

‘Work in the Service of Mood’: An Occupational Therapy Programme Through Agricultural Activities for Older Adults in Institutional Care - Pilot Study at Dar Errahma, Constantine (Algeria)-

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Abstract—What happens when older adults living in an institution are once again provided with a meaningful daily occupation? This study examines how depressive symptoms evolve following an occupational therapy programme based on simple agricultural activities, such as planting, crop maintenance and poultry care. The intervention was offered to residents of Dar Errahma in Constantine with the aim of promoting engagement in meaningful activities and alleviating depressive symptoms.

Methodologically, the study is based on a quasi-experimental design involving a single group, with assessments conducted before and after the intervention. The sample consisted of four residents (two men and two women aged between 61 and 66 years) who participated in the programme from 15 January to 15 April 2026. The daily sessions were adapted to each participant’s abilities to promote active and regular participation. Depressive symptom intensity was assessed using the Beck Depression Inventory.

The results showed a decrease in the mean depression score from 42 in the pre-test to six in the post-test, representing a decrease of 36 points. Reported observations also indicated more harmonious relationships among the residents, an enhanced sense of personal worth and a greater sense of responsibility. These preliminary results highlight favourable changes following the intervention and emphasise the potential value of therapeutic agricultural activities in providing psychological support to older adults living in institutional care.

Keywords—occupational therapy, agricultural activities, depression, older adults, institutionalisation, pilot study.

I. INTRODUCTION:

Growing older means more than just witnessing changes in one’s body. It also involves psychological and social transformations that impact self-perception and interpersonal relationships. Retirement marks the end of a professional role, certain abilities may decline, loved ones may pass away, and one may sometimes need to transition from independent living to institutional care. However, none of these changes inevitably lead to distress, and old age is not a slippery slope towards sadness. However, when difficulties related to health, relationships and purpose accumulate, some individuals may gradually experience loneliness and emptiness. In some cases, this suffering manifests as depressive symptoms. Late-life depression is a well-documented public health issue worldwide (Cai et al., 2023). It often presents differently to how it does in younger adults, with more physical complaints, fatigue, and social withdrawal than overt sadness (Blazer, 2003; Fiske et al., 2009).

The quality of life of an older adult depends on more than just care, food, and shelter. In their model of successful ageing, Rowe and Kahn (1997) also include active engagement with life, such as maintaining relationships, participating in meaningful activities, and continuing to feel capable of taking action. However, institutionalisation can compromise this engagement. Goffman (1961) described how the highly regulated collective life of ‘total institutions’ can erode the initiative and identity of those living within them. When the daily schedule is rigid, there is less room for personal preferences, and some residents find themselves far from home and deprived of the activities that once structured their days.

Therefore, caring for the mental health of residents cannot be limited to responding when a disorder emerges; it also requires creating an environment that promotes participation. This is the domain of occupational therapy, which uses meaningful activities to support health and functioning (Wilcock, 2006). In this context, activity is not merely a way of ‘passing the time’; it incorporates movement, reflection, interaction with others and a sense of achievement. However, its effect is not automatic. It depends on the nature of the activity, how well it suits the individual, how it is organised, and where it takes place.

Our study is based on this observation. We examine a programme of simple agricultural activities — planting and poultry farming — offered to four residents of Dar Errahma in Constantine. We do not present it as a substitute for specialised psychological or medical care, but rather as one component of comprehensive care. Admittedly, the results obtained from this sample cannot be generalised. Nevertheless, they provide an initial insight and a line of inquiry worthy of further examination.

II. PROBLEM STATEMENT, OBJECTIVES AND SIGNIFICANCE OF THE STUDY

A. Problem Statement

Depressive symptoms, such as persistent sadness, loss of interest, decreased motivation, sleep disturbances, fatigue and feelings of worthlessness, affect the quality of life of older adults. These symptoms often overlap with health and living conditions, necessitating consideration of the specific characteristics of this life stage. In institutional settings, daily life, relationships and roles change, and a lack of suitable activities can result in a sense of emptiness and isolation. However, this does not mean that living in an institution necessarily causes depression; individual experiences vary according to personal circumstances, the quality of care, and the relationships established within the institution. Nevertheless, the question remains: how can residents be provided with activities that encourage their participation, support their autonomy, and respect their abilities?

Activities such as planting, maintaining crops, or caring for poultry provide opportunities for practical engagement, taking on responsibilities, and seeing the results of one's efforts. However, this potential value does not demonstrate effectiveness in itself: assessing the effect of a programme requires structured evaluation and examination of other factors that might explain the observed changes. Our central research question is therefore:

To what extent is implementing an occupational therapy programme based on agricultural activities associated with a change in the level of depressive symptoms among older adults living at Dar Errahma?

