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Urban versus rural older adults: occupational balance and quality of life comparison

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Abstract

Background Occupational balance is a crucial concept in occupational therapy and is recognized as a vital component of health and well-being. The residential status may have a significant impact on the occupational balance (OB) and quality of life (QoL) of older adults.

Methods A group of 107 older adults from the urban area (mean age: 69.80 ± 4.78 years), and 93 older adults from the rural area (mean age: 71.24 ± 6.79 years) were examined. OB of the participants was evaluated with the Occupational Balance Questionnaire 11-T (OBQ 11-T) The QoL of older adults assessed by the World Health Organization Quality of Life – OLD module (WHOQOL-OLD).

Results The median OBQ11-T total score was 21.00 (7.00) in the urban area group and 20.00 (5.00) in the rural area group. Older adults residing in urban areas had higher scores in the OBQ 11-T total score, Item 1 = "Having enough things to do during a regular week", Item 5 = "Have sufficient time for doing mandatory occupations", and Item 11 = "Satisfaction with time spent in rest, recovery, and sleep" ($p < .05$). This suggests that older adults in urban areas may perceive a better balance in their activities. In contrast, rural residents had lower scores on these items, potentially reflecting fewer perceived opportunities for engaging in activities in a balanced manner. Older adults daily residing in urban areas had higher scores in the WHOQOL-OLD total score, WHOQOL-OLD Sensory Abilities Subtest, and WHOQOL-OLD Autonomy Subtest ($p < .05$). These findings indicate a higher QoL, particularly in sensory and autonomy-related aspects, for older adults in urban areas. Conversely, rural residents reported lower scores on these QoL subscales, which may be attributed to different environmental and lifestyle factors associated with rural living.

Conclusions These findings indicated that residency status is an important variable for both OB and QoL of older adults. Occupational therapy interventions should consider special needs of older adults who live in rural areas.

Trial registration The clinical trial number is not applicable.

Keywords Elderly, Occupational Therapy, Quality of Life, Rural Residence, Urban Residence

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Introduction

The World Health Organization characterizes individuals as "older adult" if they are aged 65 years or older [1]. In Turkey, as in other parts of the world, the synergy of technological progress, enhancements in urban and rural living conditions, and advancements in geriatric care has contributed to a decrease in mortality rates and a rise in the older adult population [2]. As per the Turkish Statistical Institute, the older adult population rate was 10.2% in 2023. Projections indicate an increase, with anticipated rates of 12.9% in 2030, 16.3% in 2040, 22.6% in 2060, and 25.6% in 2080 for the older adult population in Turkey [2]. In occupational therapy, the resulting demographic shift underscores the need to prioritize considerations for the older adults.

Urban areas are defined as rapidly growing environments characterized by increasing population density and physical development. In contrast, rural areas are characterized by limited environments with decreased population density and physical development [3]. When examining old age in the context of urban and rural residency, several advantages and disadvantages emerge. In Turkey, older adults living in rural areas tend to experience higher levels of poverty compared to those in urban areas. The dissolution of extended families and the migration of children often leave rural elders socially isolated and lead them to continue working on their farms alone [4]. Rural areas generally offer fewer employment, education, and health care opportunities, and they lack robust support systems such as reliable transportation, social services, and community programs [5, 6]. In contrast, older adults living in urban areas benefit from greater access to leisure activities provided by local communities and free transportation [7].

Occupational therapists place significant importance on occupational balance (OB), as it directly correlates with the wellbeing and quality of life (QoL) of individuals [8]. OB refers to an individual's self-perceived sense of achieving the optimal equilibrium in their various activities, encompassing a suitable mix of different pursuits and maintaining a balance between mandatory and voluntary occupations [9]. It was shown that, several factors can cause disruption in OB such as responsibilities for caregiving [8, 10], epidemic conditions [11], and diseases [12]. However, as well as our knowledge, there is no study that evaluates the environmental effect on OB.

