






# Adapting the Australian Environmental Assessment Tool—High Care (EAT-HC): Experiences and Practical Implications From Germany, Japan, and Singapore

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## Abstract

**Background:** Assessing the built environment in nursing homes is part of several established instruments. Measurements are primarily published in English, so there is a need for cross-cultural adaptation to be able to use them in other countries. This procedure should be carried out alongside translation guidelines to ensure successful adaptation not only for assessments that capture complex constructs, such as the built environment, but also for assessments to be applied in healthcare in general. **Objective:** This article presents different approaches to adopt the Australian Environmental Assessment Tool—High Care (EAT-HC) based on the World Health Organization (WHO) guidelines for instrument translation. The comparison of these processes should provide implications for further adaptations of the instrument. **Methods:** The adaptation processes carried out in Germany, Japan, and Singapore were compared using thematic analysis. Steps taken to achieve linguistic validation and to adopt the tool were analyzed qualitatively in the context of overarching needs for adjustment. **Results:** Every perspective adapted the WHO guidelines for their respective purposes of applying the

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EAT-HC. The order of steps varied, but elements to validate the results with the instruments' creators and to ensure validity were included in all three countries. For items that might be challenging, we detected possible reasons that might help future adaptors manage this process more efficiently.

**Conclusion:** The EAT-HC benefits from adaptation alongside the WHO guidelines in terms of enhancing the quality of translation and feasibility of application. Individual supplementary adaptation steps allow the identification of culture-specific needs for application in other countries.

### Keywords

instrument development, translation, cross-cultural adaptation, nursing, long-term care, environmental design, assessment

## Introduction

### *Translating Instruments for Application in Other Countries*

The measurement of care-related conditions such as the built or physical environment is not only based on the experience of planners and health-care professionals but is often assessed with systematic assessment instruments. These instruments serve to improve the objectivity of measurement independent of the person and situation collecting the information and thus contribute to improving conditions in healthcare.

Most established assessment instruments are available in English and need to be translated for application in other countries. To achieve equivalence in terms of content and constructs, considerable efforts must be applied to the translation, linguistic validation, and cross-cultural adaptation of instruments (Brislin, 1970). A gold standard for this procedure does not exist for instruments in nursing in general. Although guidelines have been published for certain types of healthcare instruments such as the Professional Society for Health Economics and Outcomes Research guideline for Patient-Reported Outcomes (Wild et al., 2005), no uniform recommendation exists for proceeding with environmental assessments. In a review of 47 articles on the adaptation of assessment instruments in nursing, Maneesriwongul and Dixon (2004) identified several categories that classified the processes: (1) forward-only translation, (2) forward-only translation with testing, (3) back-translation, (4) back-translation with a monolingual test, (5) back-translation with a bilingual test, and

(6) back-translation with both monolingual and bilingual tests. The results of the article indicated that an accurate adaptation process improves congruence between the original and target versions (Maneesriwongul & Dixon, 2004). Kalfoss (2019) concurred by highlighting the relevance of careful planning and establishing methodological approaches for achieving validity and reliability in the concept to be translated.

To contribute to this essential methodological review of tool adaptation, we reflect on our processes and experiences in translating an environmental assessment—the Environmental Assessment Tool—High Care (EAT-HC)—in this article. We compare the methods applied for linguistic validation and cross-cultural adaptation in Germany, Japan, and Singapore. We aim to provide recommendations for adapting the tool in other countries.

### *The Impact of the Built Environment on People Living With Dementia*

In recent decades, the built environment has gained increasing importance in dementia-specific long-term care. The first specialized care environments, confused and disturbed elderly units in Australia, were described in the late 1980s (Fleming & Bowles, 1987). Since the 1990s, the topic has received increasing attention in healthcare research and residential long-term care (Chaudhury et al., 2018). However, the critical role of the built environment can be traced back to the 1970s. In his ecology and aging theory, Lawton (1973) posited for the first time the reciprocal interaction of aging people and their environment in maintaining a balance between

them. The more a person's capability declines, the more he or she needs a supportive environment to be able to adopt to it (Lawton & Nahemow, 1973). A supportive environment comprises of both social and built environment. Since people with dementia experience increased sensitivity to environmental stimuli and cues, a built environment that is adequate and attuned to their cognitive capabilities is essential (Chaudhury et al., 2018). This begins with the benefits of a small living unit size (Sloane et al., 1998; Verbeek et al., 2010) and continues with a straight, circular layout of the hallways (Marquardt & Schmieg, 2009).

