Chapter 1

An Introduction to Needs Assessment and Use of the Camberwell Assessment of Need for the Elderly

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1.1 Introduction

Needs assessment is a systematic approach to identifying the health and healthcare needs of a population that allows services to make changes to improve health service delivery.[1] Detecting unmet needs enables gaps in service provision to be recognised and for health policy to introduce changes that can reduce health inequalities and improve health outcomes.[2] Equally, identifying areas of met needs means that the effectiveness of service delivery can be evaluated. With the rising cost of healthcare, the use of needs assessment has risen in prominence as it can aid decision-making in the planning of resources.[3]

The world's population is ageing, and older age is associated with increased risk of co-morbidity, disability and frailty. As people age, their care needs tend to become more complex with increasing dependency on others, and they are more likely to require care.[4] It is therefore essential that their health needs are assessed and responded to in a more holistic way, which can help older people to live independently and achieve a good quality of life. Care, in essence, is a fulfilment of needs and includes requirements that are unique to each individual. It should be planned well ahead and before reaching a stage where it becomes impractical to meet the needs that are apparent. Currently, UK health and social care services are inadequately designed to meet the needs of older people with multiple and complex chronic health conditions.[5] In addition, publicly funded health and social care has become increasingly restricted to those with complex health or substantial and critical social care needs as services struggle to keep pace with the demands of the ageing population.[6] The United Nations issued a call for governments to design innovative policies and public services specifically targeted to older people that address housing, employment, healthcare, infrastructure and social protection.[7] Consequently, being able to reliably identify the integrated health, social and environmental needs of older people has become paramount. The ability to conduct comprehensive and effective needs assessment ensures that services can be adapted and organised to meet the identified needs of older populations.

1.2 Needs Assessment and Older People

At an individual level, assessment of needs should be comprehensive and tailored to a person's current and projected needs, taking into account patients' and carers' views.[8] The accurate and robust assessment of individual people's needs has been the focus of increasing discussion in clinical settings for older people with respect to an increasing ageing population. This debate arises from services negligence or the inability to meet older peoples' needs, which has resulted from age-discriminatory practices, failure to treat older people with dignity and respect, lack of best evidence-based clinical practice and allowing organisational structures to create barriers for receiving proper assessment of need and access to care.[4] Older people's needs and preferences must be carefully taken into consideration, and care plans should be designed to improve health outcomes and enhance the quality of their lives.

The inclusion of self-reported patient outcomes raises complex questions about accuracy, effectiveness and the experience for users. The ability to participate in needs assessments may be affected by the older person's physical and mental wellbeing, cognitive impairment and feelings of vulnerability, or the assessments may be burdensome to complete.[9] This can be countered by including older people's views in the development of scales with regard to format, relevance and mode of implementation.[10] While differences in the perceptions of needs may exist between older people and professionals, the person's subjective assessment should not be ignored because the

professional disagrees. What is important is that the older person's perception has been communicated successfully in terms of their needs and that the assessment leads to improvement in care.[9] More importantly, the inclusion of the older person's views may allow for the identification of unmet needs that otherwise may have been missed, so professional assessments alone may not be adequate to determine the need for care.

1.3 Camberwell Assessment of Need for the Elderly

The Camberwell Assessment of Need for the Elderly (CANE)[11] is an instrument designed for measuring the broad range of needs in older people. It is designed to be used across various clinical and social care settings and is based on the structural model of the Camberwell Assessment of Need.[12] In 2004, a single publication providing comprehensive information about the CANE was produced in direct response to the growing demand for validated needs assessment in the United Kingdom and internationally.[8] The publication, written by contributors from different countries, showed the CANE's adaptability in terms of being used in various settings and for being translated into other languages. It included a manual for its use that contained the final version of the CANE instrument.

Twenty years on from the CANE's development, it is now time to look again at how it has been used and its relevance for older people's health services around the world. This second edition of the *Camberwell Assessment of Needs for the Elderly (CANE)* will include an overview and new perspectives on how the CANE has been used to assess the needs of older people across a range of settings internationally. This first chapter provides an overview of the evidence base for how the CANE has been established internationally and the clinical contexts in which it has been implemented.

