

Informal Caregivers, Awareness about Methods of Integrated Home Care for the Elderly

*Merna Nageh Botros Malak ,** Aliaa Mohammed Othman El-afandy,*** Sahar Mahmoud
Sayed Ahmed

*Nursing Manager at Kozman and Damian Nursing Home for Elderly

**Assistant Professor of Community Health Nursing, Faculty of Nursing - Helwan University

*** Assistant Professor of Community Health Nursing, Faculty of Nursing - Helwan University

Abstract

Elderly refers to individuals above a certain age threshold, often 60 or 65 years and older. Informal caregivers play a vital role in providing integrated home care for elderly **Aim of the study:** To assess awareness for informal caregivers about the methods of integrated home care for the elderly. **Research design:** A descriptive research design was used in this study. **Setting:** The study was conducted by home visit and in Church of Blessed Virgin Mary and the Great Martyr St Mina, East Marg. **Sample:** The sample was comprised 57 visitors. **Tools:** Two tools used: 1st tool is structured Interviewing questionnaire. It consists of 3 parts: 1) Socio-demographic, knowledge and attitude assessment sheet. 2nd tool is Skills assessment observational checklist. **Results:** The study result revealed that, (43.9%) of informal caregiver had average level of knowledge and (40.3%) had poor level of knowledge, (84.2%) of informal care givers had positive attitude, (52.6%) of informal care givers had satisfactory level of skills, and there was highly statistically significant relation between informal caregivers total knowledge, and their total skills with ($P = < 0.000$). **Conclusion:** nearly two fifth of informal caregivers had a poor knowledge, the majority of informal caregivers had a positive attitude regarding integrated care for the elderly, and more than half of informal caregivers had satisfactory level of skills **Recommendation:** Emphasize the importance of availability and distributions of pamphlets and booklet containing the basic knowledge and skills for informal caregivers about methods of integrated home care for the elderly.

Key words: Awareness, Elderly, Informal care givers, Methods of integrated home care



Introduction

Elderly people represent a significant and growing segment of the global population. Elderly refers to individuals above a certain age threshold, often 60 or 65 years and older. In 2020, there are an estimated 727 million persons aged 65 years or over worldwide. As individuals age, they may experience various physical, cognitive, and social changes that can have a profound impact on their overall well-being and quality of life. The elderly population faces unique challenges and opportunities, ranging from age-related health conditions and increased vulnerability to the accumulation of life experiences and wisdom (Saeedi et al., 2019).

Caregivers play a crucial role in providing support and assistance to individuals who are unable to fully care for themselves due to age, illness, or disability. A caregiver is someone who takes on the responsibility of looking after the physical, emotional, and sometimes financial needs of another person. Caregivers can be family members, friends, or hired professionals, and their roles can vary widely depending on the specific circumstances and needs of the individual receiving care. Caregiving often involves tasks such as providing personal hygiene assistance, administering medications, coordinating medical appointments, managing household affairs, and offering emotional support (Cejalvo et al., 2021).

Informal caregivers are the backbone of long-term care for individuals who require assistance due to age, illness, or disability. Informal caregivers can be spouses, adult children, siblings, or other relatives who step into the role of caregiver out of love, compassion, and a deep sense of commitment. They often juggle multiple responsibilities, including managing household tasks, assisting with personal care, coordinating medical appointments, and offering emotional support. Informal caregivers play a vital role in maintaining the well-being and quality of life of their care recipients, allowing them to remain in familiar surroundings and preserving their dignity and independence (Dang et al., 2022).

Integrated care for older people is a comprehensive approach that aims to provide coordinated and seamless healthcare services to meet the complex needs of older individuals. Integrated care brings together various healthcare providers, social services, and community resources to ensure that older people receive comprehensive, well-coordinated, and continuous care across different settings. By integrating medical, social, and support services, integrated care seeks to address the physical, mental, and social well-being of older people while minimizing fragmentation, duplication, and gaps in care (Karacsony et al., 2022).

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Awareness of informal caregivers about methods of integrated home care is crucial in ensuring effective and comprehensive care for individuals in need. By being aware of methods of integrated home care, informal caregivers can actively participate in the care process, facilitate smooth transitions between different care settings, and ensure that their loved ones receive the best possible care in the comfort of their own homes (**Tang et al., 2019**).

Community nurses play a crucial role in delivering healthcare services and support to individuals within their local communities. These nurses, also known as district nurses or community health nurses, provide care to individuals of all ages, including older adults, in community settings such as homes, clinics, and residential facilities. Community nurses play a vital role in promoting the well-being of informal caregivers, providing them with useful information, and providing support (**Wang et al., 2020**).