B. Objectives

To address the research question of our study, we have set out the following objectives:

- estimate the level of symptoms before and after the programme, and quantify the difference using the Beck Depression Inventory;
- describe the programme and its activities;
- to explore, within the limits of the available observations, social interaction, responsibilities and sense of personal worth;

Finally, we aimed to discuss the integration of meaningful activities into institutional settings and identify methodological limitations to guide future research.

C. Significance of the study

From a scientific perspective, the study describes a specific, practical experience involving planting and livestock rearing in relation to the mental health of older adults in institutional care. From a practical perspective, it demonstrates that simple activities, when adapted to each individual's health and abilities, can provide opportunities for daily participation. From a human perspective, it encourages viewing older people as individuals with skills, psychological needs and social needs, rather than merely as bodies requiring care.

III. THEORETICAL FRAMEWORK

A. Late-Life Depression and Institutional Life

Older adults do not always express distress through overt sadness. Loss of interest, fatigue, sleep disturbances, social withdrawal and decision-making difficulties are common and may overlap with the signs of physical illness or medication side effects (Blazer, 2003). Risk factors include the loss of a loved one, functional limitations, chronic illnesses and social isolation (Fiske et al., 2009). However, the relationship is neither simple nor inevitable; some residents experience stability and satisfaction, while others suffer despite favourable material conditions. It is also important to distinguish normal sadness following bereavement or a change in living environment from persistent and intense symptoms that require professional assessment.

Entering an institution can be a turning point, as daily routines change, relationships transform, and opportunities for decision-making decrease. For some individuals, however, institutional care can provide the security and social contacts that they had lost. The important thing is for the environment to be able to meet individual needs rather than merely providing basic necessities. Self-determination theory (Ryan & Deci, 2000) highlights this: well-being depends on the satisfaction of three psychological needs — autonomy, competence, and relatedness. A rigid organisation that ignores individual differences frustrates these needs, whereas a flexible organisation that allows individuals to make choices and contribute helps to fulfil them. A classic study by Langer and Rodin (1976) supports this perspective: nursing home residents who were given choices regarding their activities and responsibility for caring for a plant were found to be more alert, active and satisfied than those who were not given a sense of control.

B. Occupational Therapy and Meaningful Activity

The idea behind occupational therapy is that participating in meaningful activities contributes to health and adaptation (Wilcock, 2006). Hammell (2004) emphasises that the meaning of an occupation is not limited to productivity; it also derives from acting, being oneself, growth, and belonging. The Model of Human Occupation (Kielhofner, 2008) suggests that

engagement also depends on motivation (i.e. values and sense of efficacy), habits, and abilities. Therefore, activities must be chosen and adapted for the individual rather than imposed. Encouragingly, empirical evidence suggests that an occupational therapy programme can improve health, functioning and quality of life in older adults living at home (Clark et al., 1997), with these findings being replicated in a more recent lifestyle programme (Clark et al., 2012). However, these studies have focused on independent older adults rather than residents of institutional settings.

From a psychological perspective, the most frequently invoked mechanism is behavioural activation. According to Lewinsohn (1974), depression is associated with a reduction in rewarding experiences and a decrease in reinforcing interactions with the environment. Reintroducing structured, enjoyable activities can break the cycle of withdrawal. Treatments based on this principle have been shown to be effective (Cuijpers et al., 2007). Activity-based occupational therapy is consistent with this approach, placing greater emphasis on meaning and adapting tasks to individuals.

C. Agricultural activities

Gardening involves physical activity, contact with nature and the completion of tasks that produce tangible results. A meta-analysis by Soga et al. (2017) found an association between gardening and improvements in several health indicators, including depression, anxiety and well-being. In a review focusing on older adults, Wang and MacMillan (2013) concluded that gardening provides physical, psychological, and social benefits, while also highlighting the methodological limitations of many studies. A therapeutic horticulture programme was associated with a reduction in depressive symptoms among individuals suffering from clinical depression (Gonzalez et al., 2010), while gardening following a stressful experience was associated with better mood recovery and a greater reduction in cortisol levels than reading (Van den Berg & Custers, 2011).

