

The Impact of Behavioural Change Counseling on Depression among the Elderly

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Abstract

Objectives: Depression is the second leading cause of disability among elderly patients and negatively affects quality of life. This study aimed to explore the impact of a behavioural counselling intervention on elderly patients with depression in Oman. The hypothesis was that, as engagement with social support and activities increased, depression score would decline. **Methods:** This observational cross-sectional study included 16 elderly patients attending the elderly outpatient clinic of Al Ghubra Health Centre, a primary health care (PHC) institution in Muscat, Oman. All patients had been diagnosed with depression using the 15-item Geriatric Depression Scale (GDS-15). Each patient underwent short weekly behavioural counselling sessions involving cognitive behavioural therapy, problem-solving therapy and interpersonal therapy over a period of four months. Pre- and post-intervention GDS-15 scores were compared to assess the impact of the intervention using a paired sample t-test. **Results:** There was a significant reduction in mean GDS-15 score following the intervention (mean score: 8.63 ± 3.18 versus 6.00 ± 3.69 ; $P < 0.001$). Moreover, the mean number of weekly social activities increased from 0.75 ± 0.93 to 5.50 ± 2.92 . **Conclusion:** The findings of this study support the implementation of brief, cost-effective behavioural counselling interventions at PHC institutions in Oman in order to prevent or reduce depression among the elderly.

Keywords: Elderly; Depression; Behavior Modification; Cognitive Behavioral Therapy; Primary Health Care; Geriatric Assessment; Oman

Advances in Knowledge

- A behavioural counselling intervention designed to increase participation in social activities was found to significantly reduce depression among elderly patients with depression in Oman, resulting in a 25% reduction in mean score using the 15-item Geriatric Depression Scale.
- To the best of the authors' knowledge, this study is the first of its kind in Oman to explore the effect of short behavioural interventional sessions on elderly patients with depression at the primary healthcare (PHC) level.

Application to Patient Care

- Late-life depression is an important public health concern. The findings of the current study support the implementation of behavioural counselling interventions at the PHC level in order to curb or prevent depression among the elderly.

Introduction

The number of adults aged 60 years and above is increasing worldwide [1]. According to the World Health Organization (WHO), the proportion of older adults in the global population is expected to double from 11% to 22% between 2000 and 2050 [2]. In Oman, the

total number of elderly individuals has increased from 38,720 in 1971 to 217,810 in 2020, with an average annual increase of 3.6% [3]. The proportion of elderly individuals in Oman is expected to increase to 13.1% of the total population by 2050 [4]. This is likely because declining fertility rates and improvements in healthcare have increased expected life span [1, 2]. Nevertheless, the functional, psychological, behavioural and social limitations associated with aging can place additional strain on the caregivers of elderly individuals, as well as on the healthcare system as a whole [2, 5].

In Oman, primary health care (PHC) institutions represent the first point of care for elderly patients. In 2014, the Ministry of Health (MOH) announced that elderly health clinics would be launched at the PHC level [4]. Since then, the number of elderly people attending these clinics has increased annually. According to unpublished data from the Directorate General of Health Services (DGHS), a total of 311 older patients attended the elderly clinic of the Al Ghubra Health Centre, a PHC in Muscat, the capital city of Oman, in 2019. The clinic is run by a general practitioner and a staff nurse once a week. All geriatric patients are seen biannually and screened for non-communicable diseases, cancers, dementia, nutritional deficiencies, fall risk and depression; additionally, they are assessed to determine level of social and environmental support along with their ability to perform activities of daily living.

Depression is the second leading cause of disability among elderly patients, affecting approximately 7% of the world's older population [6, 7]. Late-life depression (LLD) is defined as a depressive disorder occurring in an individual over 60 years of age [8]. Depression can adversely affect the quality of life of older adults, including their physical and social functioning, sleep, appetite, interests and hopes [9]. Moreover, LLD can lead to increased morbidity and mortality [9, 10]. Unfortunately, a diagnosis of LLD can be difficult because common symptoms of depression are often attributed to the pathological aging process by both healthcare professionals and the family of the elderly person alike [11]. Predisposing factors for LLD include female gender, previous clinical depression, chronic or disabling illnesses (e.g., cerebrovascular illness), polypharmacy, substance use, persistent sleep difficulties, being widowed or divorced, being socially disadvantaged, caregiving responsibilities and lack of social support [8, 12]. In turn, precipitating risk factors include bereavement, change of residence and adverse life events, such as a recent loss, separation, financial crisis, declining health and marital problems [8].