Significance of the study

According to recent data, the number of elderly people globally has been steadily increasing. The United Nations estimates that there were over 703 million people aged 65 and above in 2019. This number is projected to nearly double by 2050, reaching approximately 1.5 billion (**Affairs., 2019**). According to the Central Agency for Public Mobilization and Statistics (CAPMAS), the number of elderly individuals in Egypt has been steadily rising over the years. Number of elderly persons reached about 6.8 million which represents 6.7% of total population and is expected to increase to 17.9% in 2052. Number of male elderly persons is 3.6 million, which represent about 6.9% of total male population, also the number of female elderly persons is 3.2 million, which represent about 6.4% of total female population (**Agency et al., 2021**).

Aim of the Study

This study aims to assess Informal Caregivers, Awareness about the Methods of Integrated Home Care for the Elderly through:

- 1- Assess informal caregiver knowledge regarding methods of integrated home care for the elderly
- 2- Determine informal caregiver attitude regarding methods of integrated home care for the elderly.

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3- Recognize informal caregiver skills regarding methods of integrated home care for the elderly

Research question

Q1: What is the level of knowledge among informal caregiver regarding methods of integrated home care for the elderly?

Q2: What is the level of attitude among informal caregiver regarding methods of integrated home care for the elderly?

Q3: What is the level of skills among informal caregiver regarding methods of integrated home care for the elderly?

Subject and Methods

Research design:

A descriptive research design was utilized in this study.

Setting:

This study was conducted by home visit and in Church of Blessed Virgin Mary and the Great Martyr St Mina, East Marg.

Sampling:

The sample was comprised 57 visitors presented in home visit and in Church of Blessed Virgin Mary and the Great Martyr St Mina, East Marg that available at the time of data collection.

Tools for data collection:

The required data was collected through the following tools:

First tool: A structure interview questionnaire:

This tool was designed by the researcher and written in simple Arabic language based on scientific literature review, experts' opinion and personal experience and filled. It is comprised of three parts:

A) The first part: represent the socio demographic data sheet, it include the following (age, sex, marital status, educational level, residence, and occupation.

B) The second part: knowledge assessment sheet: It was used to assess knowledge about methods of integrated home care for the elderly. It is composed of (55) items divided into four parts: General knowledge in integrated home care and elderly people (14 items), methods of social and psychological integrated home care for the elderly(10 items), methods of

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nutritional, physical and health integrated home care for the elderly (18 items), and residential integrated home care methods (13 items).

Scoring system:

Each knowledge question was scored by zero for wrong or no answer, one for «correct incomplete » and two for (complete correct. The total knowledge scores ranged from 0-110, they were evaluated as follows:

Total score knowledge

- Poor less than 50% (0:54.9)
- Average from 50%:75% (55:82.5)
- Good more than 75 % (82.6:100)

C) The third part: Attitude assessment: it was designed by the researcher to assess the attitude of informal care giver regarding methods of integrated home care for the elderly. It is composed of 20 questions about the attitude of informal care giver towards methods of integrated home care for the elderly such as feeling anxious when dealing with the elderly, feeling afraid because do not know well about integrated care towards the elderly, feeling afraid when left alone, feeling sad when feel neglected..etc.

Scoring system:

Each question was scored by one for a «disagree», two for a «not sure » and three for agree questions an summed up with mean and standard deviation:

- Negative less than 50% (0:29.94)
- Positive from 50%:100% (30:60)

Second tool: Skills assessment observational checklist:

It was designed by the researcher to assess the skills of informal care giver regarding methods of integrated home care for the elderly. It is composed of (35) items divided into seven parts: personal hygiene of the elderly (5items), feeding (5items), cleanliness of the environment (5items), moving (5items), toileting (5items), entertainment (5items), and helping the elderly in taking treatment (5items).

Scoring system:

Each skills question was scored by one for a «done practice», zero for a «not done ».

Total score skills

- Unsatisfactory less than 50% (0: 17.46)

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- Satisfactory from 50%:100% (17.5:35)

Validity and reliability:

- The study tools were tested for content and face validity by jury test of five experts in the field of nursing community and pediatric to evaluate the individual items as well as the entire instrument as being relevant and appropriate to test what they wanted to measure. The face validity of the questionnaire was calculated based on experts' opinion after calculating content validity index (%) of its items and it was 94%.

- The experts were asked to evaluate the individual items on the study tools in relation to its relevance and appropriateness in terms of the construct and if the items adequately measure all dimensions of the construct. The experts were asked to evaluate individual items and rate items on a 4-point scale as follows; not relevant scored (1), Little relevant scored (2), relevant scored (3) and very relevant (4).

- A pilot study was carried out on 10% from the study subjects and was excluded from the total sample. To assess reliability, the study tool was tested by the pilot subjects for calculating Cronbach's Alpha which was 0.72 for knowledge questionnaire, 0.85 for skills questionnaire and 0.78 for attitude.

