Key Lab of Health Technology Assessment, National Health Commission (Fudan University)

WHO Collaborating Centre for Health Technology Assessment and Management

NEWSLETTER

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HIGHLIGHTS

- KLHTA/WHOCC faculty and students conducted the reporting quality appraisal of economic evaluation publications in China.
- KLHTA/WHOCC faculty and students have completed six articles that aimed to assess the reporting quality of published economic evaluations in China.
- International Experiences and Insights on the Application of Health Technology Assessment to Health Care Management Decisions.

Conducting Research about the Reporting Quality Appraisal of Economic Evaluation Publications in China.

As an integral part of health technology assessment (HTA), health economic evaluations have become increasingly important for decision-making. Economic evaluations are widely applied in health policy, including assessing prevention programs (such as vaccination, screening, and health promotion), diagnostics, treatment interventions (such as drugs and surgical procedures), organization of care, and rehabilitation. Compared with other studies, economic evaluation researches require more reporting space for additional items, such as resource use, costs, preference-related information, and cost-effectiveness results. Transparency and clarity in reporting are especially important for economic evaluations, which will help to understand and interpret these studies with the increasing number of publications available. The reporting adequacy of economic evaluations is imperative to benefit the decision-making process.

Although there is an increase in health economics research in China, the reporting quality assessment of economic evaluations has been given little attention thus far. Therefore, KLHTA/WHOCC faculty and students aimed to systematically review economic evaluations of medicines, such as negotiated oncology drugs, glucose-lowering drugs, and traditional Chinese medicines in China's 2020 national reimbursement drug list in mainland China, screening programs, and coronary stents to assess the reporting quality of the currently available publications on these topics.

The authors and titles of these articles that aimed to assess the reporting quality of published economic evaluations were:

1. Yan J, Bao S, Liu L, et al. Reporting quality of economic evaluations of the negotiated Traditional Chinese Medicines in national reimbursement drug list of China: A systematic review. *Integr Med Res*. 2023 Mar;12(1):100915.
2. Liu L, Jiang Z, Li F, et al. Were economic evaluations well reported for the newly listed oncology drugs in China's national reimbursement drug list. *BMC Health Serv Res*. 2022 Dec 3;22(1):1475.
3. Bao S, Liu L, Li F, et al. Systematic Review on Reporting Quality Assessment of Economic Evaluations for Glucose-lowering Drugs from China National Reimbursement Drug List. (submitted)
4. Xia Y, Lian D, Yang Y, et al. The quality of published health economic evaluations on screening programs in China: a systematic review and quantitative appraisal. *Expert Rev Pharmacoecon Outcomes Res*. 2022 Dec;22(8):1277-1283.

5. Lian D, Xia Y, Wei Y, et al. Analysis of factors influencing report quality of health economics evaluation of cancer screening category in China. *(in Chinese)* (accepted)
6. Ren Y, Li F, Liu L, et al. Quality Assessment of Economic Evaluation of Stents for Patients with Coronary Heart Disease: A Systematic Review. (submitted)

The abstracts of these articles are detailed in appendix 1-6.

•International Experiences and Insights on the Application of Health Technology Assessment to Health Care Management Decisions.

In recent years, Health Technology Assessment (HTA) has been widely used in China's National Reimbursement Drug List (NRDL) Adjustment, providing strong evidence to support the drug's scientific access to the NRDL and the rational formulation of health insurance management policies. Based on the challenges faced by HTA in China's National Reimbursement Drug List (NRDL) Adjustment at the present stage, KLHTA/WHOCC faculty and students systematically compared the successful experiences of HTA in the field of medical insurance management and decision-making in the UK, Canada, Australia, Korea, Germany, Japan, and Taiwan. Then we proposed to create a mechanism to build a diversified model of government-led and social participation; to construct a system to gradually build a professional plan and management framework for HTA from bottom to top; to set standards to promote the orderly development of HTA assisting medical insurance management and decision making; to encourage the classification and management of HTA in drugs access to the NRDL; to tackle the difficulties and establish a mechanism for commissioning technical evaluation projects; to emphasize value and scientifically formulate payment standards for the medical products in the insurance reimbursement list.

Appendix 1

Reporting quality of economic evaluations of the negotiated Traditional Chinese Medicines in national reimbursement drug list of China: A systematic review

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BACKGROUND: Traditional Medicine (TM) has a wide uptake in most countries. In China, Traditional Chinese Medicine (TCM) is a common kind of primary health because of its beneficial effects. This review aimed to appraise the publication reporting quality of economic evaluations for selective TCM in the National Reimbursement Drug List (NRDL), Version 2020, based on the Consolidated Health Economic Evaluation Reporting Standards (CHEERS) statement.

