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**UNIVERSITY OF RUHUNA – FACULTY OF ALLIED HEALTH SCIENCES**

**DEPARTMENT OF PHARMACY**

**SECOND BPHARM PART II EXAMINATION – JUNE/JULY 2023**

**PH 2214 PHARMACEUTICS III – SEQ**

**TIME: THREE HOURS**

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**INSTRUCTIONS**

- There are **six** questions in this SEQ paper.
- Answer all questions.
- No paper should be removed from the examination hall.
- Do not use any correction fluid.
- Use illustrations where necessary.

**1.**

1.1. Define the following two terms. (***15 marks***)

1.1.1. Incidence

1.1.2. Prevalence

1.2.

1.2.1. State two advantages and two disadvantages of randomized controlled trials. (***20 marks***)

1.2.2. List two differences between cohort and case control studies. (***15 marks***)

1.3. A case control study has been conducted to find the association between Tamoxifen usage and risk of Parkinson's disease. Overall; 1895 participants were enrolled in this study design. This study includes 753 cases with Parkinson's disease. There were 176 cases and 43 controls taking Tamoxifen.

The ones who are using Tamoxifen are the subjects who had at least a prescription for Tamoxifen before the date. The participants who never had a prescription for tamoxifen before were considered as non-users.

1.3.1. Draw a 2 x 2 table for the above scenario. (***16 marks***)

1.3.2. Calculate the odds of exposure in cases and non–cases. (***14 marks***)

1.3.3. Calculate the odds ratio. (***10 marks***)

1.3.4. Interpret the results obtained in 1.3.3. (***10 marks***)

**2.** A multicentre study was conducted in US including the patients who are attending to 25 oncology care clinics. The objective of this study was to determine the relationship in between Platinum-based chemotherapeutic agents and ototoxic hearing loss. 5077 individuals who are attending to the 25 cancer clinics on 1st of January 2019 were recruited to the study design. The patients with any type of hearing disability were not included. On 30th of March 2019; 528 have been diagnosed with ototoxic hearing loss. After that; the remaining population who are free from hearing disabilities were enrolled in the study.

Based on the on – going treatment options at the clinics; 3042 patients were categorized as the exposure group considering the exposure to Platinum-based chemotherapeutic agents like cisplatin and carboplatin. The other remaining patients were not followed up with this treatment procedure and they were known to be the un-exposed group. 784 exposed patients and 250 un-exposed patients have developed ototoxic hearing loss throughout the follow-up period. The study was concluded exactly on 30th March 2022 after a follow – up period of three years. Assuming complete ascertainment and no drop – outs,

2.1. Name the above study design. (***10 marks***)
2.2. State two advantages and two disadvantages of carrying out the above mentioned study design. (***20 marks***)
2.3. Calculate the point – prevalence of ototoxic hearing loss on 30th March 2019. (***15 marks***)
2.4. Calculate the cumulative incidence of ototoxic hearing loss in the entire sample between 30th March 2019 and 30th March 2022. (***15 marks***)
2.5. Calculate the relative risk of getting ototoxic hearing loss in ones who are exposed to Platinum-based chemotherapeutic agents compared to others who are not. (***20 marks***)
2.6. Interpret the results you mentioned in 2.5. (***10 marks***)
2.7. Suggest two confounding factors for the above study. (***10 marks***)

**3.**

3.1. Briefly describe primary health care system in Sri Lanka. (***30 marks***)
3.2. List four public health services provided by Ministry of Health, Nutrition and Indigenous Medicine, Sri Lanka. (***20 marks***)
3.3. Mention four roles of a hospital pharmacist as a member of a healthcare team. (***20 marks***)
3.4. List three broad strategic directions of the National Health Policy of Sri Lanka. (***15 marks***)
3.5. State three objectives of the Sri Lankan National Medicinal Drug Policy. (***15 marks***)

**4.**

4.1. State four WHO criteria for the selection of essential medicines. (***20 marks***)
4.2. Briefly describe two advantages of having a limited list of essential medicines. (***20 marks***)
4.3. Briefly describe the adverse impacts of irrational drug use. (***20 marks***)
4.4. Define the term economic efficiency. List two types of economic efficiency. (***20 marks***)
4.5. A hypothetical Healthy Start Maternal and Child Health (HSMCH) Programme has reduced the low birth weight rates of newborns. The total cost associated for HSMCH Programme is estimated as $ 250,000. The monetary total benefit resulting from reduced low birth weight rates is estimated as $ 600, 000. Calculate the benefit: cost ratio of HSMCH Programme. (***20 marks***)

**5.**

5.1. List the essential information that should be included on a medication label during dispensing. (***10 marks***)
5.2. Write three key importance of packaging in medication dispensing. (***15 marks***)
5.3. Mention five ways in which extemporaneous compounding can bring benefits to pharmacy practice. (***20 marks***)

5.4. Briefly describe how the dispensing environment should be managed to facilitate proper dispensing. (*25 marks*)

5.5. Explain the concept of stock rotation and its benefits in pharmacy practice. (*30 marks*)

**6.**

6.1. Name three healthcare professionals who have the authority to write prescriptions. (*12 marks*)

6.2. Study the below prescription and write the missing information of it. (*18 marks*)

**PEDIATRICS UNLIMITED**
**1000 University Drive**
**Wellington, NM 88230**

March 10, 2009
Kevin Zadnick

NKDA
16 pounds

Amoxicillin
1 teaspoon PO BID x 10 days

**Refills: 1**
Dr. Montgomery

6.3. Write descriptions on below mentioned parts of a prescription. (*20 marks*)

6.3.1. Superscription

6.3.2. Inscription

6.3.3. Subscription

6.3.4. Signa

6.4. Research is the careful consideration of research problem using scientific methods.

6.4.1. Mention the two factors that should be considered in the ethical conduct of a research. (*10 marks*)

6.4.2. Read the abstract given in the next page and answer the following questions. (*40 marks*)

6.4.2.1. Mention the type of the research study.

6.4.2.2. What is the objective of this research study?

6.4.2.3. Mention the study setting of this research.

6.4.2.4. What is the study instrument used in this research?

Original Article

# Dispensing Errors in Community Pharmacies: A Prospective Study in Sana'a, Yemen

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## Abstract

**Aims:** The aim of this study was to determine the dispensing errors that occurred during the dispensing process in a selected community pharmacies in the capital Sana'a, Yemen. **Methodology:** A prospective study was conducted among community pharmacies in the capital Sana'a, Yemen over three months period from mid-January till mid-April 2017. Dispensing errors that were detected during the dispensing process were recorded by the pharmacy dispensers using a data collection form. Detecting and reporting of dispensing errors, types and causes of dispensing errors was explained to the participated pharmacists before starting the study. The data were descriptively analyzed using Statistical Package for the Social Sciences® (IBM SPSS) version 21 for Windows. **Results:** A total of 47 (0.82 %) dispensing errors were reported in this study. Wrong dosage form was the most common dispensing error type reported in this study followed by wrong strength, wrong quantity, drug available in the pharmacy but not given and wrong drug. Factors most commonly reported as contributing to dispensing errors in this study were: prescriptions poor handwriting, similar medications packaging, medication on shelves not arranged correctly, similar drug names and work load. **Conclusion:** This study explored the type and causes of dispensing errors at five community pharmacies in the capital Sana'a Yemen. Dispensing errors can be prevented by educational interventions about dispensing errors and its potential causes. Effective collaboration and communication between community pharmacy disspensers and prescribers is an important key to minimize and prevent dispensing errors.

**Keywords:** Drug Safety, Medication Errors, Human Resource, Patient Safety

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