Ethical considerations:

An official permission to conduct the proposed study obtained from the Scientific Research Ethics Committee faculty of nursing Helwan University. Participation in the study is voluntary and subjects given complete full information about the study and their role before signing the informed consent. The ethical considerations included explaining the purpose and nature of the study, stating the possibility to withdraw at any time, confidentiality of the information where it was not accessed by any other party without taking permission of the participants. Ethics, values, culture and beliefs will be respected.

II) Operational Items:

The study completed passed through different phases included preparatory phase, pilot study and field work phase.

Preparatory phase:

It included reviewing of past, current, national and international related literature and theoretical knowledge of various aspects of the study using books, articles, internet, periodicals and magazines to develop tools for data collection.

Pilot study:

A pilot study was carried out on 10% of the study sample (7) to ascertain the clarity, applicability of the study tools, and to identify the obstacles and problems that may be encountered. According to the result of pilot study no modification were needed. So the parents of the pilot study were included in sample.

Field work:

Data collected within six months of year (2023) one day /week from 6 pm -8pm at Friday, the needed sample take 6 months to completed, interview of informal caregivers and home visits, oral approval obtained from informal caregivers after the investigator introduce himself for each informal caregiver, then explain the purpose of the study to assess knowledge, attitude and of practice informal caregivers about methods of integrated home care for the elderly. Study collected through structure face to face interview and the entire tool filled by the investigator. The investigator utilize two tools, each tool will need 20 -30 minutes to fill.

III) Administrative Items:

Approval to carry out this study obtained from the dean of the faculty of nursing and directors of Cosman and Damian El Shorouk City, Al-Nusour Tenth of Ramadan, Morris and Ferna, and St.George's nursing homes.

IV) Statistical Items:

The collected data were organized, tabulated and statistically analyzed using SPSS software (Statistical Package for the Social Sciences, version 16, SPSS Inc. Chicago, IL, USA). For quantitative data, the range, mean and standard deviation were calculated. For qualitative data, which describe a categorical set of data by frequency, percentage or proportion of each category, using Chi-square test (χ^2). Correlation between variables was evaluated using Pearson's correlation coefficient (r). Significance was adopted at $p < 0.05$ for interpretation of results of tests of significance (Dawson & Trapp, 2001).

Results**PartI: Socio-Demographic characteristics of informal care giver.**

Table (1): Number and percentage Distribution of Demographic Data among Informal care giver about methods of integrated home care for the elderly (n=57).

| Demographic data | The studied sample |
|------------------|--------------------|
|------------------|--------------------|

| | (n=57) | |
|---|---------------------|-------------|
| | No. | % |
| • Age | | |
| Mean ±SD | 35.24 ± 10.9 | |
| • Sex | | |
| - Male | 4 | 7 |
| - Female | 53 | 93 |
| • Education level | | |
| - No read and write | - | - |
| - Read and write | 14 | 24.6 |
| - Secondary education | 6 | 10.5 |
| - Bachelor's degree | 37 | 64.9 |
| - Postgraduate degree | - | - |
| • Marital Status | | |
| - Married | 5 | 8.8 |
| - Single | 22 | 38.6 |
| - Widow | 15 | 26.3 |
| - Divorced | 15 | 26.3 |
| • Occupation | | |
| - House wife | 18 | 31.6 |
| - Employ | 25 | 43.9 |
| - Other | 14 | 24.6 |
| • Degree of closeness to the elderly | | |
| Mean ±SD | 1.71 ± 0.88 | |

Table (1): shows the study participant's socio-demographic characteristics; the sample mean age was 35.24 ± 10.9 ; (93%) of sample are females, (64.9%) had bachelor's degree, and only (10.5%) had secondary education. According to marital Status the result reveals that (38.6%) of informal caregivers were single and (26.3%) were widow and divorced while only (8.8%) were married. The sample mean degree of closeness to the elderly was 1.71 ± 0.88 .

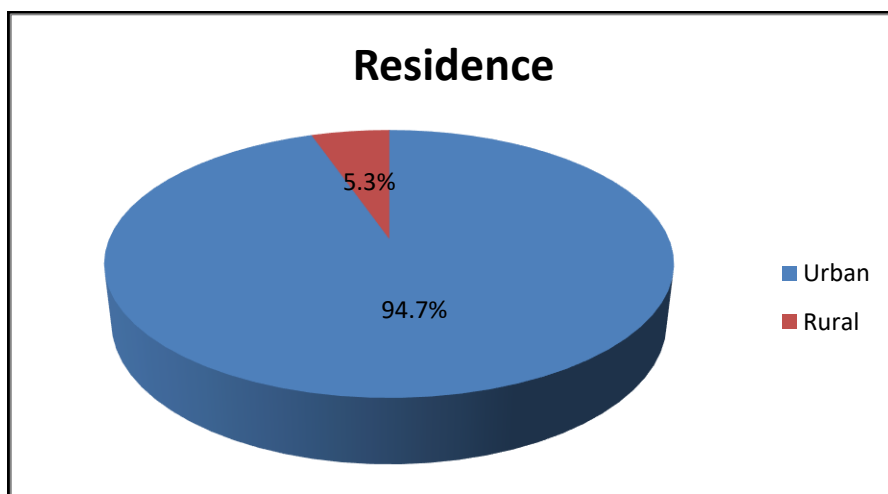


Figure (1): Percentage Distribution of residence among Informal care giver about methods of integrated home care for the elderly (n=57).