1.4 Structure of the CANE

The instrument 'Camberwell Assessment of Needs in Elderly' was developed and designed by using the Delphi consensus method to gather information about older people's needs and identify whether they are being met or not.[11] This process included consultation with academics, practitioners, carers and older people's patient groups. The CANE comprises 24 items; it additionally has two items to assess carer needs (see Table 1.1). The instrument offers a multidimensional approach, with the items being constructed around four domains that cover physical, psychological, social and environmental needs. The nature and severity of difficulty in each domain are explored, as are the level of help received and the perceived need for help. A multi-agency perspective is also provided, as the CANE seeks staff, patients' and carers' views about an individual's needs. The inclusion of self-assessment is important as it allows the concerns of the person to be identified, which influences the care planning process and promotes individualised care.[9] The CANE has been used to assess the health and social needs of older populations in many countries across the world, as it is proven to be a good assessment tool with good psychometric properties that accurately and reliably assesses older people's individual needs, both met and unmet, from different perspectives.

Table 1.1 Items Included in the Camberwell Assessment of Need for the Elderly

1. Accommodation
2. Looking after the home
3. Food
4. Self-care
5. Caring for someone else
6. Daytime activities
7. Memory
8. Eyesight/hearing
9. Mobility/falls
10. Continence
11. Physical health
12. Drugs
13. Psychotic symptoms
14. Psychological distress
15. Information (on condition and treatment)
16. Safety to self (deliberate self-harm)
17. Safety to self (inadvertent self-harm)
18. Safety to self (abuse/neglect)
19. Behaviour
20. Alcohol
21. Company
22. Intimate relationships
23. Money/budgeting
24. Benefits
A. Carers need for information
B. Carers psychological distress

1.5 International Use of the CANE

Since the publication of the first edition of the CANE book,[8] Martin Orrell, one of the editors, has maintained a database compiled of contacts requesting information about the tool or requesting permission to translate and use the CANE, either clinically or for service evaluation and research. Information from the CANE database shows requests to use the CANE in 33 countries worldwide (United Kingdom, United States, South America, Europe, Asia, South Africa and Middle East) and in 18 languages (English, Dutch, German, Polish, French, Spanish, Italian, Portuguese, Icelandic, Finnish, Norwegian, Turkish, Chinese, Japanese, Korean, Farsi, Hebrew and Hindi).

An internet search on needs assessment for older people found publications using translated versions of the CANE in 10 other languages (Dutch, German, Polish, Spanish, Portuguese, Norwegian, Arabic, Korean, Farsi and Thai), which have been used in research studies across 24 different countries (Australia, Brazil, Canada, Chile, China, Denmark, Finland, Germany, Netherlands, Iceland, Iran, Ireland, Italy, Korea, Lebanon, Malaysia, Norway, Poland, Portugal, Spain, Sweden, Thailand, United States and United Kingdom). Many of the studies were multisite studies (national or international) or studies that used adapted versions of the CANE.

1.6 Translations and Adaptations of the CANE

As the CANE has been translated into other languages, studies have been undertaken to test the validity and reliability of the translated versions. These studies have been undertaken across a diverse range of community and healthcare settings and applied to the general older population or specific patient groups, such as those with dementia or depression.

One of the first CANE translations was into the Spanish language, and this study was included as a chapter in the first CANE book.[13] Mateos et al.[14] undertook a further study to establish the validity of the Spanish version of the CANE. This study consisted of an epidemiological survey, where interviews were conducted in the homes of 800 older people by lay interviewers. The CANE was then self-completed by 365 older people and 66 carers. The CANE was found to be acceptable, easy to apply and have good concurrent validity compared with other instruments that measured psychiatric symptoms, dependence and carer burden. The Spanish version of the CANE has been used subsequently in Chile to effectively assess the met and unmet needs of a community sample of 166 people with dementia and their family carers.[15]