In the realm of occupational therapy, it's acknowledged that the environment and context are pivotal factors that can either support or hinder the effective engagement in activities and meaningful occupations [13]. Previous studies have indicated variations in the occupational participation of older adults residing in urban and rural areas [14, 15]. However, our perception of how the environment can impact the OB of older adults remains limited. Prior research pertaining to OB among the older adults primarily focuses on examining the impact of working conditions [16], the significance of role values [17], and the dynamics of the retirement process on OB [18]. OB, the frail equilibrium between various life activities, is a cornerstone of well-being. Disruption in this balance can lead to occupational imbalance, which poses a significant threat to older adults' QoL [8]. The concept of OB can be examined from three distinct perspectives: occupational areas, occupations with diverse characteristics, and temporal allocation [9]. From the perspective of occupational areas, an imbalance manifests when an older adult is unable to engage in a comprehensive range of occupations, such as self-care, work, and leisure. Each of these domains plays a critical role in maintaining health and QoL. Insufficient engagement in one or more of these areas can lead to adverse outcomes for older adults, including physical and mental health issues [19]. In relation to occupations with diverse characteristics, OB is disrupted when there is an overemphasis or deficiency in certain types of occupations. For instance, an older adult may excessively prioritize work-related activities at the expense of leisure or social engagements. This imbalance can precipitate stress, burnout, and diminish QoL. Conversely, an excessive focus on leisure or rest may impede an older adult's productivity and sense of accomplishment [20]. Finally, from the perspective of temporal allocation, OB is influenced by how an individual manages their time across various activities. An older adult may encounter difficulties in allocating adequate time for rest and recovery, resulting in fatigue or reduced efficiency in other life domains. Alternatively, ineffective time management may lead to an overcommitment to work-related tasks, thereby compromising personal or social activities and causing an imbalance that adversely impacts health and overall satisfaction [21]. In occupational therapy practice, it is imperative to intervene when an individual's OB is disrupted. Therapists collaborate with individuals to identify imbalances and implement strategies to restore balance. These interventions may involve modifying the environment, providing strategies for effective time management, or assisting individuals in prioritizing and engaging in a more balanced range of occupations. By addressing disruptions in OB, occupational therapists facilitate individuals' attainment of a better QoL and enhance their ability to participate meaningfully in daily activities [22].

There is a conflicting finding in the literature regarding the QoL of older adults residing in urban and rural areas. While some studies suggest that older people living in urban areas have better QoL [15, 23, 24], others suggest that older adults living in rural areas have better QoL

[25, 26]. Further research is needed to clarify the conflicting findings in the literature regarding the QoL levels for older people based on their residency and the variations in OB levels. Therefore, this study was conducted to make a comparison between the OB and QOL of older adults living in urban and rural areas.

Methods

The study protocol was approved by the local ethics committee. Prior to the study, all participants provided written informed consent. This cross-sectional study followed the Strengthening the Reporting of Observational Studies in Epidemiology Guidelines (STROBE).

Participants

The participants were recruited from Ankara, the capital city of Turkey, and its rural environs during the period spanning February to April 2024. The research team consisted of people with 20 years of experience in geriatrics, working both in urban centers and in rural areas, as well as many publications on occupational balance. In accordance with a priori analysis conducted utilizing the G Power 3.1.9.7 software, a sample size of 210 was deemed necessary, distributed as 105 participants in both rural and urban settings, based on a medium effect size (Cohen's d = 0.50), a power level of 0.95, and a significance threshold of 0.05. Anticipating potential data loss, we invited a total of 220 participants, evenly distributed with 110 individuals allocated to each group. In the rural setting, nine participants faced difficulties in understanding or responding to the questionnaire items, while in the urban setting, three participants experienced similar challenges. Additionally, in the rural context, five of the participants presented with physical disabilities, and three of them received support from assistive living facilities. Therefore, the study encompassed 107 individuals from urban locales and 93 from rural regions. Inclusion criteria to the study (a) being 65 years and older (b) able to communicate with Turkish (c) voluntarily participation to the study (d) not having a disability. Exclusion criteria to the study (a) participants who experienced difficulties in cooperation and encountered challenges in comprehending or responding to the questions, (b) participants with terminal illnesses or conditions (c) being in institutional care or receiving support from assistive living facilities.

