

Influence of Counseling Intervention on Enhancement of Awareness and Reducing Burdens among Caregivers of Patients with Alzheimer

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Abstract

Background: Alzheimer's disease is a social care problem and is one of the main causes of disability in later life. Caring for a patient with Alzheimer's disease is associated with much of the burden on family members **Aim of the study** This study aimed to investigate the influence of counseling intervention on enhancement of awareness and reducing burdens among caregivers of patients with Alzheimer. **Design:** A quasi-experimental design was used to conduct the study. **Setting:** This study was conducted at Out-Patient Clinic of geriatric medical unit Centre in affiliated to Ain shams university hospitals. A purposive sample was obtained included 50 caregivers accompanying their Alzheimer's patient. **The data** was collected by using three tools: First tool: interviewing questionnaire to assess socio-demographic data of caregivers and clinical history of patients. Second tool: Caregivers' awareness regarding Alzheimer disease to assess the caregivers' knowledge, attitude, and reported practices regarding Alzheimer disease. Third tool: caregivers' burden scale to assess the level of burden among caregivers. **Results:** The study results revealed that there was a highly statistically significant improvement of caregivers' awareness, reported practices, and total scores of the caregivers' burdens towards caring for their patients with Alzheimer after implementation of the intervention ($p < 0.001$). As well there was a highly statistically significant correlation between caregivers' burden and their knowledge, attitudes, and reported practices toward their patients with Alzheimer ($p < 0.001$). **Conclusion:** It was concluded that the application of counseling intervention improved caregivers' awareness through enhancing their knowledge, attitudes, and reported practices and reducing their burdens toward their patients with Alzheimer disease. **Recommendations:** Further studies should be done for family caregivers in their early caring process to optimize their well-being through nursing intervention programme on reducing the degree of burden with improving their ability for solving the problem.

Keywords: Alzheimer disease –Counseling intervention- Caregivers' awareness - Caregivers' Burden.

Introduction

Alzheimer's disease (AD) is a progressive neurodegenerative disease posing a tremendous burden for patients, caregivers, and health care systems. Disease symptomatology includes, most

notably, impaired cognition, as well as impairments in daily activities and increasing functional dependence. These symptoms generate an increase in the care required, often provided by family caregivers (Goren, 2016). Alzheimer's disease (AD) is the most common

dementia etiology. AD prevalence varied among studies done in different areas in Egypt was ranged from 2.01% to 5.07%; with a higher prevalence among females than males in the age group ranged from 50 to 79 years old (Elshahidi et al., 2017).

Alzheimer's is called a family disease because it does not simply affect the person who has it. Rather, it significantly changes the natural life of those family members closely related to that person. For some caregivers, the time of diagnosis brought great frustration due to in-existent communication with health services, constant change of informal care providers, and also lack of information. It also has a major impact on the everyday living of families, placing an emotional burden on the whole family unit. AD can cause changes in family structure and roles. Children become caregivers of their demented parents, looking after them and taking on the duties of care a situation that may create conflict and burden if not handled properly (Liu, 2020).

Caregivers face several obstacles, they are at increased risk for burden, stress, depression, and a variety of other health complications. Caring for a person with Alzheimer's is more stressful than caring for a person with a physical disability. So, the burden of caregiving in AD can lead to both physical and psychological illnesses, it is essential to ensure that caregiver well-being is maintained as the patient's disease progresses (Karagiozi, 2017).

Psychiatric mental health as well gerontological nurses have an essential role in providing support and guidance to caregivers, through conducting multiple counseling sessions especially at early diagnosis of their client, which has been shown to reduce caregiver distress, assist

patients to stay at home longer, and inform caregivers about support organizations. help them to identify potential ways to improve daily tasks, resulting in a more positive experience (Lindeza, 2020).

Counseling intervention is a way of promoting help for caregivers of patients with Alzheimer's disease through providing information about the patient's disease process, available resources and services, and training for caregivers so they can effectively respond to disease-related issues in the individual that might assist caregivers. Constant exposure to negative events indicates the burden imposed by the caring activities (Cheng et al., 2019).

Significance of the study

Alzheimer's disease is a highly frequent type of dementia as it affects up to 75% of the 35 million people overworld. It is mostly diagnosed in people over 65 years, but a less prevalent early-onset form sometimes develops at an earlier age group. The prevalence of Alzheimer's disease is doubled every 20 years (El Tallawy et al., 2019). In recent years, the prevalence of Alzheimer disease became huge and is considered one of the greatest healthcare challenges of the 21st century due to the high demand for medical, social, and institutional care (Lindeza, 2020).

