17

Older People Diagnosed with Dementia and the Role for Assistive Technology in the Community

Lesley Garcia and Blaine Robin

A contextual view of dementia

Macro context (WHO – contemporary discourse)

It is estimated that globally the number of people living with dementia (sub-types in Table 17.1) will increase from 57.4 million cases in 2019 to 152.8 million cases by 2050 (Nichols et al., 2022). In the UK alone, there are currently approximately 900,000 people living with dementia, with an anticipated increase to 1.5 million by 2040 (Wittenberg et al., 2019).

Table 17.1 Dementia sub-types and exemplar papers

Medical condition	Characterized by	Occupational therapy and general research
Alzheimer's disease	Degenerative changes in the structure of the brain	Pimouguet, C., Le Goff, M., Wittwer, J., Dartigues, J-F., Helmer, C., and Thyrian, R. Benefits of occupational therapy in dementia patients: Findings from a real-world observational study. *Journal of Alzheimer's Disease* 56(2) (2016), 509–517. doi:10.3233/JAD-160820
Vascular dementia	Changes in the veins/vessels that supply blood to the brain	Martínez-Campos, A., Compañ-Gabucio, L. M., Torres-Collado, L., and Garcia-de la Hera, M. Occupational therapy interventions for dementia caregivers: Scoping review. *Healthcare (Basel, Switzerland)*, 10(9) (2022): 1764. https://doi.org/10.3390/healthcare10091764
Dementia with Lewy bodies	Dementia preceding or occurring within one year after the	Crane, E., (2023) Occupational therapy for Lewy body dementia: strategies, supports, and resources. Available at:

	onset of motor Parkinsonian signs	https://torchbrothers.com/occupational-therapy-lewy-body-dementia/
Frontotemporal dementia	Group of primary neurodegenerative disorders primarily affecting the frontal and temporal lobes.	Vlotinou, P., Tsiakiri, A., Detsaridou, G., Nikova, A., Tsiptsios, D., Vadikolias, K., tand Aggelousis, N. Occupational Therapy interventions in patients with frontotemporal dementia: A systematic review. *Medical Sciences*, 11(4) (2023), 71. https://doi.org/10.3390/medsci11040071
Dementia due to the use of alcohol	Persistent cognitive impairments (e.g., memory problems, language impairment, and an inability to perform complex motor tasks) that meet the definitional requirements of dementia	Ridley, N. J., Draper, B., and Withall, A. Alcohol-related dementia: an update of the evidence. *Alzheimer's research & therapy*, *5*(1) (2013), 3. https://doi.org/10.1186/alzrt157

Dementia is a progressive and degenerative disease which compromises a person's cognitive, social and physical functions. As the person progresses from mild to more advanced stages of dementia, informal carers who form part of the dyad of the person living with dementia and their closest carer often share the burden of this diagnosis emotionally, physically, and financially. Access to diagnostic and therapeutic services in the UK have been shown to vary based on situational, structural, and cultural factors (Giebel et al., 2023).

Occupational therapy is included as one of the key professions qualified to provide essential therapeutic rehabilitative interventions for people living with dementia. This can be found in the report recently published by the World Health Organization in the Package of Interventions for Rehabilitation (PiR) for dementia (WHO, 2023). Module 3 (Neurological Conditions) lists the evidence-based therapeutic approaches and treatment modalities

recognized as appropriate in occupational therapy as well as therapy equipment needed at each stage of dementia.

Meso context (national/local – ONS, Council, CCG, etc.)

In the UK, Black Caribbean British people living with dementia show higher rates of dementia yet have limited access to dementia care services (Mukadam et al., 2023). The annual cost of dementia care in the UK is estimated to be £34.7 billion. As there is currently no pharmacological cure for dementia, it is essential that acceptable, accessible, cost-effective, psychosocial support services and interventions be developed and provided for diagnosed individuals and their carers including those from minoritized ethnic communities (World Health Organization, 2021).

Micro context (individual) level and within the Afro Caribbean community in the UK

Occupational therapy is recommended as a key health discipline in service delivery for people living with dementia (Jeon et al., 2023). However, people from the Black Caribbean, Black African and Black British community have a 20% higher incidence of dementia compared to the UK average (Mukadem et al., 2023).

