



香港社會醫學學院
HONG KONG COLLEGE OF COMMUNITY MEDICINE
founder College of the Hong Kong Academy of Medicine
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ADMINISTRATIVE MEDICINE

Part I Examination

Thursday 1 June 2023

10:30 – 13:00 (2½ hours)

Paper IA

Candidates must answer all parts of these questions

Style, clear grammatical English and legibility will be taken into consideration by the Examiners. Answers should be written in a form appropriate to the audience specified in the question.

Weighting of marks for each part of the question is shown in parenthesis.

**DO NOT OPEN PAPER UNTIL THE INVIGILATOR
INSTRUCTS YOU TO BEGIN**

1. In a systematic review, a meta – analysis of 50 randomized controlled trials (RCT) conducted in 20 different countries was conducted to assess the effectiveness of physical exercise plus dietary modification versus medications for lowering fasting blood sugar among pre-diabetes patients. A pre-specified protocol of this systematic review is not registered on PROSPERO, nor it was published in an open-access format anywhere online. According to the syntax reported in the publication, authors only performed search in CENTRAL and EMBASE with a RCT search filter with specificity maximized. From the search results, two authors independently assessed the eligibility of retrieved RCT, and extracted data from each included RCT. Disagreements were resolved by discussion, and a third reviewer was invited to make judgement when consensus cannot be reached. Risk of bias among included studies were assessed using the Cochrane Risk of Bias tool. Data from 50 different RCTs with high risk of bias in the random sequence generation domain were combined in a fixed effect meta-analysis. The results favored medications, with an I2 value of 75%. The authors used the final pooled results for supporting their

QUESTION CONTINUES

recommendation that medications should be implemented in all healthcare settings for managing pre-diabetes. A funnel plot was drawn, and obvious asymmetry was observed.

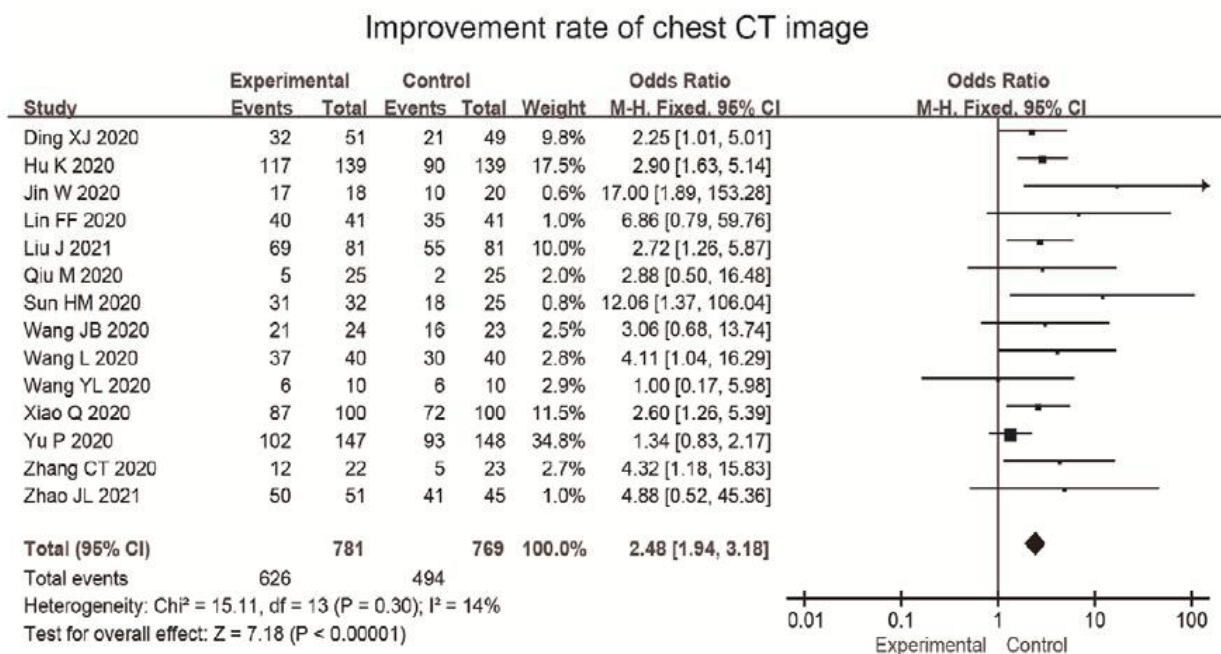
- a. Using information reported in the extract above, list at all domains of methodological quality which can be assessed according to the AMSTAR (A Measurement Tool to Assess Systematic Reviews) instrument. (4 marks)

- b. Provide your judgments on the methodological quality of this systematic review, in each of the AMSTAR domains you mentioned in (a). (6 marks)

QUESTION CONTINUES

2. Traditional Chinese Medicine (TCM) has played crucial roles in treating COVID-19 in China. A meta-analysis was conducted in order to investigate the clinical efficacy of TCM medicine in the treatment for COVID-19.

