and in-hospital mortality. *Am J Respir Crit Care Med.* 2008;177:989-94. (IF=9.792)
- ❖ **OBJECTIVE:** This study examines associations between in-hospital mortality of ICU-admitted pneumonia patients and their attending physician's case volume.
- ❖ **FINDINGS:** Physician volume significantly predicts inpatient mortality among ICU patients with pneumonia.



Volume-outcome (2)

- ❖ Association between physician volume and hospitalization costs for patients with stroke in Taiwan: a nationwide population-based study.
Stroke. 2007;38:1565-9. (IF= 6.499)
- ❖ **OBJECTIVE:** To explore the association between physician case volume and costs per discharge for patients with stroke.
- ❖ **FINDINGS:** The potential cost savings if all patients were treated or supervised by high-volume physicians could be 41.0% of the mean treatment cost incurred by low-volume physicians.



Volume-outcome (3)

- ❖ Caseload Volume-Outcome Relation for Pulmonary Embolism Treatment: Association between Physician and Hospital Volume and 30-day Mortality.
J Thromb Haemost. 2008;6:1707-12. (IF=6.291)
- ❖ **OBJECTIVE:** To examine the association between physician and hospital pulmonary embolism (PE) caseload volume and subsequent patient outcomes using 3-year nationwide population-based data in Taiwan.
- ❖ **FINDINGS:** An inverse PE volume-outcome relationship does exist for physicians, but not for hospitals.



Volume-outcome (4)

- ❖ Hospital volume and inpatient mortality after cancer-related gastrointestinal resections: the experience of an Asian country. *Ann Surg Oncol*. 2006;13:1182-8 (IF=3.898)
- ❖ **OBJECTIVE:** To compared in-hospital surgical mortality rates with hospital volume for five cancer-related gastrointestinal resections.
- ❖ **FINDINGS:** In four of the five procedures, patients treated at higher-volume hospitals had lower in-hospital mortality rates than those treated at lower-volume hospitals.



Volume-outcome (5)

- ❖ Association between surgeon and hospital volume in coronary artery bypass graft surgery outcomes: a population-based study. *Ann Thorac Surg.* 2006;81:835-42 (IF=2.689)
- ❖ **OBJECTIVE:** To examine the association between surgeon-hospital coronary artery bypass graft volume and patient outcomes.
- ❖ **FINDINGS:** The skill and experience of individual surgeons is a more critical factor for patient outcome than either hospital equipment or surgical teams.



Risk of Stroke or AMI (1)

- ❖ Severely depressed young patients have over five times increased risk for stroke: a 5-year follow-up study.
Biol Psychiatry. 2008;64:912-5. (IF=8.672)
- ❖ **OBJECTIVE:** To estimate the risk of developing stroke within 5 years of discharge among young patients ages 18 to approximately 44 who were hospitalized for depressive disorders.
- ❖ **FINDINGS:** Young patients who were hospitalized for depressive disorders were at over five times greater risk of developing stroke within 5 years of discharge compared with non-depressed age- and gender-matched subjects.



Risk of Stroke or AMI (2)

- ❖ Open-angle glaucoma and the risk of stroke development: a 5-year population-based follow-up study. *Stroke*. 2009;40:2685-90. (IF= 6.499)
- ❖ **OBJECTIVE:** We investigated the risk of stroke development after a diagnosis of OAG.
- ❖ **FINDINGS:** Patients with OAG demonstrated a significantly increased risk of stroke development during the 5-year follow-up period (1.52-fold (95% CI, 1.40 to 1.72)).



Risk of Stroke or AMI (3)

- ❖ Sudden sensorineural hearing loss increases the risk of stroke: a 5-year follow-up study. Stroke. 2008;39:2744-8. (IF=6.499)
- ❖ **OBJECTIVE:** No previous study has investigated the incidence or risk of cerebrovascular diseases developing after the sudden sensorineural hearing loss (SSNHL). This study sets out to estimate the risk of stroke development among SSNHL patients during a 5e-year follow-up period after hospitalization for acute episodes of SSNHL.



Risk of Stroke or AMI (4)

- ❖ Increased Risk of Stroke after Herpes Zoster Attack: A Population-Based Follow-up Study. *Stroke*.(in press) (IF= 6.499)
- ❖ **OBJECTIVE:** To investigate the frequency and risk of stroke following herpes zoster attacks through a nationwide population-based study of a retrospective cohort design.
- ❖ **FINDINGS:** The adjusted hazard ratio of stroke after herpes zoster and herpes zoster ophthalmicus during the one-year follow-up period were 1.31 and 4.28, respectively.