An ethnoracial view of dementia in the UK

Here are some current data on the experience of people from Black Caribbean communities in the UK which are important to be aware of. These data may encourage occupational therapists who have an interest in health equity to explore developing and delivering culturally sensitive and rights-based interventions that improve access to services.

People from Black Caribbean communities present later to dementia services (Adelman et al., 2011), they present to services with more advanced disease (Tuerk & Sauer, 2015), and are less likely to receive a dementia diagnosis (Pham et al., 2018). There is limited understanding of the resistance to engage with the formal health system on the part of people living with dementia from Black, African, Caribbean backgrounds (Roche et al., 2021).

WFOT position on assistive technology

The World Federation of Occupational Therapists (WFOT) position statement on assistive technology encourages the global community of occupational therapists to recognize their

moral and ethical commitment to supporting people with disabilities (WFOT, 2019). This involves working flexibly to help people meet their occupational needs in a balanced way whether that be in the social, cultural, and environmental context, addressing their physical, and emotional needs. This should be addressed in an empowering way that takes into account local legislation and locally available equipment produced to the highest standards.

In the UK, for example, occupational therapist REMAP are a charity comprising volunteer engineers who have been in operation since 1996. (Remap, 2024). They work very closely with the client and referring occupational therapists to create bespoke pieces of assistive technology to help the needs of people with disabilities.

In the United Kingdom, the British Standards Institution (BSI) supports commercial practices that enhance the practical provision of machines and equipment sourced by the National Health Service (NHS) and councils on behalf of the communities that they serve. All companies involved in the manufacture and sale of assistive technology within the European Union must display the CE mark on all legitimate products as evidence of compliance with standards, as outlined in the European Union's regulations (European Union, 2019).

The Medicines and Healthcare products Regulatory Agency (MHRA) regulates standards and has the authority to recall faulty products. They also track any court rulings brought to bear by the Health and Safety executive in the event of civil or criminal negligence (Medicines and Healthcare Products Regulatory Authority, 2025). They advise all statutory providers about defective products that may impact the safety of patients and people with disabilities and provide an awareness-raising function that in turn helps in the education and development of practitioners working at the front line of assessment and care management.

Hot spot: other useful source of information

NICE (2019) Dementia Quality standard Reference number: QS184. Available at: https://www.nice.org.uk/guidance/QS184

Dementia assessment service pathway: inpatient

Dementia assessment screening services will vary depending on a number of service delivery factors. This could include service innovations linked to central government pilot funding;

benchmarked service delivery options linked to high-level demand due to epidemiological considerations or exploring proactive service innovation pathways to ease the burden on resource-strapped NHS and Social Care. Basically there are a variety service delivery models, but the essence of the service care pathway will be similar across all areas of the UK. This will mean triaging for risk factors; gaining consent from the client and immediate carers about treatment options; formulating an agreed plan of action and reviewing and evaluating the intervention. Here is an example of a dementia assessment screening centre's operations.

Centre A

Centre A is run like a hospital ward but located on the ground floor of a warden-controlled sheltered accommodation building at the heart of the community. The innovation behind this approach to dementia assessment was to remove the stigma of hospitalization and institutionalization. The main car park is shared with residents and employees in the neighbourhood. The main entrance of the building is accessed by an intercom system with locked entry.

Admission criteria

Referrals are received from Community Geriatrician, General Practitioners, Community Mental Health teams, Community Psychiatrists. These represent service specialists including medical physicians who are able to provide a legal and medical rationale for admission and treatment.

Consultation

The clients/their carer/spouse would have attended a consultation meeting with the specialist to examine the issues. Validation of the signs of memory impairments would have been discussed. The Mini mental state examination is an example of a tool that would be used to assess aspects of amnesia. A core assessment completed by a Care Manager may have been completed, examining the issues, exploring detailed examples of presenting risks which in their totality required further specialist decision-making at the multidisciplinary team level. Other physical assessments may be requested to assist in diagnosis further down the line.

The family will often add to the complex issues emerging in their lives as the carers of the person whose memory is beginning to deteriorate. Depending of the type and severity of

the memory impairment, the yearning for answers or specific diagnosis will be very strong. Added to this – the person with the memory impairment may not have any insight into changes in their mental disposition.