The Figure below shows one of the efficacy measures – the improvement rate of chest CT image in patients received TCM combined with conventional treatment (experimental) vs. pure conventional treatment (control) from a total of 26 studies.



Adapted from *Medicine in Novel Technology and Devices 16 (2022) Article 100139*

a. What is a meta-analysis and what are its two principal uses?

(3 marks)

QUESTION CONTINUES

- b. From the above Figure,
- i) What does a 95% confidence interval of 2.72 (1.26-5.87) tell you of the Liu J, 2021 study? (2 marks)
 - ii) What does it tell you about the heterogeneity among studies? (2 marks)
- c. Calculate the improvement rate of chest CT image for experimental and control groups. What is the conclusion of the meta-analysis shown? (3 marks)

QUESTION CONTINUES

3. The Hong Kong Academy of Medicine, Professionalism and Ethics Committee's Task Force on Social Media recently released 'Best Practice Guidelines on the Use of Social Media by Doctors and Dentists'. The issues raised and challenges faced have been highlighted by the surge in use of IT support by health care workers during the Covid-19 epidemic

- a. Define 'Social Media'. (1 mark)

- b. List at least 3 benefits and 3 key issues of concern arising from the use of social media by health care practitioners. (6 marks)

- c. Provide 3 examples of best practice general guidelines for health care practitioners, when using social media to communicate with colleagues and patients. (3 marks)

QUESTION CONTINUES

4. The population of Hong Kong is rapidly aging, fueled by a low fertility rate coupled with a very high life expectancy. Globally, a similar trend in other developed countries where “epidemiological transition from infectious to non-communicable degenerative diseases and mental illness, has aggravated the burden on the curative systems of most high- and middle-income economies”^{*} has been observed. It is critical to Hong Kong’s health care system to achieve a seamless and cost-efficient delivery of care to the elderly by moving to a more integrated model. However, there are many challenges to achieve this goal and a change in paradigm of health care services is required.

*(*He AJ, Tang VFY. Integration of health services for the elderly in Asia: A scoping review of Hong Kong, Singapore, Malaysia, Indonesia. Health Policy. 125(2021): 351-362)*

- a. What is the WHO definition of integrated health care services?
(1 mark)
- b. Share 3 reasons why is integrated care important for elderly health care services? (3 marks)
- c. What are the challenges with implementing integrated care in elderly health care services?(6 marks)

QUESTION CONTINUES

5. Read the following which was extracted from a Forbes article, and then answer the questions.

The Amazing Ways Babylon Health Is Using Artificial Intelligence To Make Healthcare Universally Accessible

Babylon, a UK start-up, plans to "put an accessible and affordable health service in the hands of every person on earth" by putting artificial intelligence (AI) tools to work. Currently, the company has operations in the UK and Rwanda and hopes to expand to the Middle East, the United States, and China. The company's strategy is to combine the power of AI with the medical expertise of humans to deliver unparalleled access to healthcare.

Babylon's engineers, doctors, and scientists developed an AI system that can receive data about the symptoms someone is suffering from, compare the information to a database of known conditions and illnesses

QUESTION CONTINUES

to find possible matches, and then identify a course of action and related risk factors. People can use the "Ask Babylon" feature to inquire about their medical concerns to get an initial understanding of what they might be dealing with, but this service is not intended to replace the expertise of a doctor or be used in a medical emergency.....

...Another feature that is available on the app is 'Healthcheck'. Built with the support of doctors, scientists and disease experts, this AI tool can take answers from questions about family history and a person's lifestyle and compare it to the medical database to then create a health report and insights to help someone stay healthy...

...In other examples, it's clear that the 'GP at Hand' app and the AI used to power its recommendations needs to continue to train and get better. Some industry watchdogs have pointed out that the chatbot doctor on 'GP at Hand' misadvised action in a potentially life-threatening situation that required immediate medical attention. More rigorous and

QUESTION CONTINUES

independent testing is still necessary before AI can be completely trusted with life or death advice.

The start-up claims that in its own tests, the AI system was spot on 80 percent of the time and that the tool was never designed to completely replace the advice of a real doctor, but actually to reduce waiting times and to help doctors make more accurate decisions. The world is facing an extreme shortage of doctors and medical professionals, and tech such as what Babylon offers is one way to help improve the healthcare of millions of people. According to NHS England, "Each safety case [of Babylon] meets the standards required by NHS and has been completed using a robust assessment methodology to a high standard."

While it might not be a perfect system, Babylon shows that artificial intelligence has progressed enough to work alongside healthcare professionals and can be a beneficial tool. But, patients still need to remain to be their own fierce healthcare advocates. If the advice received from artificial intelligence doesn't seem to hit the mark, it's good advice to

QUESTION CONTINUES

request a second opinion—from a human.