Furthermore, the relevance of biographic elements and a familiar atmosphere of the living unit as well as of the common areas in a facility and its outdoor spaces are consistent with the principles of dementia-specific design (Fleming & Purandare, 2010). These factors represent just an initial impression of the extensive knowledge about dementia-specific design in residential long-term care facilities. In the past few years, guidelines for planners and designers as well as assessment tools for healthcare professionals were published to disseminate this knowledge in research and practice.

### ***The Environmental Assessment Tool—High Care***

The Environmental Assessment Tool—High Care (EAT-HC) was developed by Fleming and Bennett, based on the initial Environmental Assessment Tool, for residents with moderate and severe cognitive and physical impairments (Fleming & Bennett, 2015). Using a literature review for the theoretical framework (Fleming & Purandare, 2010), the instrument is built from the practice experience of its creators, reflecting 10 *key design principles*: (1) unobtrusively reduce risks, (2) provide a human scale, (3) allow people to see and be seen, (4/5) manage levels of stimulation, (6) support movement and engagement, (7) create a familiar place, (8/9) provide a variety of places to be alone or with others, and (10) design in response to vision for a way of life (Fleming & Bennett, 2017). In its original Australian version, the EAT-HC contains 77 items for

evaluation by researchers collecting data in a nursing home and the multiprofessional team working in the facility. The psychometric properties of the instrument have shown satisfactory results (Elf et al., 2017). To evaluate the concurrent validity, a Pearson correlation between the overall score of the EAT-HC, the Therapeutic Environment Screening Survey for Nursing Homes (0.72), and the Special Care Unit Environmental Quality Scale (0.34) was calculated. Cronbach's  $\alpha$  per subscale varied in internal consistency between .57 and .88 (Fleming & Bennett, 2015).

### ***Motivations for Translating the EAT-HC***

Before giving an overview of the different motivations for adapting the EAT-HC, we summarize essential similarities and differences in population characteristics and dementia-specific long-term care between source and target countries. The nations the EAT-HC was translated for differ from Australia not only in terms of their surface area and population density but also in terms of sharing similar conditions and challenges in providing residential long-term care for people with dementia. For population density, Australia has 3, Germany 240, Japan 347, and Singapore 8358 people per km<sup>2</sup> (Worldometers, 2021). Long-term care in Germany and Japan is funded publicly, and they are the Organization for Economic Co-Operation and Development (OECD) members with the highest total public expenditures. In 2017, Germany invested US\$40,000 million, and Japan invested US\$45,000 million for their respective national long-term care insurance (OECD, 2020). In addition, both countries have one of the highest population age average in the world (mean average of 45.9 and 45.5, respectively). Singapore's population is also aging (median age = 38.1), resulting in an increase in age-related dementia (Subramaniam et al., 2015; WorldData.info, 2021). The following sections describe the different aging and long-term care factors for EAT-HC adaptation in Germany, Japan, and Singapore.

**Germany.** Of the 83.1 million German citizens, 28.9% are 60 years of age and older, and the trend is upward (Statistisches Bundesamt, 2021). This

aging society affects the growing number of people with dementia, which is expected to rise from the current 1.6 million to 2.4–2.8 million by 2050 (Alzheimer Europe, 2020). The majority of residents living with dementia are cared for in integrative living units together with noncognitive impaired residents. It is estimated that only 20%–30% of the living units in the 14,000 German nursing homes offer care in dementia special care units (Schäufele et al., 2013). These special care environments are the only such facilities secured and segregated by the concept and spatial layout. There is no instrument available to specifically assess the adequacy of the built environment for people with dementia in various diverse living concepts in German nursing homes. A valid instrument would be crucial (1) for research to integrate the built environment as a contextual factor into evaluating the implementation of complex care interventions, such as case conferences or actions on sleep improvement, and (2) for long-term care practitioners to obtain a systematic overview of the environment of their living units to initiate improvements for rebuilding. The adaptation of the EAT-HC aimed to provide a systematic tool that can be applied by researchers and practitioners in long-term care and is consistent with German law regarding accommodating residents with dementia (Fahsold et al., 2022).

**Japan.** Japan has the highest aging population globally, with 36 million (28.7%) of the total population aged 65 years and older. To ensure a better quality of life for the aged, long-term care facilities in Japan have gradually shifted to small-scale living facilities. To assess the facility environment, the Physical Environment Assessment Protocol (PEAP) Japan Version 3 instrument has already been adapted for the national setting (Kodama Research Laboratory, 2005). However, difficulties exist regarding PEAP usability in small-scale living units considering that (1) PEAP evaluators need professional skills to use the tool and (2) PEAP is not intended for small-scale living facilities or for residents with less mobility, although approximately 40% of residents in small-scale living facilities are over 90 years old, and more than 95% have some

degree of dementia (Ministry of Health Labor and Welfare, 2017). Furthermore, there is no appropriate environmental assessment instrument available to evaluate small-scale living facilities to enhance residents' quality of life. The EAT-HC has good prerequisites in the selection of an appropriate instrument for adaptation to this setting as it is easy for the care staff to use in their facilities, designed to assess smaller scale living homes, and focused on residents with more advanced levels of dementia (Fleming & Bennett, 2017; Sun & Fleming, 2018).