The professional responsible for organizing admission is usually the lead psychiatrist. In recommending an admission for a period of assessment he or she will normally confirm the availability of a vacant bed at centre A. Following the meeting with the client and the carer – he or she will provide the option of an NHS ambulance service to collect the patient on the day of admission. Some families organize transportation to bring their relatives to the hospital. On arrival, families will bring their own set of clothing and personal belonging. The patient, once welcomed into the facility, will be shown their bedroom and will be offered refreshments and a chance for the person to settle in.

Admissions Interview

The admissions interview occurs where an assigned key worker (e.g. Mental Health Nurse) meets with the patient and explains the process of the patients staying on the ward. Property checklist is completed along with the patients' preferences. This could include preferred names which they use, as many people have nicknames; preferred diet, if vegetarian, for example. The person may also have sensory needs and therefore use of glasses and hearing aids may be important to note.

Eligibility criteria and reason for admission

Vulnerability arises due to memory impairments. Impact on carers (e.g. spouses if married) could include domestic violence; violence and aggression towards home carers; emerging dual diagnosis impacting risk and safety. Emergence of self-neglect such as not preparing any meals of sufficient nutritional balance; leaving cooking appliances on after usage; poor attendance of personal activities of daily living; poor uptake of medication/non-compliance; non-attendance at important health screening assessments; frequent falls due to collapse; frequent infections and prolonged episodes of weakness due to non-assessment of anaemia.

Daily ward rounds and clinical meetings

Daily ward rounds and clinical meetings provide important contributions by all members of the multidisciplinary teams. These will include Occupational Therapist, Psychologist, Psychiatrist, Mental Health Nurse and Social Worker. Goal-setting strategies will be formulated by the team.

Early intervention

The early intervention while on the ward is to provide an environment where the patients can be comfortable, together with other patients and the staff. This is not dissimilar to the milieu community concept often used in psychotherapy. Patients are offered an Occupational Therapy programme as part of the assessment process. Examples of activities provided by the group-based occupational therapy programme can include the long-standing topics: Current Affairs, Music Appreciation, Art as Therapy, Gardening, Relaxation, Community Walks.

One-to-one occupational therapy allows for individual intervention to occupational performance in areas such as washing and dressing, safety in carrying out kitchen tasks. The Model of Human Occupation (MOHO) is established in the UK mental health services and many useful individual assessments from the MOHO battery are used to capture important evidence pertinent to the individual's needs.

All activities have a rationale with clear aims and objectives devised by the Occupational Therapy staff. They can include areas of focus such as increasing self-esteem, increasing concentration, improving social skills, and anxiety management.

Discharge planning

Options include the following:

1. Returning home – with a new home care package to ensure reablement approaches are embedded in how individuals meet their independent living needs. Sometimes the home care package will be increased from its previous iteration, taking into account the new diagnosis. Therefore, if the person was in receipt prior to admission of two home visits per day, this may now increase to three visits per day perhaps to support the return to bed component or a lunch time component to ease some of the burden from a partner or carer (e.g. an adult child).

2. Returning home with a care package, plus access to the local day hospital two or three days per week in order to reduce social isolation and occupational imbalance.
3. Rehousing: Some clients living in a council house no longer use what once was a home for a large family. As all the children have long since left home and perhaps widowhood has occurred, downsizing into a specialist sheltered accommodation scheme provides renewed options. Giving back a three-bedroom council house serves a sustainable housing agenda as a large family can become eligible to be rehoused to that dwelling. As part of a community or social trade-off the person can now be part of community of people with similar needs, often living in an environment which has a positive ambience/peaceful seclusion in the form of enclosed gated community from the outside world. A sheltered accommodation provides an on-site warden who can provide check calls to you in your one-bedroom apartment. They will call for emergency services should anything be wrong with the person. The person with early onset dementia can have access to home carers visiting the facility.
4. Rehousing: Residential Care home. As far as health and social care are concerned, the care home is always the last option when all the other options have been considered and – where realistic – exhausted. The main reason being timeliness of resource allocation. The care home referral particularly if subsidised by the local authority is the costliest option. Decision-makers have to be satisfied that the care managers have worked closely with the family and client to consider options such as 1 to 3 above before considering this option. Someone whose condition manifests as aggression in their own home may well manifest aggression in a care home among staff and residents so an opportunity to be assessed in Centre A over a long period of time can allow members of the multidisciplinary team to explore and analyse patterns of behaviour of patients in a coordinated manner.