METHODS: Electronic databases were searched for economic evaluation that supported the TCM negotiations in NRDL (2020 version) published from 2001 to 2021, including PubMed, Web of Science, Embase, CNKI, WanFang, and SinoMed. The CHEERS statement was used to appraise the reporting quality of included TCM economic evaluations.

RESULTS: A total of 360 articles were retrieved, but only 38 economic evaluations met the inclusion criteria. None of the articles reported all items in the CHEERS checklist. The mean score of included articles is low at 10.93 ±2.62, with an average scoring rate of 51.31 ±10.53%. The least reported items included: "Characterizing heterogeneity," "Conflicts of interest", "Discount rate," and "Study perspective," with a re- porting rate of 0.00%, 5.26%, 7.89%, and 15.79%, respectively.

CONCLUSION: An upward trend occurred in the quantity and quality of the economic evaluation publications of TCM in China. TCM economic evaluations are still at an early stage, with an urgent need for improving reporting quality. It may result from research experiences or different ideas between TCM and Western Medicine. Adhering to reporting guidelines like CHEERS and educating economic evaluation investigators can improve TCM economic evaluations' reporting quality.

Appendix 2

Were economic evaluations well reported for the newly listed oncology drugs in China's national reimbursement drug list

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PURPOSE: To assess the reporting quality of published economic evaluations of the negotiated oncology drugs listed for China's 2020 National Reimbursement Drug List (NRDL).

METHODS: A comprehensive search was conducted to identify economic evaluation studies of negotiated oncology drugs listed in China's 2020 NRDL using the PubMed/MEDLINE, Embase, Web of Science, CNKI, SinoMed, and Wan-Fang Database up to March 31, 2021. The Consolidated Health Economic Evaluation Reporting Standards (CHEERS) checklist scored the reporting quality between 0 and 100. A linear regression analysis was employed to examine the influence of various characteristics on the reporting quality scores.

RESULTS: Eighty papers were included in the study, with the majority published during the past decade. Furthermore, more than half of the articles (57.5%, or 46 out of 80) were written in English. The average CHEERS score was 74.63 ± 12.75 and ranged from 43.48 to 93.75. The most inadequately reported items included choice of model, characterization of heterogeneity, and discussion, as well as currency, price date and conversion. Higher scores were associated with articles published from 2019 to 2021 and English publications.

CONCLUSION: The economic evaluation studies of negotiated oncology drugs listed in 2020 NRDL had moderate reporting quality. The Chinese economic evaluation publications could improve the reporting quality if the CHEERS checklist is consistently implemented. Also, the Chinese journals maybe explore introducing a reporting standard for economic evaluations.

Appendix 3

Systematic Review on Reporting Quality Assessment of Economic Evaluations for Glucose-lowering Drugs from China National Reimbursement Drug List

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BACKGROUND: Economic evaluations have been conducted comprehensively to assess the values of glucose-lowering drugs (GLDs). This information was used in the price negotiation process when GLDs entered the National Reimbursement Drug List. The reporting quality of these studies, however, varied significantly and can potentially lead to biased information.

OBJECTIVE: This study aimed to examine the reporting quality of existing economic evaluations for GLDs included in China NRDL, using the Consolidated Health Economic Evaluation Reporting Standards (CHEERS) as the reference.

METHODS: We performed systematic literature research through China National Knowledge Infrastructure(CNKI), Wan Fang, China Science and Technology Journal Database（VIP）, PubMed, and Web of Science databases to identify published economic evaluations for GLDs included in the China NRDL from January 2000 to March 2021. Reporting quality of identified studies was assessed by two independent reviewers based on the CHEERS checklist. The Kruskal Wallis tests were performed to examine the association between reporting quality and characteristics of the identified studies.

RESULTS: We have identified 24 studies, which evaluated six GLD types: IDegAsp/Insulin Degludec/Insulin Aspart, exenatide, liraglutide, lixisenatide, dapagliflozin and empagliflozin. The score rate was calculated to describe the extent to which the CHEERS item is fully reported.The average score rate of the included studies was 77.41% (SD:13.23%, Range 47.62%-91.67%). Among all the required reporting items, characterizing heterogeneity (score rate =4.17%) was the least satisfied item. The CHEERS was divided into 6 parts, including title and abstract, introduction, methods, results, discussion and other. Among six parts of CHEERS, results part scored least at 0.55(score rate=54.79%) because of the incompleteness of characterizing uncertainty. Results from the Kruskal Wallis tests showed that model choice, journal type, type of economic evaluation, and study perspective were associated with the report quality of the studies.