Risk of Stroke or AMI (5)

- ❖ Increased Risk of Acute Myocardial Infarction for Patients With Panic Disorder: A Nationwide Population-Based Study. Psychosom Med. (in press) (IF= 3.460)
- ❖ **OBJECTIVE:** To examine prospectively the relationship between a diagnosis of panic disorder and the risk of acute myocardial infarction within 1 year of follow-up.
- ❖ **FINDINGS:** The adjusted hazard of acute myocardial infarction was significantly higher (1.75 times, 95% Confidence Interval = 1.55-1.97) for patients with panic disorder, relative to the comparison cohort.



Seasonality of Disease (1)

- ❖ Weekly pattern of stroke onset in an Asian country: a nationwide population-based study. *Chronobiol Int.* 2008;25:788-99 (IF= 3.495)
- ❖ **OBJECTIVE:** To explore the variation among the days of week of stroke onset within population subgroups defined by age, sex, and stroke type.
- ❖ **FINDINGS:** Stroke occurs more frequently on Mondays than on the other days of the week, which might be associated with short-term changes in lifestyle or due to the sudden return of stress on the first working day of the week, and on holidays.



Seasonality of Disease (2)

- ❖ Seasonal variations in urinary calculi attacks and their association with climate: a population based study. J Urol. 2008;179:564-9. (IF= 3.952)
- ❖ **OBJECTIVE:** Using 5-year data on urinary calculi patient visits to emergency departments in Taiwan to investigate the seasonal variation in urinary calculi attacks and the association with 5 climatic parameters .
- ❖ **FINDINGS:** The seasonal trends in the monthly urinary calculi attack rates revealed a peak in July to September. Only ambient temperature had any consistent association with monthly attack rates.



Seasonality of Disease (3)

- ❖ Seasonal variation in schizophrenia admissions in a Chinese population. *Schizophr Res.* 2006;86:333-4. (IF= 4.174)
- ❖ **OBJECTIVE:** To investigate seasonal variations in schizophrenia admissions, over a seven-year period, among different age and gender groups in Taiwan.
- ❖ **FINDINGS:** A consistently discernible peak in schizophrenia admissions is observed for all age and gender groups in the month of March.



Seasonality of Disease (4)

- ❖ Suicide rates and the association with climate: a population-based study. *J Affect Disord.* 2006;92:221-6. (IF= 4.174)
- ❖ **OBJECTIVE:** To verify seasonal patterns of suicide rates and to explore the association with climate in Taiwan.
- ❖ **FINDINGS:** Seasonality with a spring peak was evident in suicidal death regardless of gender or age. Suicide rates may be influenced by ambient temperatures.



Mental Health (1)

- ❖ Contact of mental and nonmental health care providers prior to suicide in Taiwan: a population-based study. *Can J Psychiatry*. 2008;53:377-83 (IF= 2.828)
- ❖ **OBJECTIVE:** To examine the distribution and patterns of health care service use among suicide victims in Taiwan.
- ❖ **FINDINGS:** Men, and suicide victims aged 55 years and older, were less likely to have had any contact with mental health care professionals prior to their deaths.



Mental Health (2)

- ❖ Are psychiatrist characteristics associated with postdischarge suicide of schizophrenia patients?
Schizophr Bull. 2009;35:760-5. (IF= 6.592)
- ❖ **OBJECTIVE:** To identify the risk factors for suicide among schizophrenia patients in the 3-month postdischarge period.
- ❖ **FINDINGS:** The adjusted suicide hazard for schizophrenia patients treated by male psychiatrists was significantly higher than for patients treated by female psychiatrists, by a multiple of 5.117 ($P = .032$). The adjusted suicide hazard among patients treated by psychiatrists over age 44 years was 2.378 times ($P = .043$) that for patients treated by psychiatrists aged younger than 35 years.



Mental Health (3)

- ❖ Hospital characteristics associated with post-discharge suicide of severely depressed patients. *J Affect Disord.* 2008;110:215-21. (IF= 3.271)
- ❖ **OBJECTIVE:** To explore risk factors associated with depressed patients who committed suicide within 3 months of discharge using a case-control design.
- ❖ **FINDINGS:** The adjusted hazard for patients who were discharged from medical centers was higher than for patients discharged from regional hospitals, by a multiple of 3.38 (95% CI=1.421-8.055, $p=0.006$).