Hot spot

There are fundamental aspects about the role of the Occupational Therapist in Centre A. These include Occupation Focussed and Occupation Centred intervention as primary to the needs of the patient. Assistive technology is secondary to the occupational needs of the patient and may take the form of aids such as toilet frames; perching stools in the kitchen or bathroom; use of mobile telephones; walking sticks; Zimmer frames; Key safes; Care Line pendant alarms; mobility sensors as well as digital technology as appropriate.

Caribbean Perspectives on Occupational Therapy in the United Kingdom, 1st edition/Blaine Robin et al., published: 1st July 2026. © Open University Press.

Tools to assist the learners

Consider the application of the Occupational Therapy Practice Framework-4 (OTPF-4) (American Occupational Therapy Association, 2020) used to develop an occupational profile of Mrs Samuels presented below. Table 17.2 delineates the categories: Occupations, Contexts, Performance Patterns, Performance Skills, and Client Factors, which all comprise the domain of occupational therapy intervention.

Table 17.2 OTPF– 4 domains applied to the occupational profile: Case of Mrs Cynthia Samuels

Domain Category	**Component/Subsection**	**Occupational profile in Mrs Samuels' Case**
Occupations Everyday activities that are meaningful and purposeful.	Activities of Daily Living (ADLs)	Requires assistance from carers for washing, dressing, and medication management.
	Instrumental ADLs (IADLs)	Participates in grocery shopping with niece Christine 1x week; uses home helper trolley for snack preparation and moving items. Christine manages the bills.
	Rest and Sleep	Uses an electric adjustable bed and Propad mattress; has experienced disrupted sleep due to early-morning wandering.
	Education	Not currently engaged in formal education activities.
	Work	Retired nurse; no current work-related occupations.
	Play	Limited engagement mentioned; previously had active social life.

	Leisure	Enjoys reading the Bible; spends leisure time in riser recliner chair in lounge.
	Social participation	Was active in local church; now socially isolated due to health. Receives visits from niece and son occasionally.
Contexts Conditions surrounding the client which influence engagement in occupations.	Environmental context: Physical	Lives in a 3-bedroom bungalow with concrete paths and step access; home adapted with grab rails, shower seat, and raised toilet.
	Environmental context: Social	Support network includes niece, son, and carers; niece visits weekly, son visits every six weeks.
	Environmental context: Cultural	Maintains connection to Caribbean roots; met husband through cultural venues; church is culturally significant.
	Environmental context : Temporal	Daily routines supported by scheduled carer visits; health decline has altered past activity patterns.
	Environmental context : Virtual	Exploring telecare options (Just Checking, Alexa, NRS package); pendant alarm already in use.
	Personal context	89-year-old Antiguan-born widow; Educated retired nurse; values independence and home ownership; concerned about protecting savings and estate.

Performance Patterns Patterns used in the process of engaging in occupations or activities.	Habits	Formerly independent; now relies on carers and niece. Night wandering has disrupted previous routines- led to recent fall and hospitalization.
	Routines	Structured around carer visits 3x day, and weekly niece support; minimal community engagement now. No longer leaves the house but for food shopping with niece. Recent referral to memory clinic as outpatient.
	Roles	Retired professional, mother, aunt; role as a financial supporter in family has created tension with son and niece.
	Rituals	Reading the Bible; reflects on cultural traditions and family legacy.
Performance Skills Goal-directed actions that are observable as small units of performance.	Motor Skills	Uses mobility aids (trolley, grab rails); experienced fall; risk of instability and decreased strength.
	Process Skills	Can perform basic tasks with support; needs cueing and equipment for safety and efficiency. Functional cognition and emotional status have not been formally assessed. Uncharacteristic late-night wandering justifies attention to these areas.
	Social Interaction Skills	Limited social interactions; some strain in family relationships; prefers familiar routines and people.