Gardening activities can be divided into tasks requiring varying levels of effort, enabling them to be adapted to individual abilities. For example, one person could choose the seeds, while another could water the plants or organise the equipment. When carried out in small groups, they promote cooperation, and monitoring plant growth provides a clear temporal framework for the effort involved. However, these activities are not suitable for everyone; mobility difficulties, sensitivities, a fear of animals or simply a lack of interest may constitute barriers. Gardening is therefore just one option, rather than a universal model.

IV. PREVIOUS RESEARCH

The literature in psychogeriatrics is mainly structured around three major areas: non-pharmacological interventions; occupational therapy and participation; and meaningful activities.

Apóstolo et al. (2016) examined, through a systematic review, the effectiveness of non-pharmacological interventions among older adults experiencing depressive disorders. Atchison et al. (2025) conducted a systematic review with network meta-analysis of depression treatments for older adults living in long-term care, showing that the issue addressed in our study, namely the institutional context, is now subject to comparative examination. Collyer and Dorstyn (2024), for their part, reviewed a problem-solving therapy adapted for older adults with cognitive disorders, illustrating the importance of tailoring interventions to participants' abilities. Not all of these interventions are equivalent, and the conclusions of a general review cannot be directly applied to a gardening and livestock-rearing program.

Christie et al. (2021) conducted a systematic review to assess the effectiveness of occupational therapy in enhancing the daily functioning and participation of adults diagnosed with depression. They emphasise that an occupational programme should be evaluated not only in terms of symptom scores, but also in terms of indicators of participation and autonomy. However, our study differs from this research in terms of age group, programme type, and institutional setting.

Zuiderveen et al. (2016), on the other hand, examined life review and reminiscence therapy in relation to depressive symptoms among older adults. These approaches value personal experience and the meaning individuals attribute to their lives. However, their findings are not directly transferable to agricultural activities.

Finally, Eldridge et al. (2016) point out that the purpose of a pilot study is to assess the feasibility of an intervention and prepare for a trial rather than demonstrate its effectiveness, and Leon et al. (2011) emphasise that pilot studies should not be used to estimate an intervention effect. Our work falls within this category: it is an exploratory study that does not identify the underlying mechanism of the change or the programme component that contributed most to it.

V. METHODOLOGY:

The present study adopts a pilot approach based on a single-group pretest–posttest design. This involves assessing participants before the intervention programme is implemented (pre-test), administering the programme, and conducting a new assessment at the end of the intervention (post-test). The measurements collected at these two time points are then compared to identify any observed changes in the variables under study.

The main advantage of this design is that the same participants are assessed before and after the intervention, which makes it possible to examine changes within participants and limit the influence of differences between individuals when comparing the results. In this design, the pretest–posttest comparison is the main indicator of the changes observed following the intervention.

However, in the absence of a control group and randomised participant allocation, changes observed between the two measurement points cannot be attributed with certainty to the intervention itself. Other factors that may influence the results, such as events occurring during the study period, participant maturation, the effects of repeated measurement or regression to the mean, may also contribute to the observed changes (Campbell & Stanley, 1963; Shadish, Cook & Campbell, 2002).

Thus, within the framework of this pilot study, the single-group pretest–posttest design is primarily used to document changes in participants from the beginning to the end of the programme, and to provide initial evidence regarding the relevance and feasibility of the intervention. Nevertheless, the results should be interpreted with caution, particularly with regard to attributing the observed changes solely to the intervention programme.

A. Sample

The population consisted of Dar Errahma residents (Constantine, Algeria) who were able to participate in the activities, taking their health status and abilities into account. The sample comprised four purposively selected participants, including two men and two women aged between 61 and 66.

B. Instrument

For our investigation, we used the Beck Depression Inventory, consisting of 21 items with four graded response options scored from 0 to 3, providing a total score ranging from 0 to 63 (Beck et al., 1961; Beck et al., 1996). It provides comparable scores rather than general impressions, and its psychometric properties have been extensively studied (Wang & Gorenstein, 2013).

VI. RESULTS

A. Before the programme

The total score for the four participants was 168, corresponding to a mean score of 42. According to the classification used in the original study, this represents a very high level. Responses were concentrated on higher-scoring options, particularly with regard to sadness, pessimism, loss of pleasure in life, decision-making difficulties, fatigue and sleep disturbances.

B. The Programme

The participants planted and maintained different species (watering, cleaning and monitoring growth daily) and contributed to poultry care (providing food and water, and cleaning rearing areas). According to the study, these activities were organised according to each participant's health status and physical abilities — a central principle of occupational therapy. However, the methods of adaptation, task allocation and safety and hygiene procedures are not described in sufficient detail, nor is the number of sessions attended by each participant.