Why uses the NHIRD

- ❖ 1. Trend of the world
- ❖ 2. Low costs
- ❖ 3. Easy to access
- ❖ 4. Easy to test the feasibility of the study
- ❖ 5. One of the largest datasets in the world
- ❖ 6. Nationwide population-based dataset
- ❖ 7. Large sample size on rare diseases



Trend of the World

- ❖ More and more papers using administrative dataset were published in NEJM, BMJ, JAMA and Lancet during the past decade.
- ❖ Using database or dataset: 21,860 in 2003, 29,973 in 2004, 31,302 in 2005, 33,591 in 2006 and 35,686 in 2007 and 37,166 in 2008.
- ❖ More representative the “real” world.



Low costs

- ❖ Basic request: Hospitalization dataset: \$2000 per year.
- ❖ Special request: \$200 per GB.


| | 門診明細檔(CD) | 門診醫令檔(OO) | 住院明細檔 (DD) | 住院醫令檔(DO) |
|------------|---------------|----------------|---------------|--------------|
| 85年 | 10,600元(53GB) | | 200元(1GB) | |
| 86年 | 11,400元(57GB) | 18,400元(92GB) | 200元(1GB) | 2,000元(10GB) |
| 87年 | 12,200元(61GB) | 23,000元(115GB) | 200元(1GB) | 2,000元(10GB) |
| 88年 | 12,600元(63GB) | 28,200元(141GB) | 200元(1GB) | 2,000元(10GB) |
| 89年 | 12,400元(62GB) | 26,800元(134GB) | 200元(1GB) | 2,000元(10GB) |
| 90年 | 12,200元(61GB) | 25,200元(126GB) | 200元(1GB) | 2,200元(11GB) |
| 91年 | 12,400元(62GB) | 25,000元(125GB) | 200元(1GB) | 2,400元(12GB) |
| 92年 | 13,200元(66GB) | 25,800元(129GB) | 200元(1GB) | 3,000元(15GB) |
| 93年 | 13,400元(67GB) | 28,200元(141GB) | 400元(2GB) | 3,000元(15GB) |
| 94年 | 13,800元(69GB) | 25,800元(129GB) | 200元(1GB) | 2,800元(14GB) |
| 95年 | 13,200元(66GB) | 24,800元(124GB) | 200元(1GB) | 2,800元(14GB) |
| 96年 | 13,400元(67GB) | 27,000元(135GB) | 200元(1GB) | 3,000元(15GB) |

- ❖ 學術界研究申請資格:個人政府立案之國內公私立大專院校、政府所屬業務相關單位、或非營利研究機構（含教學醫院）之講師、技正（或相當職等）、助研究員、專科醫師等（含）以上或其他經「全民健康保險研究資料庫指導委員會」（以下簡稱指委會）審核通過者。
- ❖ 非學術界研究申請資格:申請人必須為我國國民或本國登記立案之公司或機構。不符合學術研究類資格或具學術研究類資格但未通過學術研究類之審查程序者。



Easy to Test Feasibility of Potential Study


- ❖ Take a quick look at all of your results.
- ❖ Are they expected (insignificant or opposite direction)?
- ❖ Ex: delivery mode vs. retinal detachment (opposite direction)
- ❖ Ex: Systemic sclerosis vs. pregnancy outcome (insignificant)



One of the largest datasets in the world (1)

❖ Large datasets

- 1. US Medicare (age over 65)
- 2. Swedish Medical Birth Register and the Inpatient Register
- 3. Denmark National Hospital Register
- 4. The Medical Birth Registry of Norway
- 5. Norwegian National Trauma Registry



One of the largest datasets in the world (2)

| 年度 | 總住院人次 |
|------|-----------|
| 2001 | 2,649,989 |
| 2002 | 2,758,046 |
| 2003 | 2,541,373 |
| 2004 | 2,775,837 |
| 2005 | 2,739,428 |





Nationwide population-based dataset

- ❖ Many studies only used samples from a few selected hospitals or subpopulations.
- ❖ The findings cannot be generalized to the whole population.
- ❖ The sample from NHIRD has no selection bias.
- ❖ Example: asthma seasonality



Large sample size on rare disease (1)

- ❖ The effects of weather on the incidence of sudden sensorineural hearing loss: a 5-year population-based study. *Audiol Neurootol.* 2006;11(3):165-71.