Figure (1): shows that 94.7% of sample live in urban area while only 5.3% live in rural area.

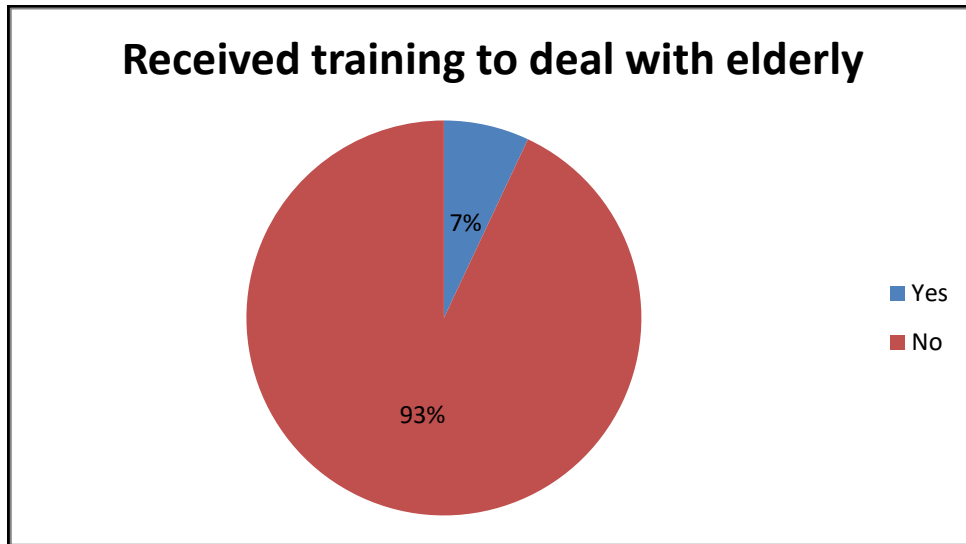


Figure (2): Percentage Distribution of received training to deal with elderly among Informal care giver about methods of integrated home care for the elderly (n=57).

Figure (2) demonstrates that 93% of sample received training to deal with elderly while only 7% not received training.

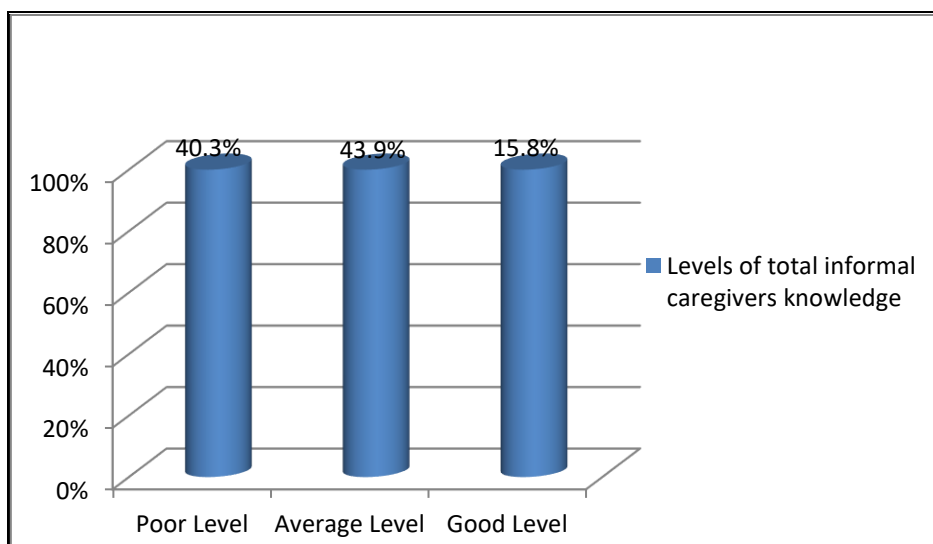


Figure (3): Percentage Distribution of Informal care givers total knowledge regarding methods of integrated home care for the elderly (n=57).

Figure (3) illustrates that, (43.9%) of informal caregiver had average level of knowledge and (40.3%) had poor level of knowledge while only (15.8%) of informal caregivers had average level of knowledge.