**Singapore.** In a population of 5.7 million, Singapore has 614,400 (11%) adults aged 65 years and older and a dementia prevalence rate of 10% (Government of Singapore, 2021a; Subramaniam et al., 2015). However, despite the growing aging population and number of people living with dementia, there are only 16,221 nursing home beds available in the country (Government of Singapore, 2021b). In addition, the designs of nursing homes in Singapore were described as pathogenic, restrictive, and lacking in meaningful engagement (Sun, 2020a; Wee et al., 2015). Recognizing the challenges brought about by a pathogenic environment, national guidelines for long-term care providers in designing nursing homes for people living with dementia were published (Dementia Nursing Home Design and Resource Panel, 2016). This publication enabled a growing awareness of dementia-enabling environments, but a gap remains. There were no tested and culturally sensitive means of evaluating the design of long-term care facilities for people living with dementia (Sun, 2020b). A scoping review by Sun and Fleming (2018) found that the EAT-HC may prove to be appropriate for adaptation to the Singaporean population. The evidence led to further investigation and the development of a validated, reliable, and culturally sensitive Singaporean version of the EAT-HC known as the Singapore Environmental Assessment Tool (SEAT; Agency for Integrated Care, 2021; Sun & Fleming, 2021).

## Aim

This article has two aims: (1) to discuss our experience in the process of translation, linguistic

validation, and cross-cultural adaptation and (2) to identify the overarching needs regarding the adaptation of the EAT-HC.

## Method

To compare the adaptation processes of the EAT-HC to Germany, Japan, and Singapore, we aligned our procedure using thematic analysis (Creswell, 2013). This approach enables researchers to discuss their different methods systematically, acts as a kind of *translator* for qualitative and quantitative methods, and provides a flexible approach suitable for rarely reported comparisons such as EAT-HC adaptations (Boyatzis, 1998; Braun & Clarke, 2006). First, all available data concerning the three adaptation processes were collected (Nowell et al., 2017), including interview transcripts, documentation of adaptation processes, and written discussion notes (e.g., field notes) from the individual researcher groups. Interview transcripts from Germany and Japan were only available in the respective target languages. Their information was presented verbally in peer debriefing (between AF, SB, TD, and JS) and documented in writing for analysis. The first author initially coded the data deductively according to the various steps of the adaptation process as a category system to identify overarching similarities and culture-specific differences in adaptation. Afterward, the results were discussed among the researchers from the three nations to identify themes. Then, we evaluated the identified themes (e.g., language challenges, cultural differences) with respect to the solutions we found during the adaptation process. Recommendations for further adaptations of the EAT-HC were derived from this. The analysis was carried out using MAXQDA 2020 (VERBI Software, 2019).

## Ethical Considerations

Because no new empirical data was collected for this article, no approval by an ethics committee was necessary. Ethical clearances were granted for the adaptation of the EAT-HC in the individual countries (Germany: ethical approval from Germany Society of Nursing—Number 18-005;

Japan: Institutional Review Board of San Francisco State University, CA, USA—Number 2019-012; and Singapore: ethics approval from the University of Wollongong, Human Research Ethics Committee—application 2016/122).