Client Factors Specific capacities, characteristics, or beliefs that influence performance.	Values, Beliefs, and Spirituality	Values independence, dignity, cultural identity, and her Christian faith.
	Body Functions	Diabetes, mild stroke, memory decline, recent fall and UTI, and dehydration; requires ongoing monitoring and care.
	Body Structures	Uses adaptive equipment due to impairments affecting mobility, continence, and physical resilience.

For you to consider

As you examine the occupational profile of Mrs Samuels (Table 17.2), how does your clinical reasoning guide you in determining Mrs Samuels' occupational priorities and unmet occupational needs ? What are her resources and what are the barriers to meeting her occupational priorities? How can occupational therapy intervene? Compare this with the approach informed by the CHIME framework (Table 17.1) in the chapter.

The CARES pathway applied to the case study of Mrs Samuels

Table 17.3 shows the CARES taxonomy and the ways that using everyday technologies could be applied in the case study of Mrs Samuels below.

Table 17.3 CARES pathway for improved caregiving

CARES pathway to improve care	**Example technology**	**Potential outcome**
Cognitive offloading	• Christine can use a voice command. "Reminder me to look at Auntie Cynthia's shoes at 10am on Saturday when I visit". Push notification at that time.	Lower care burden for Christine

Automated task management	• Manage bills on autopay • Automate grocery delivery	Frees up time from routine caregiving tasks to visiting with choices of what to do
Remote monitoring and intervention	• Install *Just Checking* and monitor reports for movement to the toilet. • Bed sensors • Door sensors	Long-distance monitoring for carers and family; peace of mind for family
Emotional/social support	• Carers leave Auntie Cynthia set up with an online dementia-friendly activity via tablet before they leave (seated exercise, Bible group, Caribbean music sing-along, etc).	Greater range of activities and social engagement for Auntie Cynthia.
Symptom treatment	• Set up *Alexa* in the living room programmed to help Auntie Cynthia's keep a routine: e.g. announce the time, play favourite church music at a set time daily; remind her to get a drink.	Automate routines to help with orientation to time, and meaningfully fill her time

Adapted from Kiselca et al. (2024).

Occupational Gift

Occupational gift to the reader: Four Finger

Four Finger --- So easy to make and such fun to "challenge" your partner with. You may have heard of Five Finger, the amazingly sour little tropical fruit.

Source: Source: AGE Fotostock/Pixtal

It's also known as Star Fruit or Carambola. The same way it's called "Five Finger". In the Caribbean this little paper game is called Four Finger (not Five Fingers –- no S). The paper game is also known as "Fortune Teller" or "Chatterbox" in different regions of the world. It only takes four fingers to have hours of fun with friends once you have made a Four Finger.

Source: andrew0303/123RF

There will ultimately be 8 spaces for questions on the inside. Depending on what you write inside, you can use it to help start conversations or "tell fortunes". To really engage an elder with your Four Finger game, you can adapt it by writing in a "challenge" such as:

1. Describe the place where you lived as a young child.
2. Describe your favourite foods you eat at home.
3. Talk about how you knew you were becoming an adult.
4. How did you have fun when you were a child?
5. Describe your family growing up.
6. Describe what you wanted to be when you were a child.
7. What is the one thing that reminds you of your childhood?
8. Sing a golden oldie song that's your favourite.

Tip: You can start the first layer with just a colour to pick from. And the player spells out the colour while moving the Four Finger, e.g. B-l-u-e equals four moves. Then the player gets to select a number from the inside layer. That number is also spelled out, e.g. Five is f-i-v-e

which also equals four moves. At this point the player selects a random number for their question.

Find instructions and free templates online at: https://vintagetoysblog.wordpress.com/2013/02/25/paper-fortune-teller-free-printable-template/

References

Adelman, S., Blanchard, M., Rait, G., Leavey, G. and Livingston, G. (2011). Prevalence of dementia in African-Caribbean compared with UK-born White older people: two-stage cross-sectional study. *British Journal of Psychiatry*, 199(2): 119–125 https://doi.org/10.1192/bjp.bp.110.086405.

American Occupational Therapy Association. (2020). Occupational Therapy Practice Framework: domain and process, 4th edition, *American Journal of Occupational Therapy*, 74 (suppl. 2): 1–87. https://doi.org/10.5014/ajot.2020.74S2001.