Abstract

Objective: This study utilizes 5-year population data to examine the association between weather conditions and the incidence of sudden sensorineural hearing loss (SSNHL) in Taiwan with a specific focus on ambient temperature, relative humidity, atmospheric pressure, rainfall and total hours of sunshine. **Method:** The data, covering the period from 1998 to 2002, is sourced from the Taiwan National Health Insurance Research Database (NHIRD), with a total of 8712 first-time admissions being identified from the database by a principal diagnosis of unspecified sudden hearing loss (ICD-9-CM code 3882). After controlling for time trend effects, this study adopted the autoregressive integrated moving average regression method as a means of evaluating the effects of climatic and monthly factors on SSNHL incidence rates. **Results:** Although significant associations were found between ambient temperature, relative humidity and the SSNHL incidence rates for the total population, after adjusting for seasonality, months and trends, the significant relationship between SSNHL incidence rates and the climatic parameters disappeared. **Conclusions:** This



Large sample size on rare disease (2)

- ❖ Epidemiologic features of Kawasaki disease in Taiwan, 1996-2002. *Pediatrics*. 2004 Dec;114(6):e678-82.

RESULTS

Overall

There were a total of 7679 hospitalizations for KD among 7305 children who were <18 years old in Taiwan from 1996 to 2002, and 5.1% (374) of the hospitalizations were for transfer to medical centers for re-treatment or recurrence of KD. Their mean age \pm standard deviation was 2.17 ± 2.21 years, and the male-to-female ratio was 1.70:1. Recurrence of KD occurred in 1.3% (94) of the children. Children with recurring KD had their first attack at 1.51 ± 1.41 years, which was significantly younger than the mean age of KD cases without recurrence ($P < .001$). The median (range) of the interval between the first attack of KD and the second attack was 145 (9–1891) days. Eighty-five percent (80 of 94) of the second attack occurred within 2 years after the first episode.



Disadvantages of the NHIRD

- ❖ Diagnosis validity
- ❖ Lack of clinical data
- ❖ Lack of sociodemographic data
- ❖ Lack of severity of illness data
- ❖ Lack of important outcome variables (mortality)



Disadvantages of the NHIRD

Diagnosis validity

- ❖ Quality of the database? (no validity study)
- ❖ How accurate are the diagnoses? (ex. the diagnoses in the field of mental health are questionable)
- ❖ What is the proportion of missing data?



Disadvantages of the NHIRD

Lack of clinical data

- ❖ Lack of data on lab tests, blood pressure, body mass index, obesity
- ❖ Lack of data on smoking.



Disadvantages of the NHIRD

Lack of sociodemographic data

- ❖ Lack of data on marital status, the highest educational level, occupation and family income.



Disadvantages of the NHIRD

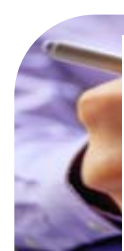
Lack of severity of illness data

- ❖ 1. Cancer stage and tumor size.
- ❖ From reviewer: **“Their observation is interesting but has fatal deficiency.”**
- ❖ 2. No severity index: stroke, pneumonia (PSI), and asthma.



Submission experience (1)

- ❖ Fastest: being accepted at the same day. BREAST
CANCER RESEARCH AND TREATMENT (IF=5.684)



Does high surgeon and hospital surgical volume raise the five-year survival rate for breast cancer? A population-based study

Chin-Shyan Chen · Tsai-Ching Liu ·
Herng-Ching Lin · Yung-Chang Lien

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Abstract This study sets out to examine the relationship between both surgeon and hospital volume and five-year survival rates for breast cancer patients. We performed Cox proportional hazard regressions on a pooled population-based database linking the Taiwan National Health Insurance Research Database with the 'cause of death' data file, covering the three-year period from January 1997 to December 1999. Of the 13,360 breast cancer resection patients in our study sample, the five-year survival rates, by surgeon volume, were 77.3% in the high-volume group (>201 cases), 76.9% in the medium-volume group (45–200), and 69.5% in the low-volume group (≤ 44). The five-year survival rates, by hospital volume, were 77.3% for high-volume hospitals (>585 cases), 74.5% for medium-volume hospitals (259–585) and 72.1% for low-volume

hospitals (≤ 258). Cox regression analyses show that the risk of death for patients treated by low-volume surgeons was up to 1.305 times ($P < 0.001$) as high as the risk for those treated by high-volume surgeons. Similarly, the risk of death for patients whose resections had been performed in low-volume hospitals was 1.484 times ($P < 0.001$) as high as the risk for those whose resections had been performed in high-volume hospitals. High surgeon or hospital volume contributes significantly to patient outcomes and may be regarded as an overall indicator of high treatment quality; we therefore strongly recommend that the health-care authorities reveal to the public all of the relevant information on provider performance and caseloads in order to assist them to make the optimum choice when surgery becomes necessary.