In terms of management, there is evidence to support the use of psychotherapy in mild to moderate cases of LLD, either alone or in combination with pharmacotherapy [10, 13]. Psychotherapy modalities that have proven effective in LLD include cognitive behavioural therapy (CBT), problem-solving therapy (PST), interpersonal therapy (IPT), reminiscence and life review therapy and brief psychodynamic therapy [14]. In Oman, psychotherapy is primarily provided at tertiary healthcare institutions or dedicated psychiatric facilities, such as the Sultan Qaboos University Hospital or Al Masara Hospital. However, such modalities can be applied at the PHC level in order to reduce the burden on tertiary healthcare facilities [15].

This study aimed to explore the impact of a psychotherapy and behavioural change counselling intervention involving CBT, problem-solving therapy and IPT in managing older adults with depression at the PHC level. The primary objective was to achieve a 20% reduction in depression score after 3–4 months of weekly counselling sessions. The secondary outcome was to enhance the elderly individual's level of social support and engagement by encouraging their participation in feasible social activities, such as weekend family gatherings, gardening, fishing, cooking and storytelling with their grandchildren.

Methods

This observational cross-sectional study was conducted over a period of four months at the Al Ghubra Health Centre in Muscat. The target population included all Omani patients aged 60 years or more who were attending the elderly clinic of the Al Ghubra Health Centre during the study period and who had been diagnosed with mild to moderate depression. According to unpublished statistics from the DGHS, a total of 311 patients attended the elderly clinic in 2019 out of a total population of 989 in the surrounding catchment area. Moreover, data suggests the rate of depression in Oman among community-dwelling elderly people is 16.9% [16].

Home care and bedridden patients were excluded from the study, as were those with hearing impairments who were not using hearing aids, those unable to engage in a coherent conversation and those taking psychiatric medications (i.e., antidepressants, mood

stabilizers or antipsychotics) or other medications that may cause depression (e.g., propranolol). Patients with a history of stroke, alcohol dependence/drug abuse and acute psychological or medical conditions requiring immediate care were also excluded [8]. Similarly, patients with chronic thyroid dysfunction were excluded due to the potential for false-positive scores for certain symptoms of major depression, such as lack of energy or problems with memory recall [8].

All participants were screened for depression using the short form of the Geriatric Depression Scale (GDS). The GDS is an internationally validated screening tool for LLD invented by Yesavage et al. in 1982 [17]. In the original, long form of the questionnaire, participants are asked to respond either 'yes' or 'no' to 30 items in reference to how they have felt over the preceding week. In 1986, a shortened, 15-item version of the GDS (GDS-15) was developed [18]. This version takes approximately 5–7 minutes to complete and is considered more convenient for physically ill and mildly to moderately demented patients who have short attention spans or are easily fatigued [19, 20]. Of the 15 items, 10 indicate the presence of depression when answered positively, while the rest (items #1, #5, #7, #11 and #13) indicate depression when answered negatively [18].

The GDS-15 has been adopted in the MOH national elderly care programme in Oman and is available to PHC providers in both Arabic and English. Both the English and Arabic versions of the GDS-15 have been found to have high sensitivity and specificity; moreover, the validity and reliability of this scale is supported in both clinical practice and research [21–23]. Overall, the GDS-15 is a useful screening tool to facilitate the assessment of depression in older adults in primary care settings as a baseline measurement; however, it does not assess suicidality [24].