European Union. (2019). Directive (EU) 2019/882 of the European Parliament and of the Council of 17 April 2019 on the accessibility requirements for products and services. *Official Journal of the European Union*, L151: 70–115. Available at: europa.eu (accessed: 11 June 2026).

Giebel, C., Hanna, K., Watson, J., Faulkner, T., O'Connell, L., Smith, S., et al. (2023). A systematic review on inequalities in accessing and using community-based social care in dementia. *International Psychogeriatrics*, 36(7): 540–563 https://doi.org/10.1017/S104161022300042X.

Jeon, Y.H., Krein, L., O'Connor, C.M.C., Mowszowski, L., Duffy, S., Seeher, K., et al. (2023). A systematic review of quality dementia clinical guidelines for the development of WHO's Package of Interventions for Rehabilitation. *The Gerontologist*, 63(9): 1536–1555 https://doi.org/10.1093/geront/ gnac105.

Kiselica, A.M., Hermann, G.E., Scullin, M.K. and Benge, J.F. (2024). Technology that CARES: Enhancing dementia care through everyday technologies, *Alzheimer's and Dementia*, 20(12): 8969–8978. https://doi.org/10.1002/alz.14192.

Medicines and Healthcare Products Regulatory Authority. (2025). Assistive technology: definition and safe use. Available at: https://www.gov.uk/government/publications/assistive-technology-definition-and-safe- use/assistive-technology-definition-and-safe-use (accessed: 21 March 2026).

Mukadam, N., Marston, L., Lewis, G., Mathur, R., Rait, G. and Livingston, G. (2023). Incidence, age at diagnosis and survival with dementia across ethnic groups in England: A longitudinal study using electronic health records, *Alzheimer's and Dementia*, 19(4): 1300–1317. https://doi.org/10.1002/ alz.12774.

Nichols, E., Steinmetz, J.D., Vollset, S.E., Fukutaki, K., Chalek, J., Abd-Allah, F., et al. (2022). Estimation of the global prevalence of dementia in 2019 and forecasted

Caribbean Perspectives on Occupational Therapy in the United Kingdom, 1st edition/Blaine Robin et al., published: 1st July 2026. © Open University Press.

prevalence in 2050: An analysis for the Global Burden of Disease Study 2019. *The Lancet Public Health*, 7(2): e105–25. https://doi. org/10.1016/S2468-2667(21)00249-8.

Pham, T., Khan, I., Mukadam, N., Glanfield, L., Natalwala, A., Mansour, H., Cooper, C. and Livingston, G. (2018). Trends in dementia diagnosis rates in UK ethnic groups: Analysis of UK primary care data. *Clinical Epidemiology*, 10: 989–997.

Remap. (2024). *About us: History*. Available at: https://remap.org.uk/about-us/history/ (accessed: 11 June 2026).

Roche, M., Higgs, P., Aworinde, J. and Cooper, C. (2021). A review of qualitative research of perception and experiences of dementia among adults from Black, African, and Caribbean backgrounds. *The Gerontologist*, 61(5): e195–e211.

Tuerk, R. and Sauer, J. (2015). Dementia in a Black and minority ethnic population: Characteristics of presentation to an inner London memory service, *BJPsych Bulletin*, 39(4): 162–166. https://doi. org/10.1192/pb.bp.114.047753.

Wittenberg, R., Hu, B., Barraza-Araiza, S. and Rehill, A. (2019). *Projections of Older People with Dementia and Costs oOf Dementia Care in the United Kingdom, 2019–2040*. London: Care Policy and Evaluation Centre, London School of Economics and Political Science.

World Federation of Occupational Therapy (WFOT). (2019). Occupational therapy and assistive technology. https://wfot.org/resources/occupational-therapy-and-assistive-technology (accessed: 10 August 2025).

World Health Organization (WHO). (2021). Global status report on the public health response to dementia. https://www.who.int/publications/i/item/9789240033245 (accessed: 21 March 2026).

World Health Organization (WHO). (2023). Package of interventions for rehabilitation, Module 3: Neurological conditions. https://www.who.int/publications/i/item/9789240071131 (accessed: 24 July 2025).