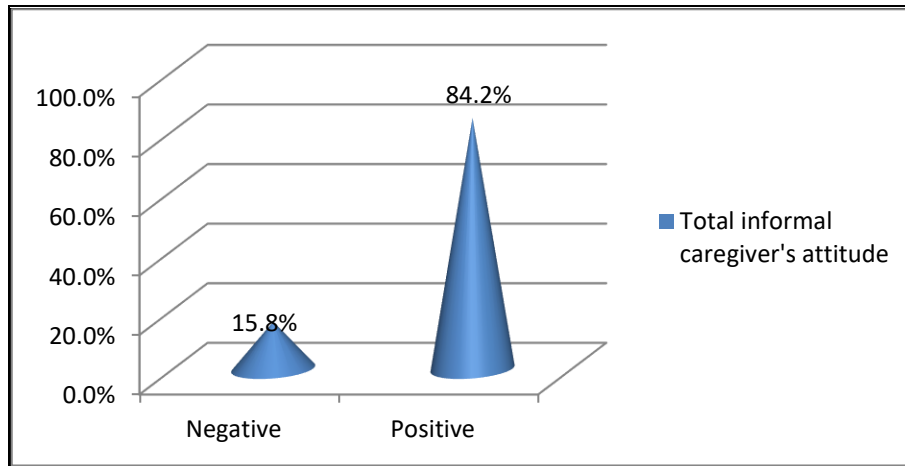


Figure (4): Percentage Distribution of Total attitude among Informal care givers regarding methods of integrated home care for the elderly (n=57).

Figure (4) shows that (84.2%) of informal care givers had positive attitude regarding methods of integrated home care for the elderly while only (15.8%) had negative attitude.

Table (10): Number and Percentage Distribution of Informal care givers total skills regarding methods of integrated home care for the elderly (n=57).

| Informal care givers total skills | Studied Sample | | χ^2 | P |
|---|------------------|------|----------|------|
| | No. | % | | |
| Levels of total Informal care givers skills: | | | | |
| Unsatisfactory skills | 27 | 47.4 | 5 | 0.00 |
| Satisfactory skills | 30 | 52.6 | | |
| Range | 20 | | | |
| Mean \pm SD | 19.85 \pm 5.77 | | | |

Table (10) shows that (52.6%) of informal care givers had satisfactory level of skills regarding methods of integrated home care for the elderly while (47.4%) had unsatisfactory level of skills with mean score 19.85 \pm 5.77.

Part V: Relation between total informal caregiver knowledge and their demographic characteristics.

Table (11): Relation between total informal caregiver knowledge and their demographic characteristics (n=57).

| Demographic characteristics | Total informal caregiver knowledge (n=57) | | | | | | χ^2 | P |
|--|---|--------------|--------------|-------------|--------------|--------------|--------------|----------------|
| | Poor (23) | | Average (25) | | Good(9) | | | |
| | N | % | N | % | N | % | | |
| • Sex | | | | | | | 11.69 | 0.003** |
| - Male | 1 | 25 | 0 | 0 | 3 | 75 | | |
| - Female | 22 | 41.5 | 25 | 47.2 | 6 | 11.3 | | |
| • Education level | | | | | | | 24.85 | 0.000 |
| - Read and write | 0 | 0 | 14 | 100 | 0 | 0 | | |
| - Secondary education | 3 | 50 | 1 | 16.7 | 2 | 33.3 | | |
| - Bachelor's degree | 20 | 54.1 | 10 | 27 | 7 | 18.9 | | |
| • Marital Status | | | | | | | 53.25 | 0.000 |
| - Married | 0 | 0 | 0 | 0 | 5 | 100 | | |
| - Single | 4 | 18.2 | 14 | 63.6 | 4 | 18.2 | | |
| - Widow | 14 | 93.3 | 1 | 6.7 | 0 | 0 | | |
| - Divorce | 5 | 33.3 | 10 | 66.7 | 0 | 0 | | |
| • Residence | | | | | | | 6.54 | 0.038 |
| - Urban | 23 | 42.6 | 24 | 44.4 | 7 | 13 | | |
| - Rural | 0 | 0 | 1 | 33.3 | 2 | 66.7 | | |
| • Occupation | | | | | | | 29.63 | 0.000 |
| - House wife | 1 | 5.6 | 18 | 88.9 | 1 | 5.6 | | |
| - Employ | 10 | 40 | 9 | 36 | 6 | 24 | | |
| Other | 12 | 85.7 | 0 | 0 | 2 | 14.3 | | |
| • received training on dealing with the elderly | | | | | | | 0.519 | 0.771 |
| Yes | 1 | 25 | 2 | 50 | 1 | 25 | | |
| No | 22 | 41.5 | 23 | 43.4 | 8 | 15.1 | | |
| Demographic characteristics | Mean | SD | Mean | SD | Mean | SD | f | P |
| • Age | 31.08 | 11.16 | 37.20 | 6.40 | 40.44 | 16.70 | 3.33 | 0.04 |
| • Degree of closeness to the elderly | 2.04 | 1.02 | 1.32 | 0.55 | 2.00 | 0.86 | 5.27 | 0.008 |

Table (11): clarifies that, there was highly statistically significant relation between informal caregivers education level, marital status, occupation and their level of knowledge with (P = < 0.000).