CONCLUSION: There remains room to improve the reporting quality of economic evaluations for GLDs in NRDL. Checklists such as CHEERS should be widely used to improve the reporting quality of economics research in China.

Appendix 4

The quality of published health economic evaluations on screening programs in China: a systematic review and quantitative appraisal

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BACKGROUND: This study seeks to assess the quality of HEEs reporting on screening programs over the last 20 years in China, to identify potential predictors of reporting quality.

METHODS: We performed a literature search of HEE studies published in PubMed, Embase, CNKI, and WANFANG from 2000 to 2021. The search terms included 'screening,' 'China,' 'CEA,' 'CBA,' 'CUA,' and all other names for health economic evaluation. Two reviewers independently extracted data and assessed the reporting quality using CHEERS checklist. A generalized linear regression analysis was used to identify the predictors of reporting quality.

RESULTS: 133 of 1,281 identified studies was included. The reporting quality scores showed an increasing trend and the mean score was 0.56. Some items were underreported, such as study perspective, discount rate, measurement of effectiveness, analytical methods, uncertainty, heterogeneity etc. Five factors (year of publication, journal type, first author's affiliation, economic evaluation type, specialty journals or not) predicted a higher score of reporting quality in the regression analyses ($P < 0.05$).

CONCLUSION: Overall, the quality of HEEs on screening programs in China showed an improving trend. Given the significance of reporting quality, it is advisable to report HEE results following standard evaluation guidelines to improve their transparency.

Appendix 5

Analysis of factors influencing report quality of health economics evaluation of cancer screening category in China

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OBJECTIVE: This study was conducted to assess the reporting quality of health economic evaluation (HEE) on cancer screening conducted in China by utilizing the Consolidated Health Economic Evaluation Reporting Standards (CHEERS) checklist.

METHODS: PubMed, Embase, CNKI, and WanFang were searched for articles published from 2000 to 2021 using different combinations of terms. Two reviewers screened the studies by title and abstract, followed by the full text. The reporting quality of included papers was assessed by using the CHEERS. General linear regression was performed to identify the predictors of the high-reporting quality studies.

RESULTS: Of 658 retrieved papers, there were 78 that met the inclusion criteria. Chinese journals (69.2%), model-based research (61.5%) and cost-effectiveness analysis (53.8%) accounted for the largest proportion of the included studies. The average standardized score was 0.57(SD=0.13); items related to study perspective, discount rate, measurement of effectiveness, currency and price, analytical methods, uncertainty, heterogeneity and conflicts had a score lower than 0.5. General Liner Regression analysis identifies journal language type, first author affiliation and economic evaluation type as predictors of the quality of reporting assessment.

CONCLUSION: This study shows that the economic evaluation of cancer screening programs in China has gradually become a research hotspot. Cost-utility analysis and papers published in English journals had higher reporting quality. To improve the reporting quality of the study, researchers should follow reporting guidance such as the CHEERS criteria.

Appendix 6

Quality Assessment of Economic Evaluation of Stents for Patients with Coronary Heart Disease : A Systematic Review

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BACKGROUND: Although numerous economic evaluations (EEs) in selecting the most appropriate coronary stenting intervention strategies for different medical scenarios of coronary artery disease (CAD), there is a lack of quality assessment and review of these EEs for stenting interventions.

OBJECTIVE: The aim of this study was to performed a systematic review of EE s articles of coronary stent s and to critically appraise the reporting quality to provide a basis for policy decision making on the quality of evidence.

METHODS: A systematic review was performed using seven electronic databases to identify EE articles The methodological quality and reporting quality of the included articles was assessed using the CHEERS (Consolidated Health Economic Evaluation Reporting Standards) checklists. Baseline characteristics and results of the articles were extracted and stepwise multiple regress ion was used to determine factors associated with high quality studies.

RESULTS: Fifty nine articles were included in this review. Thirty three articles were cost effectiveness analyses (and twenty six articles were cost utility analyses (CUA). Quality of reporting varied between studies, with a standardized mean score of 76 ± 40 98 according to the CHEERS checklist . Compared with previous studies, the score was considered higher. According to the results of the multiple regression model, "Published year", "National type", and "Type of economic analysis" were significantly correlated with the CHEERS scores

CONCLUSION: Our study found that all of the coronary stenting EEs were CEA and CUA Although the quality of research reports on the EE s of coronary stenting is generally satisfactory, there is still room for improvement.

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