

**Nursing Performance Regarding
Intravenous Infusion of Look Alike
Sound Alike Medications at
Intensive Care Unit**

Thesis

*Submitted for Partial Fulfillment of Master Degree
in Medical Surgical Nursing "Critical Care"*

By

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2018**

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2018



Acknowledgement

*Thanks to **Allah** who have lightened my path to accomplish this work,*

The few words I wrote here can never and can't adequately express the feelings of gratitude; I have for my supervisors and the persons, who helped me to achieve this work, If I am to vote the heartiest thanks, it is to;

*I am deeply grateful to **Prof. Dr. Manal Salah Hassan**, Professor of Medical Surgical Nursing, Faculty of Nursing, Ain Shams University, for her prompt and thought provoking responses to my questions and for allowing me the freedom to work independently yet keeping me focused on the task at hand, I greatly acknowledge her continuous encouragement and moral support. It was really an honor working under her wonderful supervision and for all her valuable efforts to produce this thesis. I cannot possibility convey words of my great appreciation for her great faithful effort in supervision during the progress of this work, without her valuable instructions this work would never have been done.*

*It is with great pleasure, deep satisfaction and gratitude that I acknowledge the help of **Dr. Asmaa Mohamed Mahmoud**, Lecturer of Medical Surgical Nursing, Ain Shams University, for her unlimited help, effort, support, guidance and for the time she devoted to me in this work, I would not have been able to start and continue this work without her help.*

I would like to express my deepest thanks to all who helped me by time, effort and spirit in fulfilling this work,

Last but not least, my deepest gratitude and thanks to all my family members.

Ahmed Gamal Fahmy □

LIST OF CONTENTS

<i>Title</i>	<i>Page</i>
- List of Tables.....	I
- List of Figures.....	III
- List of Abbreviations.....	IV
- Abstract.....	V
▪ Introduction	1
▪ Aim of the Study	5
▪ Review of Literature	6
▪ Subjects and Methods	44
▪ Results	57
▪ Discussion	74
▪ Conclusion	95
▪ Recommendations	97
▪ Summary	99
▪ References	107
▪ Appendices	129
▪ Protocol	
▪ Arabic Summary	

LIST OF TABLES

<i>No.</i>	<i>Table</i>	<i>Page</i>
Tables in Review of Literature		
1	Some of the problematic Drug Names.	10
2	Top 10 Look-alike\Sound-alike Drug Name Pairs.	13
3	Types of Medication Error.	22
4	List of drug written with Tall man lettering to avoid medications confusion associated with look-alike \sound alike medications.	30
5	Some of the actions for preventing LASA drug confusion in hospital setting (by Recommendations of Italian Ministry of Health).	32
6	The Ten Rights of Medication Administration.	35
7	The most common zeros and abbreviations that lead to medication errors.	40
Tables in Results		
1	Demographic characteristics for the studied nurses.	58
2	Nurses' level of knowledge regarding intravenous infusion of look-alike\ sound-alike medications.	60
3	Nurses' level of practice regarding intravenous infusion of look-alike\ sound-alike	62

<i>No.</i>	<i>Table</i>	<i>Page</i>
	medications.	
4	Total nurses 'attitude to possible clinical situations during administration of look-alike\ sound-alike medication errors reporting.	64
5	Relation between nurses' level of knowledge and their practice regarding intravenous infusion of look-alike\ sound-alike medications.	65
6	Relation between nurses' level of knowledge and their attitude regarding intravenous infusion of look-alike\ sound-alike medication.	66
7	Relation between nurses' level of practice and their attitude regarding intravenous infusion of look-alike\ sound-alike medications.	67
8	Relation between nurses' level of knowledge and their Demographic characteristics regarding intravenous infusion of look-alike\ sound-alike medications.	68
9	Relation between nurses' level of practice and their Demographic characteristics regarding intravenous infusion of look-alike\ sound-alike medications.	70
10	Relation between nurses' level of attitude and their Demographic characteristics regarding intravenous infusion of look-alike /sound-alike medications.	72