- a. What are the ethical and legal implications of using artificial intelligence (AI) and machine learning (ML) in healthcare decision-making? (6 marks)

- b. How can these implications be managed to ensure patient safety and privacy? (4 marks)

QUESTION CONTINUES

6. The Hong Kong Government has recently published a Primary Healthcare Blueprint setting out a vision for the primary healthcare system in Hong Kong. To achieve the vision, 5 reform proposals are envisaged:

- a) Develop a community-based primary healthcare system
- b) Strengthen primary healthcare governance
- c) Consolidate primary healthcare resources
- d) Reinforce primary healthcare manpower
- e) Improve data connectivity and health surveillance

Recommendations and actions are proposed to enable the reform proposals. One of the recommendations for the development of community based primary healthcare system is to introduce a chronic disease co-care scheme (CDCC scheme).

The CDCC scheme will provide targeted subsidy for diagnosis and management of target chronic diseases (especially HT and DM) in the private healthcare sector through “family doctor for all” and a multi-disciplinary public-private partnership model. Based on a co-payment

QUESTION CONTINUES

system, chronic disease patients with higher affordability are envisaged to obtain services through the network of participating primary healthcare professionals of the CDCC scheme of their choice. All primary care doctors providing primary medical care in the scheme will be required to be on the primary care register and commit to using primary healthcare reference and frameworks for chronic diseases. Service providers are subject to government's monitoring and quality assurance, and shall follow the standardized care protocol and referral mechanism for management of chronic diseases. The co-payment level from participating patients would directly affect the willingness to pay of individuals. An optimum co-payment level will be a crucial factor affecting the success of the CDCC scheme.

In a thematic household survey of the Hong Kong population by the HKSAR Census and Statistics Department, 56.5% of the elderly population aged 65 and over who do not have a chronic disease, use private outpatient services and 24.3% use public outpatients, 11.7% use both public and private. However, for the elderly population who reported

QUESTION CONTINUES

having 1 or more chronic disease, 81.6% use public outpatient services, 59% use private and 44.7% use both (Figure 1).

Hong Kong Elderly 65+

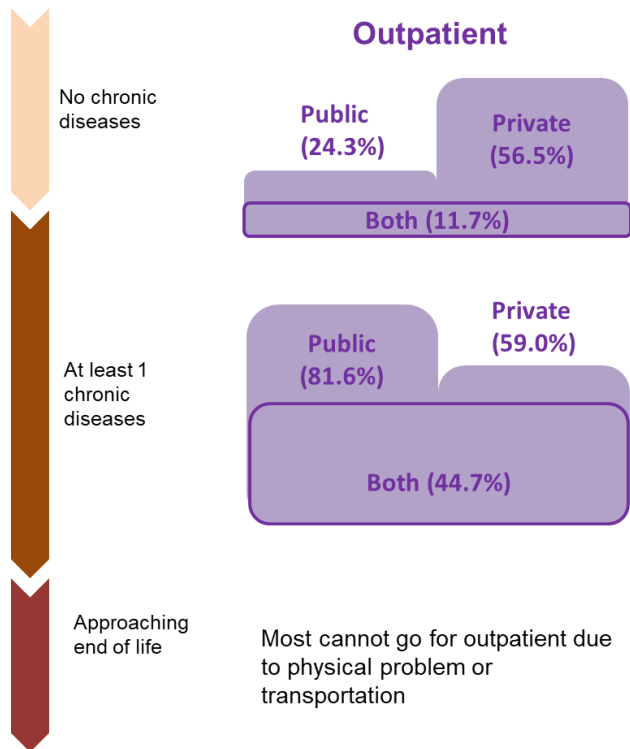


Figure 1

QUESTION CONTINUES

In a survey of Hong Kong Households, 8.4% reported they were unable to seek medical care due to lack of financial means, and were from households whose median income was \$7,668, compared to \$12,500 median income in households who reported they did not have the same financial barrier in seeking care (Figure 2).