The urban–rural categorization of participants was a key aspect of the study. The official data from the Turkish Statistical Institute used to define urban and rural areas. In this study, snowball sampling was employed to recruit participants, particularly in rural areas where identifying eligible individuals for the study could be challenging due to the geographical dispersion of the population. Snowball sampling is a non-probability technique that relies on initial participants to refer others who meet the study criteria. The sampling process began by identifying a small group of individuals who met the inclusion criteria. These initial participants were asked to refer other eligible individuals from their networks who might be interested in participating in the study. As these referrals were made, each new participant was also encouraged to recruit others, creating a "snowball" effect. This method proved especially beneficial in rural settings, where access to a large pool of potential participants was limited. By using snowball sampling, the study was able to tap into established social networks, thereby increasing the sample size and diversity of participants while ensuring that individuals who met the study criteria were included. Participants did not receive any monetary compensation for their participation in the study.

Instruments

Occupational balance questionnaire 11-T

The Occupational Balance Questionnaire 11 was developed by Håkansson et al. [18]. from the first version of the Occupational Balance Questionnaire, which had 13 items. The questionnaire aimed at evaluation of self-perceived OB. This tool focuses on individuals' subjective perceptions of the quantity and variety of their daily occupations, irrespective of the nature of those occupations. The OBQ 11 demonstrated sufficient reliability scores (Spearmans' rho = 0.92), and proper model fit values [27].

Günal et al. (2020) adapted the OBQ into Turkish, resulting in the OBQ11-T [20]. The validity and reliability analyses showed that the OBQ11-T presents a test–retest reliability coefficient of 0.922 and a Cronbach's alpha of 0.785 for the total score [28]. The questionnaire consists of 11 items scored on a four-point Likert scale, ranging from 0 = "strongly disagree" (low occupational balance) to 3 = "strongly agree" (high occupational balance). The OBQ11-T generates a total score by summing individual item scores, ranging from 0 to 33. Higher scores on the OBQ11-T indicate a greater degree of perceived OB.

World Health Organization Quality of Life – OLD module (WHOQOL-OLD)

The instrument was developed with the primary aim of assessing the QoL among older adults. Comprising 24 items, each rated on a 5-point Likert scale. A score of 1 corresponds to the lowest level of QoL, indicating very poor QoL, while a score of 5 represents the highest level, indicating excellent QoL. These items are categorized into six distinct facets. These facets are (1) sensory abilities, such as vision and hearing; (2) autonomy, including independence in daily activities; (3) past, present, and

future activities, referring to involvement in meaningful pursuits; (4) social participation, which encompasses engagement with others; (5) death and dying, addressing concerns about mortality; and (6) intimacy, centered on emotional closeness. Each facet encompasses four items, thus generating six separate facet scores range between 4 to 20 points, subsequently transformed into a standardized 0–100 scale through syntactic operations. These facet scores are then amalgamated with responses to the 24 items to compute an overall QoL score. Higher scores on the instrument indicate better perceived QoL. The reliability of the instrument was assessed via Cronbach's alpha coefficient, yielding a value of 0.89 [29]. Furthermore, a study conducted in Turkey in 2010 validated the psychometric properties of the Turkish version of the WHOQOL-OLD instrument, indicating an Intraclass Correlation Coefficient (ICC) value of 0.85. The Cronbach's alpha values for the facets of the WHOQOL-OLD scale range from 0.68 to 0.88, with values greater than 0.70 indicating acceptable internal consistency. Notably, the items, facets, and scoring methodology remain consistent with those of the original version [30].

Statistical analysis

The statistical software package IBM SPSS Statistics version 21.0 was employed for data analysis. Data were reported as mean ± standard deviation (normal distribution) or median and interquartile range (non-normal distribution). The chi-square test used for evaluation of group differences of categorical data. The normality of data distributions was assessed using the Kolmogorov–Smirnov test, which indicated a non-normal distribution for all variables except for age. Consequently, group comparisons were conducted using the Mann–Whitney U test, while an Independent Samples t-test was used for the age variable. Level of significance accepted as 0.05.

Results

The demographic characteristics of the groups are presented in Table 1. The urban and rural older adults exhibited similar characteristics regarding their demographic variables ($p > 0.05$). The mean age of older adults was 69.80 ± 4.78 years in the urban group and 71.24 ± 6.79 years in the rural group. The groups were comparable in terms of age ($p > 0.05$).