Table (12): Relation between informal caregiver's attitude and their demographic characteristics, (n=57).

| Demographic characteristics | Informal caregiver's attitude | | | | χ^2 | P |
|--|-------------------------------|------|---------------|-------|----------|-------|
| | Negative (9) | | Positive (48) | | | |
| | N | % | N | % | | |
| Sex | | | | | | |
| ✓ Male | 2 | 50 | 2 | 50 | 3.78 | 0.05 |
| ✓ Female | 7 | 13.2 | 46 | 86.8 | | |
| • Education level | | | | | | |
| - Read and write | 0 | 0 | 14 | 100 | 7.91 | 0.01 |
| - Secondary education | 3 | 50 | 3 | 50 | | |
| - Bachelor's degree | 6 | 16.2 | 31 | 83.8 | | |
| • Marital Status | | | | | | |
| - Married | 4 | 80 | 1 | 20 | 17.45 | 0.001 |
| - Single | 3 | 13.6 | 19 | 86.4 | | |
| - Widow | 1 | 6.7 | 14 | 93.3 | | |
| - Divorce | 1 | 6.7 | 14 | 93.3 | | |
| Residence | | | | | | |
| ✓ Rural | 1 | 33.3 | 2 | 66.7 | 0.733 | 0.392 |
| ✓ Urban | 8 | 14.8 | 46 | 85.2 | | |
| • Occupation | | | | | | |
| - House wife | 2 | 11.1 | 16 | 88.9 | 0.653 | 0.721 |
| - Employ | 5 | 20 | 20 | 80 | | |
| - Other | 2 | 14.3 | 12 | 85.7 | | |
| Received training on dealing with the elderly | | | | | 0.274 | 0.600 |
| Yes | 1 | 25 | 3 | 75 | | |
| No | 8 | 15.1 | 45 | 84.9 | | |
| Demographic characteristics | | | | | | |
| • Age | Mean | SD | Mean | SD | f | P |
| • Degree of closeness to the elderly | 1.88 | 0.92 | 1.68 | 0.878 | 0.391 | 0.534 |

Table (12): demonstrates that, there was highly statistically significant relation between informal caregivers marital status, and their level of attitude with ($P = < 0.001$).

Table (13): Relation between informal caregiver's skills and their demographic characteristics, (n=57).

| Demographic characteristics | Informal caregiver's skills | | f | P |
|-----------------------------|-----------------------------|-------------------|---|---|
| | Unsatisfactory (27) | Satisfactory (30) | | |
| | | | | |

| | N | % | N | % | χ^2 | |
|--|------|------|------|-------|----------|-------|
| Sex | | | | | | |
| ✓ Male | 1 | 25 | 3 | 75 | 0.863 | 0.353 |
| ✓ Female | 26 | 49.1 | 27 | 50.9 | | |
| • Education level | | | | | | |
| - Read and write | 0 | 0 | 14 | 100 | 22.65 | 0.000 |
| - Secondary education | 1 | 16.7 | 5 | 83.3 | | |
| - Bachelor's degree | 26 | 70.3 | 11 | 29.7 | | |
| • Marital Status | | | | | | |
| - Married | 0 | 0 | 5 | 100 | 22.48 | 0.000 |
| - Single | 4 | 18.2 | 18 | 81.8 | | |
| - Widow | 12 | 80 | 3 | 20 | | |
| - Divorce | 11 | 73.3 | 4 | 26.7 | | |
| Residence | | | | | | |
| ✓ Rural | 0 | 0 | 3 | 100 | 2.85 | 0.091 |
| ✓ Urban | 27 | 50 | 27 | 50 | | |
| • Occupation | | | | | | |
| - House wife | 1 | 5.6 | 17 | 94.4 | 21.62 | 0.000 |
| - Employ | 14 | 56 | 11 | 44 | | |
| Other | 12 | 85.7 | 2 | 14.3 | | |
| received training on dealing with the elderly | | | | | 3.87 | 0.04 |
| Yes | 0 | 0 | 4 | 100 | | |
| No | 27 | 50.9 | 26 | 49.1 | | |
| Demographic characteristics | | | | | | |
| | Mean | SD | Mean | SD | f | P |
| • Age | 32.4 | 1.07 | 37.7 | 1.07 | 3.14 | 0.07 |
| • Degree of closeness to the elderly | 2.11 | 0.89 | 1.36 | 0.718 | 12.15 | 0.001 |

Table (13): shows that, there was highly statistically significant relation between informal caregivers education level, marital status, occupation and their level of skills with ($P = < 0.000$).