As well as it has a major influence on the everyday living of families and placing an emotional burden on the whole family unit. AD can cause changes in family structure and roles. Caring for an elderly patient with AD demands almost constant commitment from the caregiver, who must sacrifice their habitual activities to perform the role. Some caregiver up their jobs or professions and

stop living their own lives, often leading to their burden. Awareness for caregiving has a broad effect on multiple indicators of well-being among family members, the lack of awareness is a precursor of negative outcomes of caregiving in caregivers associated with generally lower levels of caregiver stress and burden.

Family caregivers of patients with AD often have a lack of formal training for the caregiving role and are not aware of the various environmental adaptations and caregiving strategies that may be helpful. Caregivers who had high levels of awareness reported lower levels of role strain, experienced less difficulty in caregiving, and less negative well-being, even when they had to provide for a greater level of caregiving demands (Liu, 2020). Therefore, counseling intervention is very important to provide information to caregivers regarding the disease and guidelines for more effective care. It helps caregivers in making difficult decisions that concern the caring and the management of their patients with Alzheimer and learn them to be flexible in the negotiation of alternative solutions caregivers about the disease, to provide better treatment, and to help caregivers to share their experiences and thoughts which can help to reduce their burden which usually they face (Cheng et al., 2019). So, this study aimed to investigate the influence of counseling intervention for enhancing awareness and reducing the burdens among caregivers of patients with Alzheimer.

Aim of the Study

This study aimed to investigate the influence of counseling intervention on enhancement of awareness and reducing burdens among caregivers of patients with Alzheimer

It was achieved through:

- Assessment of caregivers' awareness (knowledge, attitudes, and reported practices) toward their patients with Alzheimer disease.
- Assessment of caregivers' burden of care regarding their patients with Alzheimer disease.
- Developing and implementing counseling sessions to improve caregivers' awareness (knowledge, attitudes, and reported practices) toward their patients with Alzheimer disease and reducing their burden of care.
- Evaluating the effect of counseling intervention on caregivers knowledge, attitudes reported practices, and reducing their burden of care

Hypothesis:

Counseling intervention will improve caregivers' awareness through enhancing their knowledge, attitudes, reported practices and reducing their burden of care toward their patients with Alzheimer disease.

Material and Methods

Technical design:

Research design:

A quasi-experimental design was utilized to conduct the study.

Setting:

This study was conducted at the Out-Patient Clinic of geriatric medical Centre affiliated to Ain shams University Hospitals, which is one from the oldest

and biggest treatment and follow-up clinic for Alzheimer patients in Cairo.

Subjects:

A purposive sample was obtained from all family caregivers (50) who attends with their patients who have been newly diagnosed with Alzheimer disease during the last 6 months, who are coming to the above-mentioned setting during the time of data collection; were included in the study. The subjects met the following criteria:

Inclusion criteria for caregivers

- The primary caregiver of the patient and his/her age more than 18 years old
- Both sexes (males and females)
- Free from significant psychological co-morbidities.

Inclusion criteria for patients

- Patients are newly diagnosed with Alzheimer disease during the last 6 months
- Both sexes (males and females)
- Free from any psychiatric disorders.

Data Collection Tools:

The tools used in the study for data collection were:

I) An interviewing questionnaire: it was designed by the researchers, based on the literature review to assess socio-demographic data of caregivers and patients with Alzheimer in addition to clinical data of the patient which divided as the following: -

a. Socio-demographic data of caregivers and their patients with Alzheimer such as age, sex, socio-economic status, level of education, occupation, and degree of relationship with the patient.

b. Clinical history of patients with Alzheimer as the onset of illness, stages of the disease, duration of symptoms of the disease, and family history.

II) Caregivers' awareness regarding Alzheimer disease: it was designed by the researchers to assess the caregivers' knowledge, attitude, and practice regarding Alzheimer disease as the following:

a. Questions to assess caregivers' knowledge about Alzheimer disease (definition, causes, manifestations, stages, associated disturbance, treatment, and pattern of caring).

b. Questions to assess caregivers' positive and negative attitudes toward their patient with Alzheimer disease.

c. Questions to assess caregivers' reported practices toward their patient with Alzheimer disease, will be through assessing the possible caregivers' responses towards patient undesirable behavior related to disease symptoms.

