



بسم الله الرحمن الرحيم

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تم رفع هذه الرسالة بواسطة / هناء محمد علي

بقسم التوثيق الإلكتروني بمركز الشبكات وتكنولوجيا المعلومات دون أدنى

مسئولية عن محتوى هذه الرسالة.

ملاحظات:

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Relationship between Frailty and Geriatric syndromes among elderly attending two Primary health care centers in Cairo

Thesis

**Submitted for Partial Fulfillment of Master degree
In Public health**

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2022

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

قَالَ

سَبِّحْكَ لَا إِلَهَ إِلَّا مَا عَلَّمْتَنَا إِنَّكَ أَنْتَ
الْعَلِيمُ الْعَظِيمُ

صدق الله العظيم

سورة البقرة الآية: ٣٢

Acknowledgments

First and forever, thanks to **Allah**, Almighty for giving me the strength and faith to complete my thesis and for everything else.

Then I would like to express my sincere appreciation and gratitude to **Prof. Dr. / Iman Mohammed Ahmed Bakr**, Professor of public health, At Department of Community, Environmental and Occupational medicine - Ain Shams University, for her great support all through the whole work, for her valuable guidance, and follow up of the progress of this work. I have been greatly honored by her supervision.

Profound and ultimate gratitude are expressed to **Prof. Dr / Sarah Ahmed Hamza**, Professor of Geriatrics and Gerontology, At Department of Geriatrics and Gerontology- Ain Shams University, for her great support all through the whole work, for her valuable guidance, and follow up of the progress of this work. I have been greatly honored by her supervision.

I would like also to thank with all appreciation **Dr. / Mohamed Abdel Maguid Tolba Momen**, Assistant professor, At Department of Community, Environmental and Occupational medicine - Ain Shams University, for his great support all through the whole work, for his valuable guidance, and follow up of the progress of this work. I have been greatly honored by his supervision.

I would like also to thank with all appreciation **Dr. Ayat Farouk Manzour**, Assistant professor At Department of Community, Environmental and Occupational medicine - Ain Shams University for her great support all through the whole work, for her valuable guidance, and follow up of the progress of this work. I have been greatly honored by her supervision.

I would like to thank my **Parents** and my **Husband**, who sacrificed a lot for me for their continuous support, endless help and encouragement.

 **Ghada Saad Mohamed**

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List of Abbreviations

Abbr.	Full term
AD	: Alzheimer's Disease
ADL	: Activities of Daily Living
ADRs	: Adverse Drug Reactions
ARMOR	: Assess Review Minimize Optimize Reassess
BMD	: Bone Mineral Density
BMI	: Body Mass Index
CAPMAS	: Central Agency for Public Mobilization and Statistics
CDP	: Computerized Dynamic Posturography
CGA	: Comprehensive Geriatric Assessment
CHESS	: Changes in Health, End-stage disease and Symptoms and Signs
CHS	: Cardiovascular Health Study
CLA	: Cognitive leisure Activities
CMV	: Cytomegalovirus
COPD	: Chronic Obstructive Pulmonary Disease
CRP	: C - reactive protein
CSHA	: Canadian Study of Health and Ageing
CVD	: Chronic Kidney Disease
DHEAS	: DeHydro Epi Androsterone Sulfate

DVT	: Deep Venous Thrombosis
EH	: Estimated Height
FGA	: Functional Gait Assessment
GDS	: Geriatric Depression Scale
GFI	: Groningen Frailty Indicator
GS	: Geriatric Syndromes
GWAS	: Genome Wide Association Studies
HF	: Heart Failure
HIV	: Human immunodeficiency virus
MCI	: Mild Cognitive Impaired
MCPS	: Marigliano-Cacciafesta Polypathological Scale
MEP	: Multicomponent Exercise Program
MI	: Myocardial Infarction
MMSE	: Mini Mental State Examination Test
MNA	: Mini Nutritional Assessment
MUFAs	: Mono Unsaturated Fatty Acids
MUI	: Mixed Urinary Incontinence
OAB	: Overactive Bladder
OT	: Occupational Therapy
PHCs	: Primary Health Care Centers
PP	: Polypharmacy

PSI	: Pounds per square inch
QOL	: Quality Of Life
SD	: Standard Deviation
SHARE	: Survey of Health, Ageing and Retirement in Europe
SOF	: Study of Osteoporotic Fractures
SPSS	: Statistical Package for Social Sciences
START	: Screening Tool used to Alert doctors to the Right Treatment
STOPP	: Screening Tool to Older Person's potentially inappropriate Prescriptions
SUI	: Stress Urinary Incontinence
TAC	: Total Antioxidant Capacity
TFI	: Tilburg Frailty Indicator
UI	: Urinary Incontinence
UUI	: Urgency Urinary Incontinence
VR	: Vestibular Rehabilitation
Vo2	: Maximal Aerobic Power
VTE	: Venous Thromboembolism
WBC	: White blood Cell

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Introduction

People is in continues aging worldwide. In 2012, 8% (or 562 million) of people were aged 65 and over. In 2015, 3 years later, the proportion of the older population reached 8.5 % of the total population. The next 10 years will witness an increase of about 236 million people aged 65 years and older all over the world **(He et al., 2015)**.