At baseline, all participants were screened for depression using either the validated English or Arabic version of the GDS-15 at the time of their first visit to the elderly clinic by a general practitioner and staff nurse [18, 22]. For the purposes of the study, scores of 0–4, 5–8, 9–11 and 12–15 were considered to indicate no, normal, mild, moderate and severe depression, respectively. Only those who scored ≥ 5 were deemed eligible for inclusion in the study [22]. During the initial visit, additional socioeconomic information was collected from participants via a 5-point Likert scale questionnaire, including age, gender, marital status, work status, financial status, education level, social support, presence of other chronic illnesses and personal or family history of mood disorders. Furthermore, the investigator reviewed the participants' medical charts to determine their list of current medications, allergies and history of substance use, along with their level of functioning and disability. Finally, the Mini-Mental State Examination was administered to assess cognitive functioning [25].

Interventional counselling was subsequently administered by the principal investigator during private sessions conducted with each elderly participant and their primary caregiver. Each session lasted approximately 50–60 minutes and was conducted on a weekly basis in the morning during the normal duration of the elderly clinic. Participants were counselled regarding opportunities to increase their participation in social activities. This was achieved by teaching them how to identify problems, brainstorm solutions with their caregiver and, finally, implement the agreed solution. The participants were guided to identify and challenge maladaptive thoughts or cognitive distortions to reduce emotional intensity and problematic behaviours. Weekly follow-up appointments were scheduled in agreement with the participants and their caregivers and were conducted via face-to-face meetings or telephone calls. During each follow-up appointment, participants and primary caregivers were asked to report the number of social activities and gatherings that the elderly person had participated in over the course of the preceding week.

Data were analysed using the Statistical Package for the Social Sciences (SPSS), Version 23.0 (IBM Corp., Armonk, New York, USA). Collected data were entered daily into the SPSS program by the principal investigator after each interview with the participants. Descriptive statistics like means and frequencies were used to present results concerning sociodemographic variables. Pre- and post-GDS-15 scores were compared as an indicator of the impact of the behavioural therapy. Moreover, data regarding number of social activities per week were also calculated. A paired sample t-test was performed, after testing all assumptions, to assess the impact of the behavioural intervention on GDS-15 score.

Ethical approval for this study was granted by the MOH Centre of Studies and Research, Oman. Informed verbal consent was ob-

tained by the principal investigator at the beginning of the initial interview from both the participants and their caregivers. Collected data were checked by the investigators on a frequent basis. In addition, the computer on which the data were stored was secured with a password known only to the primary investigator in order to ensure the confidentiality and privacy of any identifying information.

Results

A total of 16 elderly Omani patients with baseline GDS-15 scores of ≥ 5 agreed to participate in the study. Overall, 11 (68.8%) were female and five (31.2%) were male. The mean age was 71.94 ± 9.15 years (range: 61–89 years old). The majority of the participants were either obese ($n = 6$; 37.5%) or overweight ($n = 5$; 31.3%). Most were married ($n = 8$; 50%) or widowed ($n = 7$; 43.8%). All of the participants resided with their families. In terms of financial status, the majority ($n = 10$; 62.5%) received a monthly income of 100–299 Omani rials. Moreover, most participants ($n = 10$; 62.5%) were illiterate. Only three individuals (18.8%) were educated to the high school level or above. All of the participants except one (93.8%) suffered from chronic illnesses at the time of the study. The prevalence of polypharmacy (i.e., concurrently taking more than four medications) was 31.3% [Table 1].

Characteristic	n (%)
Age in years	
60–69	9 (56.2)
70–79	4 (25)
80–89	3 (18.8)
Gender	
Male	5 (31.2)
Female	11 (68.8)
Marital status	
Single	1 (6.2)
Married	8 (50)
Widowed	7 (43.8)
BMI category	
Normal	4 (25)
Overweight	5 (31.3)
Obese	6 (37.5)
Morbidly obese	1 (6.2)
Monthly income in OMR	
0	3 (18.8)
1–100	1 (6.2)
100–299	10 (62.5)
300–500	2 (12.5)
Education level	
Illiterate	10 (62.5)
Semiliterate (can read)	1 (6.2)
Literate (can read and write)	2 (12.5)
High school	2 (12.5)
Graduate/postgraduate	1 (6.2)

Chronic illness	
Yes	15 (93.8)
No	1 (6.2)
Number of medications	
0	1 (6.2)
1–3	10 (52.5)
≥4	5 (31.3)

BMI = body mass index; OMR = Omani rials.

