THE EFFECT OF INCREMENT THICKNESS AND LIGHT CURING DISTANCE ON FLEXURAL STRENGTH, MICROHARDNESS AND CYTOTOXIC BEHAVIOR OF TWO BULK-FILL RESIN-BASED MATERIALS

Thesis

Submitted to the Faculty of Dentistry, Ain Shams University in Partial Fulfillment of the Requirements for the PhD Degree in Conservative Dentistry

By

Dena Safwat Mohamed Mustafa

B.D.S, Ain Shams University, 2004

M.Sc., Ain Shams University, 2011

2015

Supervisors

Dr. Farid Mohammed Sabry El-Askary

Professor and Head of Operative Dentistry Department

Faculty of Dentistry

Ain Shams University

Dr. Khaled Aly Nour

Assistant Professor of Operative Dentistry

Faculty of Dentistry

Ain Shams University

Acknowledgements

الحمد لله الذي تتم بفضله الصالحات

I would like to thank **Dr. Farid Mohammed Sabry El-Askary,** *Professor and Head of Operative Dentistry Department, Faculty of Dentistry, Ain Shams University*, for challenging us to persevere and *x*-ceeding our own limitations throughout the course of this work and for his supervision *x*traordinaire.

Also, I would like to thank **Dr. Khaled Aly Nour,** *Assistant Professor of Operative Dentistry, Faculty of Dentistry, Ain Shams University*, for his constant valuable advice, *x*-treme patience, and support when it counted the most.

I would also like to thank **Eng. Effat Mokhtar** for the manufacturing of the molds necessary for specimens' preparation.

I would also like to extend my sincere thanks go to my esteemed colleagues at testing facilities for their most appreciated help and cooperation;

Dr. Ahmed El-Banna,

Assistant Lecturer, Dental Materials Department, Ain Shams University.

Dr. Lamia Moharam,

Lecturer, Operative Dentistry Department, National Research Center.

Dr. Serag ElDin ElBeheiri,

Technical Assisting Director Cell Culturing, Tissue Culturing Lab, Vacsera.

I would like to thank my colleagues at *Operative Dentistry Department, Ain Shams University* for their support especially fellow *Assistant Lecturer* **Dr. Rana AbdelRehim**, whom I thank not only as a colleague but a friend and sister; to whom I owe the completion of this work, against all odds.

Finally, I would like to thank VOCO Company (VOCO, GmbH, Cuxhaven, Germany) for supplying the materials used in this study.

Dedication

To Mom and Dad.

I stand tall because of you. You are my reason.

Big Brother

I know you always got my back.

LIST OF CONTENTS

LIST OF FIGURES

LIST OF TABLES