Scoring system of caregivers' awareness regarding Alzheimer's disease: A scoring system was followed to obtain the outcome of caregivers' knowledge, attitudes, and practices according to the following:

a. As regards caregivers' knowledge, the questionnaire included six questions, these questions were graded into three Likert scales as correct complete answer = 2 degrees,

correct incomplete answer = 1 degree, and incorrect answer = 0

The total scores of the items were summed up, these scores were converted into the following percentage:

Good = scores from $\geq 75\%$,
Average = scores from 50 % to $< 75\%$,
and Poor = scores from $< 50\%$

b. As regards caregivers' positive and negative attitudes, questionnaire 26 included fifteen questions. The answer of them was graded as "agree" = 2 and the answer with "disagree" = 1. According to caregivers answers, their attitudes were considered negative if $< 60\%$ and positive if $\geq 60\%$

c. As regards caregivers' reported practices and responses toward their patients, the questionnaire included twelve questions. The answer them was graded into three Likert scales as the answer of always = 2, sometimes = 1, and never = zero. According to caregivers' answers, their practices were collected into adequate practices $\geq 60\%$ and inadequate practices $< 60\%$.

Validity & Reliability:

The developed tool was reviewed by experts in community health nursing and psychiatric mental health nursing, as well as experts in socio-behavioral sciences, who reviewed the tool for clarity, relevance, comprehensiveness, understanding, applicability, and ease for implementation. Validation was through majority agreement. Testing the Arabic interviewing questionnaire sheet was done using the alpha Cronbach test. The Statistical result was 0.89.

Caregiver burden scale:

This scale was originally designed by **Deborah, (2006)**. It aimed to assess caregivers burden through five subscales with a total item of 20 items, which assesses physical burden represented by statements from 1 to 3, emotional burden represented from 4 to 9, family relationship from 10 to 15, time burden represented from 16 to 18, and finally, financial burden represented by statements from 19-20.

A scoring system of the burden scale: Scoring items were ranged on five Likert scales as the following: 0 (Never), 1 (Rarely), 2 (Sometimes), 3 (Nearly), and 4 (Always). The scores of the items were summed up. These scores were converted into a percentage. The caregiver has a positive burden (high) above the arbitrary cut-off point of 50%, meanwhile, the negative burden (low) was below the arbitrary cut-off point of 50%. This scale was translated into Arabic; the validity and reliability for the caregivers' burden scale were 0.85 by using Cronbach's alpha test.

Operational design:

Pilot study:

The pilot study was applied on 5 caregivers, represented 10% of the total sample size, to test the applicability of the tool, arrangement of items, and to estimate the time needed for each sheet. Then they were excluded from the sample

Administrative design:

Official permissions were obtained from the administrators of the geriatric clinics in Okasha Mental Health center affiliated with Ain Shams University.

Ethical consideration:

Ethical approval was obtained from the research ethics committee of faculty of nursing, Ain Shams University, and therefore the official permission to hold out the study was obtained from the General Director of geriatric clinics affiliated to Ain Shams University Hospitals and the head of the Psychiatric Department after clarifying the aim of the study. Verbal and written consent of the caregiver of patients with Alzheimer to participate in the study was obtained after an explanation of the aim of the study. The caregivers' privacy was considered. Before the interview, participants were informed regarding the aim of the study and were assured regarding confidentiality of data. The researchers emphasized to caregivers that the study was voluntary and anonymous. Caregivers had the full right to refuse to participate in the study or to withdraw at any time without giving any reason.

Field Work:

In the beginning, the researchers started to enroll the family caregivers who fulfill the criteria of the study. Data collection was carried out in about 6 months which started from the beginning of August 2020 to the end of January 2021. The interview methods were used for data collection; subjects were interviewed by the researchers, after explaining the aim of the study that was conducted through four phases:

1. Pre-assessment phase. It was done before the implementation of the counseling intervention; the objective was to identify the caregiver's needs regarding knowledge, attitudes, and practices toward their patients with Alzheimer disease and their physical, psychological, social, and financial burden. and collect pre-assessment data through the using interview questionnaire sheet. This data

was the baseline data, the time spent with each client about 30 minutes. Finally, the collected data was subjected to statistical analysis to give a baseline for designing the counseling intervention. This phase took about two months.

2. Development of the implementation phase. According to the identified caregivers' needs, the researchers developed a counseling intervention, aimed at enhancing caregivers' awareness and reducing their burden toward their patients with Alzheimer.