C. After the programme

The total score reached 24, corresponding to a mean score of 6, which represents a low level according to the classification used in the study. The responses were concentrated on the lower-scoring options.

Indicator	Before	After
Number of participants	4	4
Sum of scores	168	24
Mean	42	6
Variation of the mean	—	–36 points

VII. DISCUSSION

The main finding is clear: the mean score decreased from 42 to 6. However, it must be interpreted methodologically, as it concerns four cases and does not include a control group.

The high initial level can be understood in light of risk factors associated with late-life depression: changing roles, diminishing opportunities for participation, and loneliness (Fiske et al., 2009). Nevertheless, it cannot be asserted that this level resulted from institutional life, given the lack of information about each participant's personal history. It also has a methodological implication: such extreme initial scores are susceptible to regression to the mean, that is, a spontaneous decrease upon a second measurement that is independent of any intervention (Barnett et al., 2005).

Furthermore, a 36-point decrease over three months among all four participants is exceptionally large. This should prompt consideration of alternative explanations: the attention and support received during the study, participants' and evaluator's expectations, the possibility that the inventory was completed by an evaluator who was aware of the intervention, changes in health status or social environment, and other factors. Such threats are well recognized in study designs without a control group (Shadish et al., 2002).

That said, part of the decrease may genuinely be attributable to the programme. Structured activities provide a framework for the day and interrupt withdrawal, which is consistent with the logic of behavioural activation (Cuijpers et al., 2007; Lewinsohn, 1974). Caring for a plant or poultry may have given residents a greater sense of control over their environment in a manner similar to that observed by Langer and Rodin (1976), while also supporting the need for autonomy, competence and relatedness, as described by Ryan and Deci (2000). The reported improvement in social interaction is consistent with this interpretation: a shared activity creates conversation topics and fosters a sense of belonging. While these explanations align with reviews of gardening (Soga et al., 2017; Wang & MacMillan, 2013) and findings on therapeutic horticulture (Gonzalez et al., 2010), they are not demonstrated in the present study due to the absence of independent measures. Our findings also do not directly confirm the results of studies by Apóstolo et al. (2016), Christie et al. (2021) and Zuiderveen et al. (2016), as the populations, interventions and study designs differ.

In practical terms, these findings highlight the need for further research into occupational activities in institutional settings. Rather than considering these activities as an independent treatment for depression, institutions could offer flexible programmes in which residents choose from a variety of activities (such as gardening, handicrafts, artistic activities and social activities) according to their preferences and abilities.

VIII. LIMITATIONS

A. Several limitations should be noted:

- **Very small sample size:** The four participants preclude any generalisation and limit the examination of individual differences.

- **There was no control group,** so it is not possible to determine whether the decrease resulted from the programme, regression to the mean, or other factors.

Limited psychosocial measures mean that the reported improvements are not supported by established independent assessment tools.

- **No follow-up:** no subsequent assessment was conducted to determine the durability of the decrease.

IX. CONCLUSION AND RECOMMENDATIONS

This study aimed to establish the extent to which an occupational therapy programme involving agricultural activities could alleviate depressive symptoms among Dar Errahma residents. The mean score on the Beck Depression Inventory decreased from 42 to 6 among the four participants, accompanied by indications of improvement in social interaction, sense of personal worth and sense of responsibility. These results suggest that daily life in institutional settings should be reconsidered: rather than limiting care to meeting physical and material needs, residents should be provided with opportunities to participate in activities adapted to their abilities. However, these results must be considered in light of the study's limitations, and it cannot be concluded that agricultural activities were the sole or direct cause of the decrease. This exploratory study is consistent with the nature of a pilot study (Eldridge et al., 2016). Nevertheless, these preliminary findings suggest that exploring a range of activities adapted to residents' abilities in institutional settings is worthwhile, as a complement to addressing their physical and material needs.

Recommendations for institutions: Integrate mental health into care on an equal basis with physical needs. Offer several types of activity adapted to each resident's abilities and conducted in a safe environment. Involve residents in choosing activities. Promote collaboration among psychologists, healthcare providers and occupational therapists.

Recommendations for research: Use larger samples and, where appropriate from an ethical perspective, comparison groups (ideally with random allocation). Include follow-up assessments to evaluate the stability of the effects. Combine several assessment methods (e.g. clinical scales, interviews and observation) and verify the validity and reliability of the instruments in the context under study. Maintain continuous ethical vigilance, particularly with regard to informed consent among vulnerable older adults.

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