LIST OF FIGURES

<i>No.</i>	<i>Figure</i>	<i>Page</i>
Figures in Review of Literature		
1	Look -alik TraZODONE and traMADOL bottles from Teva.	11
2	Sound alike Thyroxine and Lanoxin.	12
3	Five stages of the drug system.	18
4	Illegibility of hand writing.	27
5	Abbreviation at prescription.	27
Figures in Results		
1	Total nurses knowledge regarding intravenous infusion of look-alike/sound-alike medications.	59
2	Total nurses' practice regarding intravenous infusion of look-alike/sound-alike medication.	61
3	Total nurses' attitude regarding to the safety measures during administration of intravenous infusion of look-alike/sound-alike medications.	63

LIST OF ABBREVIATIONS

<i>Abb.</i>	<i>Meaning</i>
CAPCA	The Canadian Association of Provincial Cancer Agencies
FDA	Food and Drug Administration
HAMs	High Alert Medications
IMSN	International Medication Safety Network
INNs	International Non- proprietary Names
ISMP	Institute For Safe Medication Practice
IV	Intravenous
LASA	Look Alike Sound Alike
MAR	Medication Administration Record
NaCl	Sodium chloride
PA-PSRS	Pennsylvania- Patient Safety Reporting System
SD	Standard Deviation
SPSS	Statistical Program for Social Science
US	United State
USP	United States pharmacopeia
WFI	Water For Injection
WHO	World Health Organization

**Nursing Performance Regarding Intravenous Infusion of Look Alike Sound
Alike Medicatons at Intensive Care Unit**

Abstract

Despite significant advances in medication safety, errors related to confusion between drug names are a cause of preventable adverse events and serious harm, and remain a patient safety priority. Although drug name confusion is recognized as a factor contributing to error, its minimization or elimination is a prevailing challenge. **Aim of the study:** assess nursing performance regarding Intravenous infusion of look-alike /sound-alike medications at intensive care unit. **Design:** A descriptive exploratory design was utilized. **Setting:** The study was carried out in critical care units (General ICU, Neuro ICU, Chest ICU) at Beni Suef University Hospitals. **Study subjects:** convenience sample of 30 nurses were included in the study. **Data collection tools.** Data were obtained through three main tools; Look Alike Sound Alike (LASA) Safety Assessment Questionnaire, Intravenous infusion of look-alike\ sound-alike Medications Observational checklist and Nurses' attitude regarding LASA Safety Measures. **Results:** 46.7% of nurses were between 25-30 years old, 76.7% of them were females, 40.0% of them had 5-10 years of experience, 43.3% of them had bachelor degree and 60.0% had previous training courses regarding look-alike\sound-alike medications. Also, it was showed that 70% and 73.3% of them had satisfactory level of knowledge And practice and 46.6% of them had positive attitude regarding intravenous infusion of look-alike/sound-alike medications. **Conclusion:** it was showed that about three quarter of nurses had satisfactory level of knowledge and practice. While, it was showed that less than half of them had positive attitude regarding to the safety measures during administration of intravenous infusion of look-alike/sound-alike medications at intensive care unit. Also, more than half of theme had unsatisfactory level of errors reporting during administration of intravenous infusion of high alert look-alike\sound-alike medications. There was statistical significant relation found between nurses level of knowledge and practice and also, between nurses' attitude and practice. **Recommendation:** Incorporating education on potential LASA medications into the educational curricula, providing ongoing nursing courses regarding LASA medications, continuing professional development for health care team and further researches should be done on LASA medication administration.

Keywords: Intravenous Infusion, Look-Alike/Sound-alike medications, performance (Knowledge, Practice, Attitude)

Introduction

A medication is administered for its therapeutic effects through modifying body functions. It is used for prevention, diagnosis or treatment of disease. Medications can be administered by different routes as oral, parenteral, topical and inhalation medication therapy to improve therapeutic outcomes and quality of life, while minimizing the risk of harm to the patient. Look-alike/Sound-alike medications threaten these goals (**Timby, 2011**).

Look alike and sound alike (LASA) involve drugs that are visually similar in physical appearance or packaging and names of medications that have spelling similarities and/or similar phonetics. Despite their similar names, the drugs often have very different action within the body, and mistaking one for the other could have devastating effects. Awareness of the danger of LASA drugs and clear communication, whether written or spoken, is essential and could even save someone's life (**Galanter and Bryson. 2014**).