Implementing phase:

Counseling intervention for caregivers of patients with Alzheimer was implemented in (12) sessions; each session consisted of the following activities: caregivers' acquaintance, expressing feelings, exchange experiences, interaction with others, training to listen attentively and arrange what the subject wants to say. The researchers usually started with the objective of the session and ended with the date & time and the objectives of the next session. The researchers used, open discussion, videos, photos, also promotional materials (brochures) were given to participants after each session. The sessions usually took place between 9:00 am to 1:00 pm, was twice/week when the researcher and patients were available at clinic. Each session took approximately 30 minutes. Each group was 4 to 5 caregivers, but in most instances, sessions were conducted individually because of the different timetables of their patients' follow-up in the clinics or/and due to personal issues for some caregivers.

At the end of each session, the researchers conclude, take feedback from

every participant. Also, at the beginning of each session, the researchers review and discuss their previous session. This phase took about three months.

The sessions were executed as follows:

The initial 1st session was (interviewing): introductory session, to give general account about the intervention and rules followed; also, it served as an ice breaker to promote familiarity between researchers and participants. to establish a therapeutic relationship, explaining objectives, discussing the meaning of Alzheimer.

The '2nd' session: It was aimed to clarify the causes, signs, and symptoms of Alzheimer's.

The '3rd' session: It was aimed to illustrate the stages and methods of treatment of Alzheimer's.

The '4th' session: It was aimed to explain the associated disturbances of Alzheimer's, side-effects of treatment, and the applying methods used by caregivers to overcome it.

The '5th' session: It was aimed to identify complications of medication and methods to overcome them.

The '6th' session: It was aimed to determine the (physical, psychological, and social) needs of caregivers who caring their patients with Alzheimer

The '7th' session: It was aimed to describe the impact of Alzheimer disease on patients and their caregivers (physical, psychological and social)

The '8th' session: It was aimed to discuss the attitude and practice of caregivers toward their patients with Alzheimer's.

The '9th' session: It was aimed to assess signs of the burden among caregivers and their physical, psychological, social, and financial burden.

The '10 & 11th' sessions: It was aimed to discuss how caregivers should be done to care for their patients at home and strategies for facing caregivers' burden.

The '12th' session: summarize the intervention and its objectives and do the post-intervention evaluation.

Methods of teaching: Group discussion, Open discussion, small group activity, Demonstrations.

Audiovisual aids: Hand out, Pictures, videos, Flipchart, Computer-assisted education.

The approach of the researchers during the sessions:

Leaving them to express inner feelings freely, listening attentively to every subject, control the session, encouragement, and involvement, constructive criticism and appraisal of achievement, encouraging speaking or stopping speaking to listen without interruption.

Contents of intervention: The content covers the knowledge regarding Alzheimer's disease (definition, causes, manifestations, types, associated disturbance, treatment, nursing management, how to deal with the patient at home, and strategies to facing burden.

4. Evaluation phase: The pre-assessment tools were repeated immediately after ending of the counseling intervention sessions (post-test), to measure the progress of the subject's awareness concerning their knowledge about Alzheimer, their positive and negative attitudes toward their patient, their practices regarding patient's behaviors and their level of burden. This phase took about one month

Statistical analysis:

Data entry and statistical analysis were done using the Statistical Package for Social Science (SPSS) version 22.0. For statistical analysis, data were tabulated, coded, revised, analyzed using number and percentage distribution to determine whether there were significant differences or not, and comparisons between pre and post-tests were done using the arithmetic mean, standard deviation, Chi-square test (χ^2), t-test, and Pearson correlation. Statistical significance was considered at a p-value <0.05.

Results

Table (1): shows that three-fifth (60%) of caregivers under study are in age ranged between 35-< 50 years with a mean age of 49.1 ± 5.4 . More than two-thirds (72%) of them are female and 76% are married and living with the elderly and half (50%) of them are wives and read and write. The greatest proportion (90%) of them have no availability of secondary caregivers, for more than half (58%) of them their caregiving hours are 3- 6 hours. More than three quarter (80%) of them their period of caregiving is from 1 to < 3 months.

Table (2): displays that about three quarter (74%) of patients of

caregivers under study are in age ranged between 60 - < 70 years with a mean age of 62.1 ± 5.4 . more than three-fifths (64%) of patients are male. More than three quarter (78%) of them are married and (36%) of them are illiterate and three-fifths (60%) of them are living in urban areas.

Table (3): reveals that about three quarter (74%) of patients with AD of caregivers under study have onset of AD symptoms gradually and (80%) of them have a duration of AD symptoms from 1 to < 3 months and (70%) of them are increased their intensity of AD symptoms, and (70%) of them are in the moderate stage of AD. Also, it was found that more than one quarter (28%) of them had a family history of AD.