The median of OBQ11-T total score was 21.00 (7.00) in the urban area group, 20.00 (5.00) in the rural area group. There were statistically significant differences in OBQ11-T total score and Item 1 = "Having enough things to do during a regular week", Item 5 = "Have sufficient time for doing mandatory occupations", and Item 11 = "Satisfaction with time spent in rest, recovery, and sleep" between the groups, favoring older adults living in urban areas ($p < 0.05$). No statistically significant differences were observed in the scores of other items in the OBQ11-T across the urban and rural area groups ($p > 0.05$) (Table 2).

Table 1 Demographic Characteristics of Participants

	Urban ($n = 107$)		Rural ($n = 93$)		
	n	%	n	%	*p*
Gender					.693
Female	58	54.2	53	57.0	
Male	49	45.8	40	43.0	
Marital Status					.465
Single	23	21.5	19	21.5	
Married	84	78.5	73	78.5	
Education					.244
Primary School	40	37.4	42	45.2	
Secondary School	47	43.9	41	44.1	
Bachelor	20	18.7	10	10.8	
Employment					.414
Working	13	12.1	8	8.6	
Retired	94	87.9	85	91.4	
Income					.337
0–150 USD	38	35.5	32	34.4	
150–300 USD	23	21.5	28	30.1	
300USD-Higher	46	43.0	33	35.5	

The chi-square test was applied for group comparisons

The median WHOQOL-OLD total score was 69.79 (13.54) in the urban area group, 63.54 (12.50) in the rural area group. There were significant differences found in WHOQOL-OLD total score, WHOQOL-OLD Sensory Abilities Subtest, and WHOQOL-OLD Autonomy Subtest, between the groups, favoring older adults living in urban areas ($p < 0.05$). No statistically significant differences were found in the scores of other sub-headings in the WHOQOL-OLD between the urban and rural area groups ($p > 0.05$) (Table 3).

Discussion

In Turkey, the differences between urban and rural areas significantly impact the lives of older adults. Urban areas are characterized by rapidly growing populations, greater access to healthcare, and numerous leisure and social activities. In contrast, rural areas face challenges such as limited healthcare facilities, fewer employment opportunities, and a lower density of social and recreational activities. These environmental and social factors can influence the QoL and OB of older adults. Therefore, understanding the disparities between these settings is crucial for examining the well-being of elderly individuals in different living environments. Therefore, the present

Table 2 Comparisons of OBQ11-T Scores According to Residency

OBQ11-T	Urban Median (IQR)	Rural Median (IQR)	*p*
Item 1 = "Having enough things to do during a regular week"	2.00 (1.00)	2.00 (1.00)	**< .001**
Item 2 = "Balance between doing things for others/for oneself"	2.00 (1.00)	2.00 (2.00)	.686
Item 3 = "Time for doing things wanted"	2.00 (1.00)	2.00 (2.00)	.062
Item 4 = "Balance between work, home, family, leisure, rest, and sleep"	2.00 (1.00)	2.00 (1.00)	.065
Item 5 = "Have sufficient time for doing mandatory occupations"	2.00 (0.00)	2.00 (1.00)	**< .001**
Item 6 = "Balance between physical, social, mental, and restful occupations"	2.00 (0.00)	2.00 (1.50)	.634
Item 7 = "Satisfaction with how time is spent in everyday life"	2.00 (0.00)	2.00 (1.00)	.150
Item 8 = "Satisfaction with the number of activities during a regular week"	2.00 (1.00)	2.00 (1.00)	.467
Item 9 = "Balance between mandatory/voluntary occupations"	2.00 (1.00)	2.00 (1.00)	.659
Item 10 = "Balance between energy-giving/energy-taking activities"	2.00 (1.00)	2.00 (1.00)	.098
Item 11 = "Satisfaction with time spent in rest, recovery, and sleep"	2.00 (1.00)	2.00 (1.00)	**< .001**

OBQ11-T: Turkish Occupational Balance Questionnaire, Mann Whitney U Test was applied for group comparisons