According to the eighth annual MEDMARX Data Report published by the United States pharmacopeia (USP), 1,470 different drugs are implicated in medication errors due to similarities between their brand or generic names. Based on review of more than 26,000 records

submitted to the MEDMARX database from 2003 to 2006, USP compiled a list of 3,170 look-alike and sound-alike drug name confusions. This list contains nearly twice as many medication name errors as the last MEDMARX report (**Alqahtani, 2015**).

The increasing numbers of LASA medication was also highlighted in the Joint Commission's Sentinel Event Alert such as Insulin products (Novolin (human insulin products, Novolog (human insulin apart), Novolin 70/30 (70% isophane insulin and 30% insulin regular). Similar names, strengths and concentration ratios have contributed to medication errors. Mix-ups may result in hypoglycemia or poor diabetes control. Catapres (clonidine), Klonopin (clonazepam). The generic name of clonidine can easily be confused as the trade or generic name of clonazepam. Mix-ups may result in hypotension, loss of seizure control, or other serious adverse events (**The Joint Commission, 2017**).

Several strategies have been proposed to reduce LASA medication errors including the use of Tall Man lettering, computerized provider order medication entry with (or without) electronic prescription transmission, medication reconciliation processes, barcode systems, and package changes. Additional proposed measures include enhancing labeling for injectable medications that have

similar appearing packaging, including security symbols, putting special labels on packaging of high-risk drugs, and revising processes for selecting, maintaining and updating the list of LASA drugs (**Berner, 2015**).

Nurses play an important role in reducing the risk of LASA. They should ensure that health-care organizations actively identify and manage the risks associated with LASA medications by annually reviewing the LASA medications used in their organization, implementing clinical protocols which minimize the use of verbal and telephone orders, emphasize the need to carefully read the label each time a medication is accessed and again prior to administration, The nurse also emphasized the need to check the purpose of the medication on the prescription/order, and prior to administering the medication (**Hoffman, 2013**).

Significance of this study:

However, with increasing number of medicines, slowly creeps in different problems, among them is a problem of confusing drug names. They may either look-alike (orthographic) or sound-alike (phonological) Confusing drug name pairs that look-alike or sound alike are generally known as LASA medicines or sound alike-look-alike drugs “SALAD”. There are many look-alikes,

sound alike medication pairs in different countries. Such drug pairs are now increasingly being studied in much more detail at national level and at international level so as to reduce the medication errors (**Gardiner & Kyle, 2015**), therefore, this study has been carried out to explore nurses' performance regarding look-alike/sound-alike medications and to contribute in develop nurse' guidelines to control medication errors related to look-alike/sound-alike medications.

Aim of the Study

This study aimed to assess nursing performance regarding intravenous infusion of look-alike /sound-alike medications at intensive care unit through:

- 1-Assessing nurses' level of knowledge regarding intravenous infusion of Look Alike / Sound Alike medications.
- 2-Assessing nurses' level of practice regarding intravenous infusion of Look Alike / Sound Alike medications.
- 3- Assessing nurses' attitude regarding intravenous infusion of Look Alike / Sound Alike medications.

Research questions:

To fulfill the aim of this study the following research questions were formulated:

1. What is the nurses' level of knowledge regarding intravenous infusion of Look Alike / Sound Alike medications?
2. What is the nurses' level of practice regarding intravenous infusion of Look Alike / Sound Alike medications?
3. What is the nurses' attitude regarding intravenous infusion of Look Alike / Sound Alike medications?

Review of Literature

Definition of Drug:

A drug is an any substance other than food, that when inhaled, injected, smoked, consumed, absorbed via a patch on the skin or dissolved under the tongue causes a physiological change in the body (**Atanasov, Waltenberger, Linder and Uhrin, 2015**).

In pharmacology, a pharmaceutical drug, also called a medication or medicine, is a chemical substance used to treat, cure, prevent, or diagnose a disease or to promote well-being. Traditionally drugs were obtained through extraction from medicinal plants, but more recently also by organic synthesis. Pharmaceutical drugs may be used for a limited duration, or on a regular basis for chronic disorders. Bioavailability and route of administration are two main factors determine whether or not a drug will reach its intended site of action in the body (**Bergström, Andersson and Fagerberg, 2014**).

Bioavailability is the proportion of an administered drug that reaches the systemic circulation and is therefore available for distribution to the intended site of action. Drugs that are given by direct IV injection are said to have 100% bioavailability. Some drugs that are particularly well