Table (4): It observes from this table that, (64%) of the studied caregivers have poor awareness regarding their knowledge about Alzheimer disease followed by (22%) have average awareness and (14%) have good awareness at pre-intervention. Meanwhile, these percentage enhanced to become in post-intervention (6%) of them had poor awareness regarding their knowledge about Alzheimer's disease followed by (34%) have average awareness and (60%) have good awareness in post- intervention.

Table (5): Clarifies that, there is an improvement of levels of the attitude of caregivers towards their patient with Alzheimer between pre-post program intervention evidenced by (34%) positive attitude in pre-program becomes (70%) in post-program intervention, also there is an improvement by decreasing percentage of caregivers' negative attitudes from (66%) in pre-program to (30%) in post-program intervention. In addition to there is a highly statistically significant difference between pre-post intervention

as regards the total scores of the caregivers' positive and negative attitudes towards caring for their patients with Alzheimer ($P = <.001$).

Table (6): This table indicates that there was a statistically significant difference in caregivers' practice related to care of their patients with Alzheimer as evidence by $p < 0.05$. This means that there is improvement in caregivers' practice related to care of their patients with Alzheimer at post-intervention implementation.

Table (7): This table indicates that, there was a highly statistically significant difference in caregivers' burden from their patients with Alzheimer as evidence by $p < 0.001$ in all subscales of burden except financial burden is little improvement. This means that there is an improvement in caregivers' burden in post-intervention implementation

Table (8): It denotes that, (70%) of caregivers of patients with Alzheimer have positive burdens in pre-intervention while this percentage improved into (38%) post-intervention. In addition to there are (30%) of caregivers of patients with Alzheimer have negative burdens in pre-intervention, meanwhile, this percentage upgraded into (62%) post-intervention. In addition to there is a highly statistically significant difference between pre-post intervention as regards the total scores of the caregivers' positive and negative burdens towards caring for their patients with Alzheimer $P = <.001$.

Tables (9): It states that, there was a direct significant correlation between caregivers' burden and their knowledge, attitudes, and reported practices toward their patients with Alzheimer ($P < 0.001$).

Table (1): Distribution of socio-demographic characteristics of caregivers of patients with Alzheimer understudy (n=50).

Items	No. (50)	%
Age of caregiver (years):		
• 20 -< 35	8	16
• 35 -< 50	30	60
• 50 +	12	24
Mean ±SD	49.1 ± 5.4	
Sex:		
• Male	14	28
• Female	36	72
Level of Education:		
• Read & write	25	50
• Technical /Diploma	16	32
• University/Post-graduate	9	18
Marital Status:		
• Married	38	76
• Divorced	10	20
• Widow	2	4
Degree of relation with the patient:		
• Husband	2	4
• Wife	25	50
• Daughter	12	24
• Son	4	8
• Daughter in law	7	14
Occupation:		
• Working	38	76
• Not working	12	24
Living with the elderly		
• Yes	36	72
• No	14	28
Availability of secondary caregiver:		
• Yes	5	10
• No	45	90
Caregiving hours:		
• 3-<6 hr.	29	58
• 6-<9 hr.	15	30
• 9+ hr.	6	12
Period of caregiving:		
• 1 to <3Months	40	80
• 3 - 6 Months	10	20

Table (2): Distribution of socio-demographic characteristics of patients with Alzheimer understudy.

Items	No. (50)	%+
Age of patient (years):		
• 50-<60	4	8
• 60<70	37	74
• 70 and more	9	18
Mean + SD	62.1 ± 5.4	
Sex:		
• Male	32	64
• Female	18	36
Marital status:		
• Single	5	10
• Married	39	78
• Divorced	4	8
• Widowed	2	4
Level of education:		
• Illiterate	18	36
• Read & write	16	32
• Primary & secondary school	14	28
• University level	2	4
Residence area:		
• Urban	30	60
• Rural	20	40

Table (3): Clinical history of patients with Alzheimer understudy.

Items	No. (50)	%
The onset of AD symptoms:		
• Sudden	13	26
• Gradual	37	74
Duration of AD symptoms:		
• Less than 1month	3	6
• 1 to <3Months	40	80
• 3- 6 Months	7	14
The intensity of AD symptoms:		
• Stable	15	30
• Increased	35	70
• Decreased	0	0
Stage of the AD disease		
• Mild	10	20
• Moderate	35	70
• Advanced	5	10
Presence of Family History		
• Yes	14	28
• No	36	72

According to the study hypothesis which confirmed that counseling intervention improved caregivers' awareness through enhancing their knowledge, attitudes, reported practices, and reducing their burden of care toward their patients with Alzheimer disease it will be discussed through the following parts of study results; tables (4,5,6,7,8)

Table (4): Comparison of total caregivers' knowledge towards Alzheimer's disease of their patients pre and post the intervention (n=50).