A further translation of the CANE to Portuguese was undertaken by Gonçalves-Pereira et al.[16] and piloted with 21 older people, most of whom had dementia and lived at home with a carer. The CANE was found to have good acceptability, although there were concerns about its practical application clinically. Subsequently, Fernandes et al.[17] conducted a cross-sectional multicenter study with 79 participants who used mental health services in Portugal and evaluated the reliability and validity of the Portuguese version of the CANE. The study concluded that the Portuguese version of the CANE tool had excellent validity and reliability, with robust results for ecological, face, content, criterion and construct validity as well as for reliability. The Portuguese version of the CANE was viewed as potentially being useful for research and practical use in old age mental health services. Sousa et al.[18] also used the Portuguese version of the CANE to assess the feasibility of using the instrument to measure the needs of a disadvantaged older population in Brazil. The study was conducted as part of the São Paulo Ageing and Health Study and included a sample of 32 older people using community health services. The CANE was found to have robust psychometric properties and was feasible and practical for use to measure the needs of older people with limited access to health and social care. However, it was observed that the CANE took longer to administer than in higher-income countries given that participants had little formal education.

Elsewhere in Europe, translated versions of the CANE have continued to show good psychometric properties. The validity and reliability of the Dutch version of the CANE[19] were assessed using a sample of 236 people with mild to severe dementia and 322 informal carers living in the community.[20] The study showed acceptable construct and criterion validity. Test-retest reliability showed moderate to good levels of agreement, which was better on domains where needs were explicit, such as deliberate self-harm, self-care, drugs and continence, but poorer in areas where problems were less well defined, such as the areas for information and intimate relationships. In Poland, Rymaszewska et al.[21] assessed the validity, reliability and feasibility of using the Polish short

version of the CANE. The sample included 70 older people receiving dialysis or rehabilitation, and the CANE was found to have good psychometric properties and acceptability for use within Polish healthcare. A study of the relevance and applicability of the German version of the CANE also was published in the first CANE book.[22] A further study to test the reliability of using the German version of the CANE was undertaken with 94 nursing home residents.[23] Psychometric testing showed acceptable levels of agreement, and the CANE was observed to be an effective instrument for assessing residents' needs. However, it was recommended that the short version of the CANE be used in nursing homes. Following on, a study was undertaken to assess the content validity of a modified version of the German CANE, in which the instrument was adapted for use within German healthcare settings.[24] The layout of the instrument was reformatted and additional instructions for its use added. Changes were made based on expert recommendations to the prompts used as examples for assessing needs, and extensions were added to existing domains to include dental health, disability, pain and delirium. The domain item 'alcohol' was amended to 'abuse and addiction', and a new section was added for falls. The revised German version of the CANE was perceived as being a more practical instrument with high content validity and increased applicability for use with the older population in Germany.

The CANE has also been translated into languages used in the Middle East. AliHabib et al.[25] assessed the feasibility, reliability and construct validity of the Arabic version of the CANE. It was used to investigate the post-war psychosocial needs and health of 322 older people living in South Lebanon. The Arabic version of the CANE was found to have good psychometric properties and acceptability within the predominantly Muslim population and was deemed to be an appropriate and useful tool for Middle Eastern community settings. Similarly, the Persian version of the CANE was used to assess the needs of 123 older people with mental health problems and their carers in Iran[26] and was also found to demonstrate good validity, reliability and acceptability within this population.

Additional translations have been undertaken in Asia, which also showed good psychometric properties. The Thai version of the CANE was used to effectively assess the needs of 330 older people living in the community.[27] Parks et al.[28] tested the Korean version of the CANE with 359 family carers of people with dementia. The CANE-K was well accepted and could accurately identify the needs of participants. It was seen as providing a useful basis for person-centred care planning and creating a care framework for people with dementia. In China, the content and methods for administering the CANE were used to inform the development of an interview guide to assess the healthcare, physical, security and financial, psychological, social and spiritual needs of older people.[29]

The English version of the CANE has also been used in Malaysia and India, where English is commonly used to bridge the diversity of spoken languages in healthcare. Ashokkumar et al.[30] identified the health and social care needs in a rural community sample of 305 older people in India. The commonest unmet needs were lack of age-appropriate accommodation, company and daytime activities, with difficulty in looking after the home and risk of abuse and neglect also being commonplace. Recommendations were made for a more targeted approach to identify at-risk older people living in rural communities and to provide services to reduce the burden of unmet need. The short version of the CANE was used to assess the needs of 110 care home residents with dementia in Malaysia.[31] The commonest unmet needs identified were for daytime activity, company and intimate relationships, with social isolation being the strongest predictor for unmet needs in this population.