Table 3 Comparisons of WHOQOL-OLD Scores According to Residency

WHOQOL-OLD	Urban Median (IQR)	Rural Median (IQR)	*p*
WHOQOL-OLD Sensory Abilities Subtest	81.25 (18.75)	68.75 (18.17)	**< .001**
WHOQOL-OLD Autonomy Subtest	68.75 (18.75)	56.25 (18.75)	**.002**
WHOQOL-OLD Past, Present, and Future Activities Subtest	68.75 (18.75)	62.50 (18.75)	.325
WHOQOL-OLD Social Participation Subtest	62.50 (25.00)	62.50 (15.63)	.259
WHOQOL-OLD Death and Dying Subtest	75.00 (31.25)	62.50 (37.50)	.065
WHOQOL-OLD Intimacy Subtest	75.00 (12.50)	68.75 (6.25)	.950
WHOQOL-OLD Total	69.79 (13.54)	63.54 (12.50)	**< .001**

WHOQOL-OLD World Health Organization Quality of Life–Old, Mann Whitney U Test was applied for group comparisons

study aimed to compare the OB and QoL of older adults based on their residency status, specifically focusing on urban and rural areas. The findings indicated that older adults who live in urban areas had a higher OB and QoL when compared with older adults who live in rural areas.

It is crucial to consider the OB and QoL of older adults as a human right from an occupational therapy perspective [31]. Although there is a greater need for occupational therapists in rural areas, they are disproportionately concentrated in urban areas. This imbalance limits access to services and negatively impacts the health outcomes of rural individuals and communities [32, 33]. In this context, it is crucial to ascertain whether there exists a disparity in the OB and QoL among the older adult residing in urban and rural areas. During the literature review, we failed to find studies that specifically explored these discrepancies. As far as we are aware, this study is the first to illustrate that older adults residing in rural areas experience a decline in OB. This finding underlines the potential importance of occupational therapy interventions for older individuals residing in rural areas.

Previous research has highlighted the impact of demographic characteristics on OB. Variables such as age, gender, education, and socioeconomic status can influence individuals' access to resources and opportunities, as well as determine their social roles. These factors, in turn, can affect their ability to achieve OB [34]. One of the study's strengths lies in the demographic similarity between groups with different residency statuses.

In Turkey, rural older adults tend to prioritize narrow productivity areas such as farming, caring for grandchildren, and household chores over leisure activities, unlike their urban counterparts [35, 36]. A study has concluded that rural areas lack leisure opportunities, while urban areas offer numerous leisure facilities and opportunities for leisure activities [37]. Consequently, their lower scores on the item 'Having enough things to do during a regular week' might appear unexpected, potentially stemming from their lesser engagement in leisure activities. Previous studies have underscored the significance of leisure activity participation for older adults [17]. However, given that our study did not specifically investigate the correlation between difficulties in participation and

specific areas, we refrain from making direct inferences on this matter. Moving forward, we suggest that future studies on OB should explore leisure activities in greater depth.

The limited employment, education, and healthcare opportunities in rural Turkey have led to a growing preference among the younger population for urban areas [4]. This trend is evidenced by the migration of the offspring of older adults from rural to urban settings in search of improved job prospects and educational facilities. Consequently, the traditional extended family structure, prevalent in rural areas, is being supplanted by the nuclear family model [38]. It is hypothesized that this decline in the rural youth population may exacerbate issues related to the ability of rural older adults to allocate sufficient time for mandatory occupations, as well as their satisfaction with time spent in rest, recovery, and sleep, highlighting a potential area of concern. In this context, it is important for occupational therapists in Turkey to advocate for improvements in rural socioeconomic conditions.

Several researchers have explored the differences in QoL levels among older adults living in urban and rural settings. While some studies indicate that older adults in urban areas have better QoL [15, 23, 24, 39], others suggest that those in rural areas have better QoL [25, 26]. Conversely, some research has not found significant differences in QoL levels based on residential status [40]. The current study's findings indicate that older adults in urban areas tend to experience higher QoL compared to their peers in rural settings. However, the conflicting results in the existing literature underscore the necessity for additional studies to clarify the impact of residential areas on older adults' QoL levels.

Sensory abilities include somatosensory, proprioceptive, vestibular, visual, auditory, olfactory and taste perception in humans. Our findings indicated that older adults living in rural areas experience more difficulties with sensory abilities than those living in urban areas. Older adults often experience losses in sensory perception due to aging [41]. Possible explanation for older adults who live in rural areas experience more difficulties when compared with their urban counterparts may be rural areas may lack of healthcare services compared to their urban areas [42]. This limited access can lead to unresolved sensory issues that affect individuals' sensory skills. Therefore, it may be important to strengthen health systems for individuals living in rural areas of Turkey.