Total score level	Pre-intervention		Post-intervention		X ²	p-value
	No.	%	No.	%		
• Good (Scores 75% and more)	7	14	21.35	60	21.35	<0.001
• Average (Scores 50% :< 75%)	11	22	17.61	34	17.61	<0.001
• Poor (Scores < 50%)	32	64	25.29	6	25.29	<0.001

Table (5): Comparison of levels of the attitude of caregivers towards their patient with Alzheimer's disease in the pre-and post-program intervention (n=50).

Level of attitude	Pre-intervention		Post-intervention		t-test	p-value
	No.	%	No.	%		
Positive	17	34	35	70	20.73	<0.001
Negative	33	66	15	30		

Table (6): Mean and Standard Deviation of caregivers' reported practices regarding the care of their patients with Alzheimer pre and post-intervention (n=50).

Total reported practice level	Pre-intervention Mean + SD	Post-intervention Mean + SD	t-test	p-value
Adequate practices	23.15± 7.17	43.19± 6.22	23.15	P<0.05
Inadequate practices	37.70± 8.73	26.31± 8.52	21.35	P<0.05

Table (7): Mean and Standard Deviation of caregivers' burdens at pre-post intervention (n=50).

Burden subscales	Pre-intervention Mean + SD	Post-intervention Mean + SD	t-test	p-value
Physical burden	28.20± 6.15	17.31± 9.82	34.22	P<.001
Emotional burden	35.11± 5.434	16.12± 7.91	20.78	P<.001
Family relationship burden	29.17± 5.12	19.37± 8.11	26.22	P<.001
Individual time and freedom burden	34.07± 6.25	18.14± 5.21	18.29	P<.001
Financial burden	33.12± 9.54	30.32± 9.56	14.18	P<.05

Table (8): Comparison of caregiver burden scale among caregivers of patients with Alzheimer at pre-and post-intervention

Caregiver Burden		Pre-intervention		Post-intervention		t-test	p-value
		No.	%	No	%		
Positive burden	(high)	35	70	19	38	13.36	<.001
Negative burden	(low)	15	30	31	62	25.81	<.001

Table (9): Correlation between caregivers' burden and their knowledge, attitudes, and reported practices toward their patients with Alzheimer in pre-and post-intervention (n=50).

Items	Total burden		P-value
	Pre-intervention	Post-intervention	
Total knowledge score	r =.201	r =.343	0.001*
Total attitudes score	r =.192	r =. 378	0.001*
Total reported practices score	r =.165	r =.365	0.001*

Discussion

Caregivers play a major role in providing all assistance and care for a patient with Alzheimer through helping them in most of their activities. Caring for patients with Alzheimer required various responsibilities and skills, including personal care, housekeeping, administration of medication, managing financial transactions and other activities and with disease progression caregiving for the patient's well-being becomes more vital (Cheng et al., 2019). The caring of an elderly patient with AD demands almost constant commitment from the caregiver, who must sacrifice their habitual activities to perform the role. Some caregivers give up their jobs or professions and stop living their own lives, often leading to social isolation and depression. Prolonged exposure to a potentially stressful situation strongly contributes to overall burnout and feeling of much burden (Lindeza, 2020). So, the present study aimed to investigate the influence of the counseling intervention on the enhancement of awareness and

reducing burdens among caregivers of patients with Alzheimer.

Sociodemographic characteristics of caregivers were similar to what finding in previous studies. nearly two-thirds of caregivers their ages ranged between 35-< 50 years with a mean age of 49.1 years old; This result may be due to the selection of caregivers with physical capacity at the appropriate level to provide various services and care to Alzheimer's patients. This result was similar to the finding of a study was done in Brazil by **Moreira et al., (2018)** reported that the mean age of caregivers was 47.82 years old. On the other line, a study was done in Brussels by **Damien et al., (2020)** who study the effect of educational programs on caregivers with dementia found that the majority of caregivers ranged from 50 years to more.

The result of the present study showed that there was more than two-third of caregivers understudy are females living with the elderly and half of them are their wives; This finding from the researchers' point of view reflects a

cultural and social pattern in which the role of caregiving is seen as a female duty, and from a long time ago and related to a fortune-teller when the husband becomes ill, the wife is the first person to provide care for him. This result supported with **Damien et al., (2020)** found that the typical profile of caregivers of patients with AD, as found in the literature, is female, family member, residing at the same domicile, and in general a daughter or wife. The findings for the present study resemble this profile since the majority of caregivers were women.