Discussion

Part I: Regarding Sociodemographic characteristics:

The present study showed, study participant's socio-demographic characteristics; the majority of sample are females. These results agree with **Stirling et al., (2018)**. Australia, who study "Measuring dementia carers' unmet need for services – an exploratory mixed method study" and with **Song, (2021)**, Korean Community Health Survey who study "Family Caregivers of People with Dementia Have Poor Sleep Quality: A Nationwide Population-Based Study." whom reported that informal caregivers were mostly women.

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From researcher point of view this can be attributed to being the primary care providers and usually accompanies the elderly during the home and hospital visits were females.

Moreover in the current study, the sample mean age was 35.24 ± 10.9 and less than half employed while one third not employed this result agree with **Rosemary et al., (2023)** in Kumasi, Ghana and reported that participants aged between the ages of 20 and 39 years with mean age was 35.24 ± 10.9 and 14 participants were employed while six were unemployed. Also in the same line with **Mohammed et al., (2022)** Egypt, who study "Assessment of Knowledge and Practices Regarding Elderly Care among Elderly Care Givers at Geriatric Homes" and found that, elderly caregivers' age ranged between twenty to sixty years old with two fifths of them age was ranged from 41 to less than 50 years old with the mean age was 38.53 ± 9.79 .

Also with **Almehmadi & Alrashed ,(2023)** who study "The experience of informal caregiving within Saudi society: expressed needs and expectations" Saudi and reported that more than half of the care recipients were female and almost half were aged 60 years or older with mean age was 35.33 ± 10.8 .

The finding goes on the same line as **Rodrigo-Baños et al., (2021)** who studies "A Comprehensive Assessment of Informal Caregivers of Patients in a Primary Healthcare Home-Care Program" Barcelona (Spain) and indicated in their study 81.73% were female. This trend was opposite to what was found in a study in China by **Chiu et al., (2020)** who study "Health Promotion and Disease Prevention Interventions for the Elderly: A Scoping Review from 2015–2019" and found that, more than half of the studied sample were married men, in this regards **James et al., (2021)** revealed in their study about socio - demographic, health and functional status correlates of caregiver burden among care recipients age sixty years and older in Jamaica that, more than half of the studied sample were single female.

From the researcher point of view in Egypt, caregiving is a female occupation, and this give a reason why the majority of the study sample were more females than males.

Regarding caregiver educational level the present study showed that About two third of informal caregivers had bachelor's degree and only one fifth had secondary education, this results agree with a study done by **Amar et al., (2022)** who study "Elderly Caregivers' Awareness of Caregiving Health Risks" Israel and reported that over one-third (38.9%) had an academic education. In the same line with the previous findings, **Kehoe et al., (2019)** found in their study about "quality of life of caregiver so folder patients with advanced cancer

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in United States" that, more than half of the studied caregivers obtained some college or above

This finding is in agreement with that of **Ekström et al., (2020)** who studied high burden among older family caregivers is associated with high prevalence of symptoms: data from the Swedish Study "Good Aging in Skane (GAS)". Where they concluded that, more than one third of caregivers were with low educational level.

According to marital Status the result reveals that less than half of informal caregivers were single and nearly one quarter were widow and divorced while only less than tenth were married. On the other hand, the study finding was incompatible with the result published in Healthcare and carried out at by **Amar et al., (2022)** who reported that Most of the participant were married (88%). Also this result was in disagreement with **Rodrigo-Baños et al., (2021)** who reported that fifty -eight caregivers (58.65%) were married.

As well **Bull et al., (2016)**, USA who found in their study about Family caregivers' knowledge of delirium and preferred modalities for receipt of information that, the knowledge about fall prevention presented by informal elderly caregivers was incomplete or considered minima.

From researcher point of view the lack of understanding and knowledge of daily care for elderly could be owing to the following factor. a situation in which there is no established educational program for caregivers, and they receive insufficient education on care for elderly.

in the same line with **Seangpraw and Ong-Artborirak, (2020)**, whom study Knowledge and Behaviors Toward Health Care for Elderly Patients with Hypertension, and Quality of Life Among Informal Caregivers in Northern Thailand; showed that knowledge scores ranged from 8 to 22, mean = 13.9, SD = 3.3. The majority of participants (39.6%) had overall scores at a low level; 38.8%, at a fair level; and 21.6%, at a high level.

In the same line with, **Ab Ghani et al., (2022) Malaysia**, who study" Knowledge, Practice and Needs of Caregiver in the Care of Older People: A Review" and reported A total of 117 articles were initially found using the same variable. After using a set of criteria in the screening process, nine articles were found relevant to include in this review. This review of the articles presents a summary of (1) caregivers' knowledge about the care of older people, (2) caregivers' practice in the care of older people and (3) caregivers' needs in the care of

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older people. The analysis reveals that most of the caregivers addressed a lack of knowledge about and poor practice in the care of older people.

Also this result was in disagreement with **Nahyeni et al., (2018)** who reported that the knowledge and practices of family caregivers in the care of older relatives is generally poor.