Table 1: Sociodemographic characteristics of elderly patients with depression in Oman (N = 16).

Prior to the intervention, the mean number of social activities per week was 0.75 ± 0.93 (range: 0–3 activities per week). However, following the behavioural counselling sessions, the mean number of social activities increased to 5.50 ± 2.92 (range: 1–10 activities per week). Moreover, the paired sample *t*-test revealed a statistically significant difference in pre-post mean GDS-15 scores (8.63 ± 3.18 versus 6.00 ± 3.69 ; $t(15) = 6.294$; $P < 0.001$) [Table 2].

Stage	Mean score \pm SD	Mean SE	Correlation	P value	Mean difference in score \pm SD	Mean SE	95% CI	t value	df	P value
At baseline	8.63 ± 3.18	0.795	0.892	<0.001	2.63 ± 1.67	0.417	1.736–3.514	6.294	15	<0.001
At follow-up	6.00 ± 3.69	0.922								

SD = standard deviation; SE = standard error; CI = confidence interval; df = degrees of freedom. *Assessed by the investigator during interviews with the participants using either validated English or Arabic versions of the 15-item Geriatric Depression Scale [18, 22].

Table 2: Pre-post comparison of depression scores* at baseline and following a behavioural counselling intervention among elderly patients with depression in Oman (N = 16).

Discussion

The current study sought to evaluate the impact of a behavioural counselling intervention on depressed older Omani adults over a period of four months. The intervention was tailored to each individual and focused primarily on opportunities for increasing participation in social activities using CBT, problem-solving therapy and IPT. Prior to the intervention, the participants seldomly participated in any social activities. However, after the behavioural counselling sessions, the mean number of social activities increased, with some participants taking part in up to 10 social activities per week. To the best of the authors' knowledge, this study is the first of its kind in Oman to explore the effect of short behavioural interventional sessions on elderly patients with depression at the PHC level. The intervention was successful, resulting in a 25% reduction in mean GDS-15 score, overshooting the set objective of a 20% reduction. This reduction was gradual and occurred with time, with the mean GDS-15 score steadily decreasing over the study period as additional follow-up sessions were conducted.

Of the three different types of psychotherapy incorporated within the intervention, CBT is based on the theory that an individual's interpretation of situations affects their mood and behavior [8]. During treatment, the patient learns to identify, challenge and restructure maladaptive thoughts or cognitive distortions in order to change certain behaviours. Problem-solving therapy is a form of CBT that involves teaching the patient to identify problems, brainstorm solutions and try to implement and evaluate the effectiveness of proposed solutions. In turn, IPT is a structured, time-limited form of treatment based on the premise that the onset and recurrence of depression is related to interpersonal relationships. It focuses on grief, interpersonal conflicts, role transitions and interpersonal deficits. The technique is often used to explore, clarify, express feelings and to change behaviour [8].

Various studies have found that CBT, problem-solving therapy and IPT are effective in managing mild to moderate depression among the elderly in PHC settings [8, 13, 14]. Other potential forms of psychotherapy for older adults with LLD include reminiscence and life

review therapy which are based on Erikson's psychosocial stages of development [8]. Unstructured reminiscence therapy focuses on reviewing positive life events to enhance wellbeing, while structured reminiscence therapy typically covers the entire life span and is used to evaluate both positive and negative events with the goal of reframing and integrating them. Brief psychodynamic therapy is another form of psychotherapy which focuses primarily on past conflicts between a caregiver and an older relative which may be re-activated in a caregiving situation; however, this form of therapy can lead to difficulties separating the caregiver's emotions and needs from those of the elderly person [8].

All of the participants in the present study resided with their respective families. This type of living situation for elderly relatives is extremely common in Oman and corresponds with traditional societal values and Islamic cultural practices in the Gulf [26]. Such living arrangements proved very useful when guiding the participants during the behavioural counselling sessions to help identify appropriate and fitting social activities to fit their unique interests, hobbies and social circumstances. Anecdotally, most of the male participants enjoyed activities like fishing, daily walks with friends, gardening, or storytelling. On the other hand, the female participants more commonly took pleasure in activities like cooking, sewing and social gatherings.