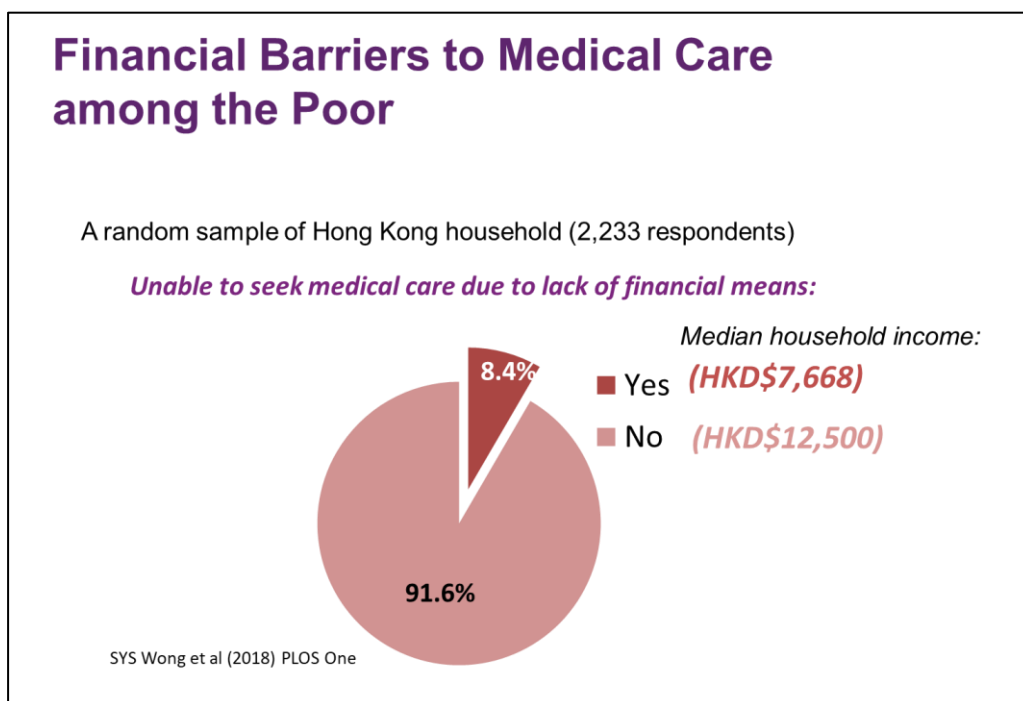


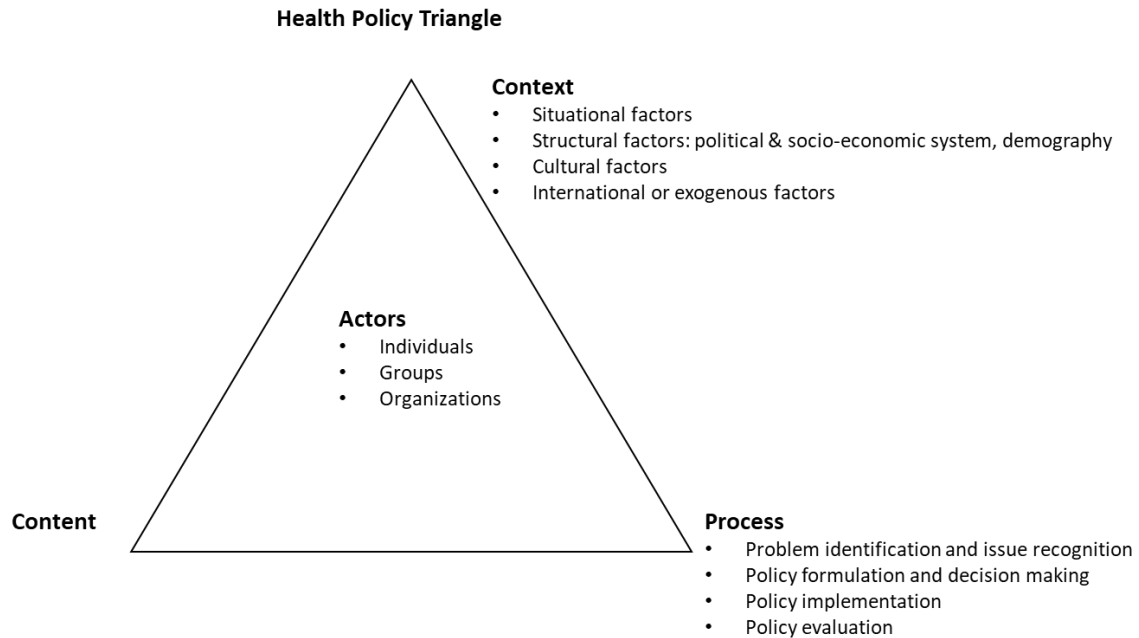
Figure 2

The phenomenon observed may be attributed to the differential cost and affordability of private healthcare for persons with chronic disease and the limited availability of subsidized public primary care.

QUESTION CONTINUES

Question

Using the Health Policy Triangle (Walt and Gilson) for the study of health policy:



Source: Walt and Gilson (1994)

QUESTION CONTINUES

- a. i) Which stakeholders (actors) should the government engage in the formulation of the CDCC scheme and (2 marks)
- ii) In your assessment what positions are the stakeholders in (a i) likely to take on the CDCC and your estimate of their level of influence in the policy formulation and decision making process for the scheme and (4 marks)
- b. Which of the multitude of barriers and facilitators would you anticipate of significance in the implementation of the scheme. (4 marks)

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