Regarding to informal caregivers total skills regarding methods of integrated home care for the elderly, the present study revealed that, more than half of informal caregivers had satisfactory level of skills regarding methods of integrated home care for the elderly while more than two fifths of them had unsatisfactory level of skills. This study was in the same line with **Santos et al., (2022)**, who mentioned that 58.9% of informal caregivers had satisfactory level of skills regarding methods of integrated home care for the elderly. Also, this study supported by **Rodrigues et al., (2020)**, who conducted a study entitled "Educational intervention to increase the skill of informal caregivers for the elderly: a quasi-experimental pilot study" and found that 53.2% of studied informal caregivers had satisfactory level of skills regarding care for the elderly at pre intervention. From the investigator point of view, more than half of informal caregivers had satisfactory level of skills due to nearly two thirds of them had Bachelor's degree.

Regarding relationship between total knowledge score and caregiver's demographic characteristics the present study clarifies that, there was highly statistically significant relation between informal caregivers education level, marital status, occupation and their level of knowledge with ($P = < 0.000$).also there were statistically significant relation between age, degree of closeness, residence and sex with total knowledge level. These results in the same line with, **Alma., et al(2022)** Egypt who study "Relationship between Caregiving Burden, knowledge and stigma of Caregivers Caring for Older Adults with Alzheimer disease" clarifies that there were statistical significance relation was found between all demographic characteristics of family caregiver and caregiving burden, stigma, and knowledge.

Also in the same line with **Romany et al., (2020)** who study "Knowledge, attitude and health-seeking behavior among family caregivers of mentally ill patients at Assiut University Hospitals: a cross-sectional study" and reported that studied caregivers had low scores of knowledge and attitude towards mental illness. Age of the caregivers, their education, and the type of first consulted care and aggressive behavior of the mentally ill relatives were the significant predictors of caregivers' knowledge and attitude towards mental illness.

Also Consistent with other studies, **Yenişehir et al., (2019)** who study "Knowledge and practice of nursing home caregivers about urinary incontinence" and found that caregivers who received higher level education gave higher scores for knowledge about the elderly. From researcher point of view a possible reason is that long-term education improved the working ability of caregivers, and can also teach additional knowledge and further correct their misunderstanding about ageing. Despite the association of knowledge scores with pre job training being significant in our model, this result could not be stable and needs further research. It may be due to the effect of short-term training being not significant. In addition given that this driving force factor can encourage caregiver to learn additional information relative to their work.

Concerning relation between informal caregivers' attitude and their demographic characteristics, the current study demonstrated that, there was highly statistically significant relation between informal caregivers' marital status and their level of attitude. This study results was in agreement with **Zhang & Sun, (2019)** who found that statistically significant relation between informal caregivers' marital status and their level of attitude. Contrariwise, this study was disagreed with **Janse et al., (2017)**, in **Netherlands** who carried out a study entitled " The effects of an integrated care intervention for the frail elderly on informal caregivers: a quasi-experimental study " and revealed that no statistically significant relation between informal caregivers' marital status and their level of attitude.

Regarding relation between informal caregivers' skills and their demographic characteristics, the current study demonstrated that, there was highly statistically significant relation between informal caregivers' education level, marital status, occupation and their level of skills. This study was supported by **Harmuch et al., (2021)**, in **Brazil** who conducted a study entitled "Competence of aged informal caregivers of people in home care" and revealed that statistically significant relation between informal caregivers' education level, marital status and their level of skills.

In relation to correlation between knowledge, skills, and attitude, the present study revealed that, there was highly statistically significant positive correlation between informal caregivers' total knowledge, and their total skills. This results of present study was agreed with **Dixe et al., (2019)** who found that statistically significant positive correlation between informal caregivers' knowledge and skills. Also, this study disagree with **Tan et al., (2020)**, who conducted a study entitled "Caregiving Self-efficacy and Knowledge Regarding Patient

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Positioning among Malaysian Caregivers of Stroke Patients" and revealed that no statistically significant positive correlation between informal caregivers' knowledge and skills.

Conclusion

In the light of the present study findings, it can be concluded that nearly two fifth of informal caregivers had a poor knowledge about methods of integrated home care for the elderly, the majority of informal caregivers had a positive attitude regarding methods of integrated home care for the elderly, and more than half of informal caregivers had satisfactory level of skills regarding methods of integrated home care for the elderly. There are a strong relationship between informal caregivers' total knowledge, and their total skills.

Recommendations

For informal caregivers:

- Emphasize the importance of availability and distributions of pamphlets and booklet containing the basic knowledge for informal caregivers about methods of integrated home care for the elderly.
- Increase informal caregiver's awareness toward methods of integrated home care for the elderly by implementation educational training program in outpatient clinics and campaigns should be conducted in the form of mass society.
- Provide training programs for informal caregivers to increase their level of skills regarding methods of integrated home care for the elderly.

For Future researches:

- Future research is required in other cities and on larger sample.

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