1.7 Adaptations of the CANE

Iliffe et al.[32] developed a shorter needs assessment tool for use in routine primary care. Data from 544 CANE interviews undertaken with older people in primary care, day hospital and continuing care settings were analysed to identify and rank the commonest unmet needs. Following a process of consultation and consensus, five domains of unmet need were identified as priority areas to create the SPICE assessment tool.[33] The five areas were *S*enses (vision and hearing), *P*hysical ability (mobility and falls), *I*ncontinence, *C*ognition and *E*motional distress (depression and anxiety) (SPICE). The SPICE tool was subsequently translated into a Portuguese version[34] and used to assess the needs of 51 older people attending general practitioner (GP) practices in Portugal. The tool was found to be acceptable to both patients and GPs, but only a few GPs planned to use it further clinically because of time constraints.

Murray et al.[35] developed and tested a primary care–based model for stroke aftercare. The aim of the model was to meet the longer-term needs of people who have had a stroke. In developing the model, common problem areas related to physical, psychological, social and environmental aspects were mapped to items within the available needs assessments tools including the CANE, EASY-Care[36] and the Minimum Data Set for Home Care (MDS-HC).[37] The CANE was identified as providing the best selection of questions for the problem areas identified, but none fully matched the problem areas identified, so a selection of questions was used from the CANE and EASY-Care.[38] The needs assessment tools were considered administratively cumbersome, and there were concerns that they may be burdensome for patients to complete. However, the model was acceptable to the health and social care practitioners administering the tool and found to be useful for identifying unmet needs that informed the care planning process.

The Dutch version of the CANE was incorporated into the Geriatric Care Model[39] to assess the care needs of 1,147 frail older people in 35 primary care practices in the Netherlands.[40] The Geriatric Care Model consisted of multidimensional geriatric assessments undertaken every six months by practice nurses to identify care interventions and formulate care plans to improve health outcomes. However, evaluation of the Geriatric Care Model approach showed no significant benefits for improving the quality of life or health outcomes of the frail older population in comparison to those receiving usual care. The study posited that comprehensive care programmes may have little effect where high-quality healthcare services are already meeting the needs of the population.

1.8 Needs Assessment and Community Health

The availability of the CANE in several languages makes it a valuable tool for identifying and comparing the needs of older people globally. While the CANE instrument was designed primarily for use with older people with mental health needs, its application is not necessarily restricted to this population. As observed in the preceding section, different versions of the CANE were validated for use with older people across a range of specific public health and mental health settings, including care homes.

Research has been undertaken in several additional community-based studies to identify the met and unmet needs of the general older population or specific patient groups. Walters et al.[41] used the CANE to explore help-seeking behaviour in older people attending four London GP practices. More than three-quarters of the 55 patients and 15 carers assessed had not sought help for the unmet needs identified, which mostly related to physical, psychological and accommodation needs such as continence and mobility issues, depressive symptoms and the need for adaptations in the home. Barriers were perceived as being due to low motivation to seek help and low expectations of the help that was available. Similarly, Stein et al.[42] used the original German version of the CANE to assess the needs of older patients from GP practices in Germany and found that many had unmet needs. The mean age of the sample was 80 years, and the most commonly identified unmet needs reported were in the physical domain (for physical health, eyesight/hearing/communication, mobility/falls and continence) and the environmental domain (for looking after the home and food). The physical and environmental domains had the highest number of overall needs, whereas the highest number of unmet care needs were found in the psychosocial domain, particularly for company. It was concluded that more attention should be paid to the psychosocial needs of frail older adults. Likewise, in the Netherlands, the assessment of self-perceived met and unmet needs in a community sample of 1,137 frail older people found that the highest number of care needs were in the physical and environmental domains, which were mostly met.[43] The highest proportions of unmet needs were found in the psychosocial domain for company and daytime activities and were associated with age, dependency and frailty scores. An additional study undertaken in the Netherlands explored the self-perceived needs of 407 frail older people with joint pain and co-morbidity.[44] High numbers of needs were reported in the environmental and physical domains using the CANE, but most of these needs were met. Whereas fewer needs were reported in the psychological domain, living alone and perceptions of low social support were associated with more unmet needs for company and daytime activities.