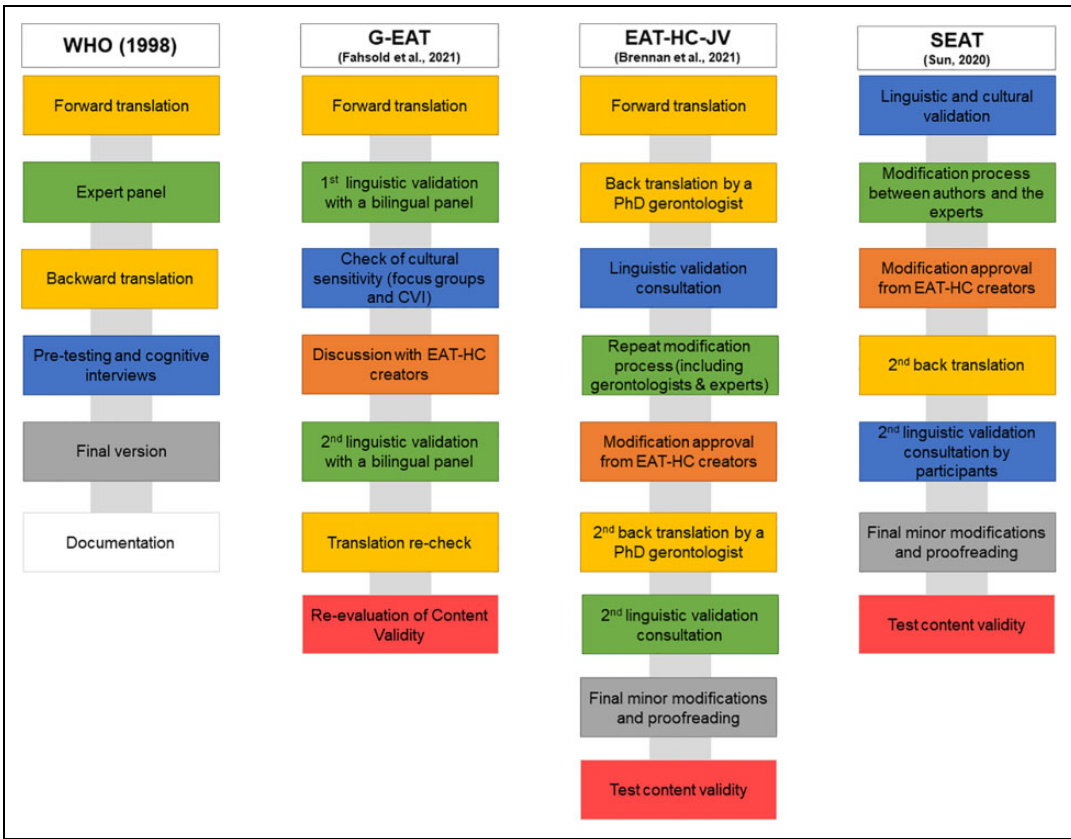
## Results

By comparing the adaptation of the EAT-HC for Germany, Japan, and Singapore, overarching experiences and practical implications were identified for the following areas.

### *Processes of Instrument Adaptation*

The adaptation of the three EAT-HC versions was based on the World Health Organization (WHO) guidelines of 1998, a multistep process that involves potential users of the instrument in the target language as part of group processes (Figure 1). These recommendations were utilized due to robust research that supported the process of application to many populations globally. The structured but flexible process has been applied in several previous studies (e.g., Kalfoss, 2019; Younan et al., 2019). Initially, the method was applied to adopt the EAT-HC for Singapore. The research groups from Germany and Japan also used the WHO guidelines for their adaptation plans. The WHO bases its recommendations on the translation approach for a self-reporting quality of life instrument (WHO Division of Mental Health, 1998). All three research groups (representing Germany, Japan, and Singapore) modified the recommended process for their respective target country and languages.

To involve the tool's future user group, environmental design experts and experienced long-term care practitioners were consulted for EAT-HC adaptation. They stand for the two possible groups of EAT-HC future users (i.e., experts in planning, researchers, and healthcare practitioners). Some of the six steps of the WHO guidelines (see Figure 1) were divided, and their wording was modified to report more specifics. In addition, all authors extended the translation process by two steps: (1) consulting with the creators of the EAT-HC and (2) evaluating the content validity empirically. The consultation



**Figure 1.** Overview of adapted World Health Organization guideline steps in the EAT-HC translation processes. Color coding: yellow = translation; green = linguistic validation; blue = cultural adaptation; orange = collaboration with EAT-HC developers; red = validity testing; gray = reporting.

included whether the instrument was applicable in the target countries, considering geographical and social conditions. Another reason was to clarify possible ambiguities regarding the content of the EAT-HC and to ensure that the theoretical construct—the key design principles—was translated appropriately. The evaluation of the content validity of the instrument was carried out in advance as a criterion for achieving reliability (Aiken, 1980; Figure 1). A comparison of the test results of each instrument version is reported elsewhere (Brennan et al., 2022). Detailed explanations of the individual steps are provided in the original studies (Brennan et al., 2021; Fahsold et al., 2022; Sun & Fleming, 2021). All steps followed the superior goals of (1) translation, (2) linguistic validation, and (3) cross-cultural adaptation.