United Nations reported that by 2050, one-fifth of the world's population will be over 60 years of age **(Safarpour et al., 2018)**.

In Egypt, the percent of population above the age of 60 years was 6.7 percent of Egypt population in 2017. This percent represents around six million citizens, according to Central Agency for Public Mobilization and Statistics (CAPMAS) **(CAPMAS, 2017)**.

This aging of the population will increase the prevalence of chronic diseases and functional impairment. This expected increase will also lead to increase utilization of the health care system **(Senn et al., 2015)**.

Frailty is a common ageing problem that increases the risk of getting adverse health outcomes in elderly **(Setiati et al., 2017)**. It is a condition of vulnerability to poor resolution of homoeostasis after a stressor event. It is an outcome of cumulative decrease in many physiological systems during a lifetime. This cumulative decline depletes homoeostatic reserves until minor stressor causes disproportionate changes in health status **(Clegg et al., 2013)**. It can be considered as state of diminished physiological reserve over multiple organ systems **(Partridge et al., 2012)**.

Physical frailty can be defined as a medical syndrome with many causes and contributors and it is characterized by diminished strength, endurance, and reduced physiologic function which increases an individual's vulnerability to develop increased dependency and/or death” **(Morley et al., 2013).**

Pre-frailty defined as a multi-factorial and multi-dimensional syndrome which is associated with social isolation, functional, sensory and physiological impairment. Pre-frailty was also characterized by weakness, fatigue, tiredness, being slowed up or tired all the time. It could be considered as the first stage towards developing frailty or as a reversible stage before frailty **(Sezgin et al., 2020).**

The term geriatric syndromes (GS) has been used to describe common conditions in the elderly, although not characterized as diseases, but they can lead to disability and death. GS were announced by Bernard Isaacs (1969), who called them ‘Giants of Geriatric Medicine’ and included cognitive incapacity, postural instability, immobility, urinary incontinence and iatrogenesis (poly-pharmacy) **(Closs et al., 2016).**

These "chronic" geriatric syndromes differ from "chronic disease" in the sense that they have multiple underlying factors and involve multiple organ systems and their impact on quality of life and disability is considerable. However, if recognized early, preventative measures can be initiated to reduce part of the burden notably by decreasing the risk of hospitalization and institutionalization and improving the quality of life (QOL) of elderly patients **(Senn et al., 2015).**

Geriatric syndromes can't be treated by medication, but well-planned care can prevent their progression **(Kozaki et al., 2013).**

There is a greater chance of the elderly becoming frail as the number of geriatric syndromes accumulates. Frail elders also have an increased risk of developing other geriatric syndromes. Knowing this dynamic can assist in interventions to prevent the development of geriatric syndromes that may lead elderly persons to an increased risk of frailty **(Closs et al., 2016)**.

Mild Cognitive Impaired (MCI) is defined as a transitional stage from normal to dementia. Patients affected with this condition have a higher possibility to develop Alzheimer's disease (AD) with the average rate of 10–15% annually over 5 year **(Da Silva. 2015)**. A number of studies have reported that frailty increases the risk of future cognitive decline and this cognitive impairment increases the risk of frailty which suggests that cognition and frailty interact within a cycle of decline associated with ageing **(Robertson et al., 2013)**.

Polypharmacy was defined as the use of multiple drugs more than are medically necessary **(Maher et al., 2014)**, or the administration of more medications than are clinically indicated, representing unnecessary/unwanted drug use **(Dagli et al., 2014)**. Other studies used Numerical definitions. The most used numerical definition is ≥ 5 drugs **(Masnoon et al., 2017)**. It was reported that older frail people are significantly more likely to be exposed to high-risk prescribing than robust older people, and that exposure to high-risk medications was significantly associated with the development of frailty **(Gnjidic, et al., 2012)**.

Postural instability (falls) was considered the third frequent syndrome among the elderly and alterations in balance were more frequent among the frail elderly **(Closs et al., 2016)**. It can lead to changes in gait (which is a frailty criteria) and increases the risk of falls **(Coimbra et al., 2010)**. Falls