A survey incorporating questions from the CANE was used to assess the needs of an older homeless population in Canada.[45] The survey was completed

by homeless shelter managers and identified increased prevalence of memory impairment, verbal aggression and alcohol abuse in older men and memory impairment, paranoia and depression in older women. Unmet needs were associated with memory difficulties, concurrent physical illness, restricted mobility and difficulty with self-care. The need for a more comprehensive approach to assessing and treating the homeless older population was advocated, with greater involvement being required from psychiatric services.

1.9 Needs Assessment and Mental Health

The CANE has also been used to specifically assess the mental health needs of older populations in primary, secondary and care home settings. Passos et al.[46] assessed the needs of 306 older people attending outpatient and inpatient mental health services in Portugal, which included people diagnosed with depression, dementia and schizophrenia. The most common unmet needs for patients were psychological distress, daytime activities and benefits, although there was disparity among staff, patient and carer ratings. People with dementia and those who were inpatients were found to have the greatest number of needs, whereas those with depression had the least. Other studies undertaken in Europe and Australia have found that people with dementia in community and care home settings have higher-rated needs across all the domains than those without dementia, and self-ratings tend to be lower than those of carers and staff.[47–51] Community samples of people with depression in Germany were also found to have higher numbers of rated unmet needs than those without.[52] The commonest unmet needs reported were for physical health, mobility/falls, company, psychological distress and daytime activities. Similarly, people with depression in the Netherlands rated unmet needs for daytime activities, intimate relationships, eyesight/hearing and company, and higher levels of unmet need were associated with higher levels of depression severity.[53] Care for people with depression is mainly provided in the psychological domain, and satisfaction is lowest for social care needs.[54] Patients with depression were also observed to score more unmet needs than staff and carers, which may be due to staff and carers' lack of awareness about patient's unmet need.[55]

The needs of older people diagnosed with severe mental illness (major depressive illness, schizophrenia and bipolar disorder) using adult and old age mental health services were assessed in the United Kingdom,[56] Netherlands,[57,58] Australia[59] and the United States.[60] The studies found generally good agreement between patients and staff for the number of needs reported, with needs reported in the psychological, physical and environmental domains being mostly met. This is mainly due to patients living within residential or supportive accommodation.[56] The highest number of unmet needs was consistently reported in the social domain for company and daytime activities and intimate relationships, which were linked to a lower quality of life and lack of social participation[58] or where the person was living alone.[60] It was noted that people with bipolar disorder reported a lower number of met and unmet needs than those with depression and schizophrenia.[58] Cummings and Klopf[61] found that although services provided care to meet the older person's need, for 70% of the US participants, this was not the right type of help for some needs, such as benefits and social contact, and identified the need for better integration with older people's services.

1.10 Conclusion

The CANE has been widely translated and validated for use in a variety of locations, including community, inpatient and care home setting. The versatility of the CANE instrument is evident in the breadth of studies in which it has been successfully applied to effectively assess the needs of older populations with a range of health needs. It provides a comprehensive and structured assessment that can be used by different health and social care professionals to consistently identify both the met and unmet needs of older people.

High numbers of unmet need continue to be identified within older people's populations that identify gaps in service provision. As health services adapt to meet the needs of a growing older population, it is important that future research evaluates the impact of these changes on older people's needs and health outcomes. Failure to meet the unmet needs of older people can result in poorer quality of life and ineffective use of resources and lead to a substantial increase in costs to health and social care services. This second edition of the *Camberwell Assessment of Needs for the Elderly (CANE)* will examine the needs of older people further and identify where areas of care can be improved. Most of the chapters focus on the needs of people living with dementia, and this reflects the global healthcare priority for research and needs assessment

in dementia.[62] This second edition provides a valuable addition to the expanding collection of international needs assessment research in older people.

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