The result of the present study showed that there was the greatest proportion of them have no availability of secondary caregivers; this result according to the researchers' felid experience and according to results majority of caregivers are relatives and living with elderly increases of also might be financial burden needed for a patient, and not able to pay a service. This is in accordance with the results of **Damien et al., (2020)** who stated that most caregivers were relatives and lived with patients as wives and sons or daughters.

The result of the present study indicated that there were about three-quarters of patients in age ranged between 60- <70 years; more than three-fifths of patients are male and more than three- a quarter of them are married and one-third of a patient with Alzheimer are illiterate; this result may be confirmed with findings of a study done in Egypt by **El Tallawy et al., (2019)** who study the prevalence of Alzheimer in Upper Egypt, found that AD is increasing with age, and is mostly diagnosed in people over 65 years, more common among females than males in all ages, as well there is a positive relationship between the lack of education and the high incidence of Alzheimer's rate, and this leads to

difficulty in learning by placing illustrations of any guide signs to help the patient and direct to the methods. It is added that there was all of them are not working; this from the researchers' point of view result may be due to disease symptoms, age factor, lack of physical strength, as well as various diseases, especially heart disease and hypertension. This result is not supported by **Lee & Casado (2019)** in a study aimed to assess the knowledge of Alzheimer's disease among Vietnamese. found that more than three-fourths of studied patients completed high school, and while supported the present study results which found that more than three-fifths were not employed, retired, and not looking for work.

Regarding the clinical history of patients, the findings revealed that there were nearly three-quarters of patients with AD have a moderate stage of AD with gradual onset and intensity of symptoms. This from the researchers' point of view confirming the relation of patient age and deterioration of AD disease stage and the cases selected to be in the study was new diagnosed cases which still no advanced and deteriorate of problems. This result was supported by **Pudelewicz, et al., (2019)** who studied the burden of caregivers of patients with Alzheimer's disease and found that, sixty percentage of patients in the moderate stage of the disease and gradual onset of disease. these results were in line with literature reviews, that clarified the Alzheimer's disease is progressive, begins insidiously, and is characterized by gradual losses of cognitive function and disturbances in behaviour and affect (**Goren, 2016**).

Regarding caregivers' awareness (knowledge, attitudes, and reported practices) toward their patients with Alzheimer disease

The current results reported that there were direct statistically significant differences in caregivers' knowledge at pre-post intervention. This from the researchers' opinion confirmed that the greater need for conducting counseling programs to raise health awareness about Alzheimer disease for all caregivers of newly diagnosed patients. this result may be due to before counseling program, those caregivers have a common misconception within the community about Alzheimer's disease, meanwhile, after the intervention, they are satiated with all-sufficient and necessary information about the disease to increases their ability to deal with it. On the same line, a study was done in Spain by **Frias et al., (2020)** aimed to assess the effect of the counseling intervention on reducing burden among Alzheimer's caregivers, stated that the interventions improve knowledge of caregivers about Alzheimer illness, and develop their skills for caring patients.

Regarding the attitude of caregivers towards Alzheimer's disease, the current result indicated that there is an improvement of caregivers' attitudes from near one-third of them are positive in pre-intervention to more than two-third post-intervention. These results postulated the relation between the knowledge and attitude as when the caregivers had adequate knowledge it internally affecting their attitude and be positive. This result may be due to before intervention the caregivers are unable to manage the physical, behavioral, and cognitive problems of their patients with Alzheimer and may need professional help for their unremitting stress regarding their patients

care. Meanwhile, after the intervention, there is an upgrade of positive attitude to become more than two-third which indicates the positive impact of the counseling intervention on caregivers' knowledge about Alzheimer and provides caregivers with a high level of knowledge, and skills necessary to provide care effectively to their clients. These results confirmed with findings of **Moreira et al., (2018)** study, which revealed that there was an improvement in the attitude of caregivers in most of the domains after intervention

Concerning the reported practice of caregivers, these findings emphasized that there is an improvement has been observed in most of the items related to caregivers' practices towards caring for their patients with Alzheimer in a post-intervention. and there was a highly statistically significant difference in the total scores of caregivers' practices towards patients with Alzheimer. This might be explained that when the education and training are implemented at the early of disease, the caregiver was interested and anxious to know how to care for the patient, wherever interventions provide them with skills as problem-solving, technical skills, support, home modification strategies, and guide them how to reach to community resources available for Alzheimer patients. As well as this could reflect the close relationship between knowledge, attitude, and reported practices as to when the caregivers obtained adequate knowledge their attitude and reported practices improved after counseling intervention. Along with this, these results reflected the success of this intervention. This finding aligned with a recent study was done in India by **Superior (2020)** aimed to evaluate the knowledge and practice of caregivers of patients with Alzheimer's disease, reported that the majority of

caregivers had a poor practice of care for the client with AD.