Sources of information for the study: Secondary data released from Taiwan's National Health Insurance Research Database which included no patient, institution, or physician identifiers.

Keywords Breast cancer surgery · Surgical volume · Survival · Taiwan



Submission experience (2)

- ❖ Accepted at the first decision
 - 1. Breast Cancer Res Treat
 - 2. Urology
 - 3. Eye
 - 4. Journal of Asthma
 - 5. Journal of Evaluation in Clinical Practice



Submission experience (3)

- ❖ From Editor: **“Very fortuitously, your paper arrived just in time to be considered this morning by the Commissions Review Group which normally exercises the peer review function for invited works but which we also employ, where time allows, in the fast-tracking of unsolicited manuscripts as a journal efficiency measure.”**
- ❖ **“I am pleased to tell you that the Group had no criticism of your paper and on the basis of its advice I am happy to confirm acceptance of your article for publication in the *Journal of Evaluation in Clinical Practice*.”**



Submission experience (4)

- ❖ Fastest: being accepted after revision
(less than 1 hour)
- ❖ Journal of Affective Disorders
- ❖ Australian and New Zealand Journal of Psychiatry



Submission experience (5)

- ❖ Slowest: Health Policy & Planning
(1 year & 3 months)
- ❖ All journals related to public health or social science are slow.



Submission experience (6)

- ❖ Most times revisions: 5 revisions (EJSO)
- ❖ But all revisions finished in 2 weeks.
- ❖ The ranking drops most: EJSO (2005: IF=3.184, 7.9% in Surgery, to 2006: IF=1.873, 66.1% in Oncology)



Submission experience (7)

- ❖ Most responses to reviewers' comments:
AJRCCM (IF=9.091) (42 single-space pages)
- ❖ Associate Editor's comments: **“This is quite possibly the most responsive-to-reviewers manuscript I have seen. They have done a wonderful job of thoroughly developing sensitivity tests, and the methods and result sections are now first rate.”**



Submission experience (8)

- ❖ Most reviewers: Stroke (5 reviewers, revised twice & being rejected)
- ❖ The most recent 2 articles published by Stroke were reviewed by only 2 reviewers.
- ❖ Recently, most articles were reviewed by only one reviewer.

A close-up photograph of a person's hand holding a silver pen, poised to write on a white document. The background is a soft-focus blue and purple.

Submission experience (9)

- ❖ Most rejections after revisions: Journal of Clinical Psychiatry (3 revised manuscripts were rejected)



Submission experience (10)

- ❖ No reason being rejected after revision (Obstetrics & Gynecology)
- ❖ From Editor: **“In our editorial process we identify certain articles that may be acceptable after revision. If the revised article is a serious candidate for publication, it is then reviewed by all three editors in an editorial conference. I apologize for the long process that ended in a letter of rejection, but it occurred out of an earnest attempt to give this paper every chance for publication.”**



Submission experience (11)

- ❖ From Editor: **“I realize that English is not your native language, and you and your colleagues deserve congratulations for writing a scientific paper in this difficult language. The Annals, however, is published in English, and neither the editorial office nor the publisher has the resources to correct these errors in English grammar, sentence construction, word choice, and syntax.”**
- ❖ **“It makes no sense for me to publish a paper that is not written in good, readable English as nearly half our readers were not born to the language.”**



Submission experience (12)

- ❖ From reviewer: **“I have previously reviewed this manuscript for a different journal, and I made several suggestions then. I am pleased to say that the authors have incorporated most of my suggestions. I therefore have little further to add other than the following comments.”**



Conclusions

- ❖ Good-topic manuscripts still can be accepted by high IF-journals.
- ❖ Acceptance needs “lots of” luck.
- ❖ Still no idea which journal will accept this manuscript.
- ❖ Try your best to answer all comments if you have a revision opportunity.
- ❖ Do not feel frustrated after being rejected. It is very common (acceptance rate is always under 30%).
- ❖ Team work is very important.



**Thank you
for your attention!**

謝謝聆聽 敬請指教