Nonetheless, encouraging social gatherings was a challenge at many points during the study period, particularly due to the coronavirus disease 2019 (COVID-19) pandemic, during which time social distancing was advised to reduce risk of infection, especially among older adults. However, the use of problem-solving techniques helped in the case of an old widow who lived alone with her daughter. The widow was feeling sad and had developed an intense fear of COVID-19, to the point where she even slept with her daughter in the same bed. She felt very lonely, particularly when her daughter was busy with household chores. A solution was proposed to place a comfortable chair on the balcony overlooking the street every day. In this way, the widow could sit on the balcony and see her neighbours and greet them every morning and evening from a safe distance. She was subsequently much happier with this new opportunity for social connectivity, and her depression score decreased dramatically.

Another old woman, who was depressed and anxious about her alcoholic son, was encouraged through verbal reinforcement to engage in hobbies like cooking and sewing with her daughters. This helped the elderly woman to improve her mood and move forward. Other researchers have reported similar findings [27-29]. Similarly, verbal reinforcement was helpful for another elderly patient with uncontrolled diabetes who was in poor psychological condition due to an infected wound and was refusing to talk with her family members. Weekly phone calls were scheduled and verbal reinforcement was used to change her thinking and behaviour gradually. By the end of the third month, the patient was able to communicate with a more optimistic view and was beginning to engage once again in family-related social activities.

Grief from the loss of a loved one can exacerbate depression in the elderly [8, 30]. A similar situation had occurred for one of the participants of the current study due to the death of his son. Both problem-solving and CBT enabled the man to re-join his social circle and take part in his former hobbies, such as fishing and daily walks on the beach. By the end of the counselling intervention, his GDS-15 score had improved from 6 to 3. Another participant had similarly lost his wife and became isolated from his family, leading to major depression. In this case, behavioural interventions, including family meetings, were helpful in guiding the participant to overcome his isolation.

Another major cause of depression among the elderly is hearing impairment as this can lead to social isolation [31]. In the present study, an elderly participant with hearing difficulties was unable to use her hearing aids properly. The problem was identified and explored using active listening; subsequently, problem-solving was used to determine an appropriate solution. Her hearing aid was fixed and she was able to reconnect with her family circle, with a subsequent improvement in GDS-15 score from 10 to 6. Chronic pain can be another cause of depression in the elderly [32]. Another participant suffered from chronic lower back pain and had moderate depression. Interventional counselling sessions were aimed at providing prompts and cues along with social skill development; subsequently, she was able to return to her former hobby of watching television with family members. This enabled her to refocus her thinking, thereby improving her depression.

Overall, the findings of this study highlight the importance of social connectivity and support among elderly patients with depression, in line with previous research on this topic [8]. Moreover, the results indicate that brief behavioural intervention sessions for the elderly can be implemented at the PHC level in Oman to curb or prevent depression. Bruce et al. similarly advocated for the integrated management of LLD at the PHC level [33]. Furthermore, the WHO has published a Mental Health Gap Intervention Guide (mhGAP-IG) to allow for the care of patients with mental, neurological and substance use disorders in non-specialist health settings [34]. It is the authors' belief that the mhGAP-IG module can be effectively adopted at PHC institutions in Oman during weekly clinics.

This study is subject to certain limitations. Due to the occurrence of the COVID-19 pandemic, face-to-face intervention sessions were limited and had to be replaced by frequent telephone calls; moreover, social activities in general were limited at this time due to social distancing mandates, in addition to the absence of community resources for the elderly. Further qualitative research is needed to more fully explore the causes and correlates of depression among the elderly population in Oman.

Conclusion

Depression among the elderly is an important public health concern, especially in a conservative country like Oman where the condition is likely underdiagnosed. Although psychotherapy is primarily restricted to tertiary healthcare institutions, there are behavioural interventions that can be implemented at the PHC level. The current study showed that short behavioural intervention sessions designed to increase participation in social activities were effective in managing depression among the elderly in Oman.

Conflict of Interest

The authors declare no conflicts of interest.

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