Autonomy is the state of existing or acting separately from others, being respected, having control over one's own life, and making decisions freely. Our findings indicated that older adults living in rural areas have less autonomy compared to their urban counterparts. This may be attributed to the lack of support systems for individual autonomy in rural areas, such as transport, social services, and municipal services. These deficiencies may reduce older adults' autonomy [35]. In contrast, urban areas generally have more developed infrastructure, including public transport and accessibility features, which promotes older adults' autonomy [43]. However, it is important to note that our study did not analyze the impact of infrastructure and environmental factors on older adults' autonomy, so we cannot draw firm conclusions. We recommend that future studies examine the effects of environmental factors on older adults' autonomy.

Limitations

The study has several limitations that deserve commenting on. Firstly, the data was gathered from a single city and region within Turkey. Turkey comprises seven regions and 81 provinces, each with distinct characteristics. Consequently, the findings should be approached with caution. The second limitation is the absence of an assessment of disease severity and comorbidity. These variables may also impact OB and QoL. The third limitation is the cross-sectional design of this study limits the ability to capture temporal changes, as the findings reflect only a specific point in time. Therefore, future research employing a longitudinal design is recommended to better assess changes over time. Despite these limitations, this study is the first to demonstrate that older adults residing in urban areas exhibit higher levels of OB compared to their rural counterparts.

Strengths

To the best of our knowledge, this is the first study investigating OB differences across residential statuses. The findings of the current study illustrate that older adults residing in rural areas experience a decline in OB. This underscores the potential importance of occupational therapy interventions for older adults in these regions. Additionally, the study highlights that rural older adults report lower QoL. Therefore, emphasis should be placed on improving their access to healthcare and social services to support their overall well-being.

Future studies

Future qualitative studies investigating the occupational engagement and experiences of older adults in both rural and urban settings may yield valuable insights into the factors that contribute to OB and QoL. Furthermore, longitudinal studies examining the changes in OB and QoL over time would enhance our understanding of the trajectory of older adults' OB and QoL.

Conclusions

This study offers significant insights into OB and QoL among older adults residing in both urban and rural areas in Turkey. The findings indicate that older adults living in urban areas experience markedly higher levels of OB and QoL compared to their rural counterparts. These disparities may be attributed to the enhanced availability of resources, including healthcare services, leisure activities, and social support systems, which are more accessible in urban environments. Conversely, older adults in rural areas reported diminished levels of OB, potentially resulting from limited opportunities for diverse occupational engagement, a scarcity of recreational activities, and increased social isolation. This observation underscores the necessity of considering residency status as a crucial variable influencing both OB and QoL among older adults. The results of this study highlight the imperative for targeted occupational therapy interventions that specifically address the unique challenges encountered by older adults in rural contexts. Such interventions should prioritize improving access to healthcare, fostering social participation, and enhancing time management skills, with particular emphasis on facilitating engagement in leisure activities for older adults.

Key findings

- Occupational therapists should prioritize ensuring OB and QoL for rural older adults.
- Occupational therapists should collaborate with professionals such as urban and regional planners or policymakers to enhance o OB and QoL for older adults in rural areas.
- Occupational therapists should consider the potential impact of the environment on the OB intervention process for older adults.

Abbreviations

OB	Occupational balance
OBQ 11-T	Occupational balance questionnaire 11-T
QoL	Quality of life
WHOQOL-OLD	World health organization quality of life - OLD module

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Authors' contributions
We declare that all authors have contributed significantly to the conception, design, execution, or analysis of the research study described in the manuscript. Each author has reviewed the final version of the manuscript and approved it for publication. Specifically, [Author 1] contributed to writing, [Author 2] contributed to data analysis, [Author 3] contributed to data collection, and [Author 4] contributed to editing the manuscript. All authors have agreed to be accountable for all aspects of the work, ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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Data availability
Data are available from the corresponding author upon reasonable request.

Declarations

Ethics approval and consent to participate
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Consent for publication
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Competing interests
The authors declare no competing interests.

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