Concerning the Caregivers Burdens

The existing results of the present study indicated that near three-quarters of caregivers of patients with Alzheimer have high burdens in pre-intervention in all subscale items, while this percentage improved to more than one-third into post-intervention. This result may be due to the greatest proportion of caregivers were taking care of patients without help from others, thus put more burden on them and increase stress level among them, this explained the importance of counseling intervention to guide caregivers on how to care and manage their client and burden. Moreover, the results showed that there was less than one-third of caregivers of patients with Alzheimer have low burdens in pre-intervention, while this percentage upgraded into to more than three fifths into post-intervention; this result may be due to there is a need for caregivers for education and support programs to teach positive coping techniques, together with ways to aid management of their care recipients with AD. Similarly, a study was done in Florida by **Terracciano, et al., (2020)** who study the effectiveness of powerful tools on caregiver burden, found that reducing of caregivers' burden and depressive symptoms and improving their self-confidence after the intervention. On the same line, **Frias et al., (2020)** stated that the interventions had a significantly affect caregivers' burden. Recently a study was done in Japan by **Ohano, et al. (2021)** investigate the humanistic burden among caregivers of Alzheimer patients, who stated that the caregivers of Alzheimer patients in Japan reportedly experienced significant humanistic burden. Hence, provision of effective

educational program had positively influence on reducing the burden among them. These findings from the researchers' field experience could ensure that the caregivers' burden can be reduced by educating them on proper care and taking necessary measures toward protecting the caregiver's social life and psychological health

The result of the present study showed that there was a highly statistically significant difference between pre-post intervention regards all subscales of burden and the total scores of the caregivers' positive and negative burdens towards caring for their patients with Alzheimer. This explained the impact of an intervention for counseling the caregivers on how to care for patients and handle their burdens. Inconsistency with results of the study done in Taiwan by **Jhang, et al., (2021)** on caregiver burden of patients with cognitive impairment stated that a variety of educationally and psychosocial interventions had mild to moderate efficacy in alleviating caregiver burden and distress.

The current study showed that there was a highly statistically significant correlation among caregivers' burden and their knowledge, attitudes, and practices toward their patients with Alzheimer at pre-and post-intervention, this result might be explained that distance behavior of caregivers and their awareness about AD is very less because newly diagnosed of patients which had an impact on the emotional relationship between the caregiver and recipient this might impair of caring them. Thereby the counseling intervention had a positive impact on caregivers' knowledge, attitudes, and practices toward their patients with Alzheimer which reduce their burden. This result is supported by **Scott, et al. (2020)** examine the relationships between

knowledge of Alzheimer's disease and the caregivers' burden. The results of this study indicated that increased knowledge of Alzheimer's disease was beneficial for caregivers to care for patients and reduce the burden, and the results also indicated there is a statistically significant positive correlation in the level of knowledge and burden among caregivers

The findings of the current study supported the study hypothesis that clarified that successful counseling interventions for caregivers have included providing information about Alzheimer's disease, care planning, advice about patient management and the importance of self-care, skills training to assist patient management, training in stress management, problem-solving and decision-making guidance. These interventions are specifically designed for an effective caregiver in reducing the caregiver's burden.

Conclusion

Based on the study finding and research hypothesis; it can be concluded that the results of this study reaffirm that the majority of caregivers at pre-intervention had a poor level of knowledge, negative attitude, and inadequate practice regarding Alzheimer's disease, as well the majority of them had a high level of the burden from caring their patient. the counseling intervention led to statistically significant improvement of caregivers' awareness through improving their knowledge, attitudes, and practices toward Alzheimer's disease and reducing the burden of care, with a highly statistically significant positive correlation among them. Therefore, the significant improvement in the knowledge, attitude, and practice, and reduction of burden;

reveal that the intervention was effective and conducted adequately.

Recommendation

- Counselling intervention for large scale of caregivers to improve their awareness about Alzheimer's disease
- Continuous training and support of caregivers, which will be enhancing their performance regarding the care of AD patients.
- Further studies should be done for family caregivers in their early caring process to optimize their well-being through giving information and helping them to understand how to reduce burden degree.

Declaration of Competing Interest

None

Funding Resources

None

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