### Translation Into the Target Languages

The German and Japanese research teams started with the forward translation of the instrument. Translations were performed by experts in gerontology/environmental design and nursing rather than by professional translators. An additional step in the Japanese translation included the adjustment of specific terms used in the Australian language to American-English (e.g., lounge room = living room; ensuite = bathroom) prior to translating. The German and Japanese versions kept politeness and respect with consideration of target cultural aspects during the forward translation process. Plain languages were also applied while balancing items of EAT-HC underlying ideas. As expected, some of the future users, such as administrators of long-term care facilities,

were not familiar with some environmental terms. The Singaporean version required no forward translation, as English serves as the national language.

### *Linguistic Validation*

All versions subsequently received one or more linguistic validation steps involving experts from several fields in practice. All in-country experts were native speakers of the target language and resided in the target countries (Wild et al., 2005). Japan and Singapore also integrated architects and residential environment planners. In Germany, nursing scientists were involved in meeting the perspective of the heterogeneous sample of potential instrument users. Similarly, participant recruitment occurred through the professional network of the respective research teams. While the experts in Japan ( $n = 4$ ) were involved individually in the adaptation process at various points (e.g., verification and agreement on wording, ensuring cross-cultural and language adaptation), focus group interviews took place in Singapore ( $n = 150$  experts in 23 groups) and Germany ( $n = 24$  in one bilingual panel and four focus groups). In Singapore, readability/usability played a central role; in Germany, comprehension of the content of the translated items formed the focus.

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### *Overarching Needs of Cross-Cultural Adaptation*

The overarching needs for cross-cultural adaptation to the German, Japanese, or Singaporean settings varied widely and should provide an overview of aspects to consider when adapting the EAT-HC.

**Challenges Through “Hard-to-Adapt” Items.** The majority of overarching needs for cross-cultural adaptation emerged for particular EAT-HC items. For instance, Japanese experts argued that for

“the portion of visual access to commonly used spaces” (Items 3.1–3.3), the answer depends on the location from which a rater assessed the question. During the Singapore Environmental Audit Tool (SEAT) adaptation, healthcare practitioners expressed uncertainty regarding the amount of visual access that would be appropriate. Experts from Germany commented that visual access might not necessarily be worthwhile for all residents, as it could trigger agitation in some instances. The concept “contrast” also had confused meaning in some items (e.g., Item 5.9, “Do the toilet seats contrast with the background?”). In the EAT-HC-Japanese version (JV), it was found that the potential users interpreted contrast to refer to whether there was a color difference but would not concentrate on poor contrast due to similar colors. In Singapore, it was asked at which point colors start to contrast, and in Germany, how extensive the contrast must be to be identified as such.

**Deviated Understanding of the Key Design Principles.** Regarding the key design principle “create a familiar place”, participants in two countries commented on its difficult-to-assess aspect. In Japan, some facilities are fully furnished, leaving no room for any personal furniture, and familiarity depends on the individual background. In Singapore, participants requested a nursing home environment to reflect the design and layout of the common Housing Development Board flats instead of a hospital-like design. With the current hospital-like design, residents identified themselves as patients, believing that they are in an acute care facility or hospital and expecting to be discharged at some point and return home. The hospital environment alludes to residents envisioning a short-term hospital stay. With the belief that they are residing in acute care or hospital facilities, they perceive that they would only receive clinical care and not psychosocial interventions. In Germany, participants pointed out that familiarity is a person-centered concept that should not be assessed across residents in a living unit.

**Varying Conditions in the Field of Residential Long-Term Care.** In addition to the adaptation needs related to the instrument, we identified

**Table 1.** Overlapping Wording Modification in the EAT-HC Adapted Versions Due to Cultural Differences.

Item	Original Version	Modification in	Modification Into	Reasons
1.1	Can people who live in the unit be prevented from leaving the garden/ outside area by getting over or under the perimeter?	G-EAT EAT-HC-JV	Omitted “under”	No ranch style fence in Germany and Japan
5.16	Outside, are a variety of materials and finishes used to create an interesting and varied environment for a person with dementia and help them know where they are (e.g. brick, timber stone, grass)?	G-EAT EAT-HC-JV	Wood	Not common
8.3	How many different characters are there within the unit (e.g., cosy lounge, TV room, sunroom)?	G-EAT EAT-HC-JV SEAT	Omitted “sunroom”	No sunrooms in Singapore, Germany, and Japan
Several items	Lounge room	EAT-HC-JV SEAT	Living room	Not a common term

Note. G-EAT = German Environmental Audit Tool; SEAT = Singapore Environmental Audit Tool; EAT-HC-JV = Japanese version.

cross-cultural variations in the underlying conditions for assessment with the EAT-HC. We first outline the living units, and small diversions in this step are due to different geographical conditions between Australia and the three nations. For example, outside areas are not always on the same level as the living unit since most nursing homes in Japan are located in multistory buildings and 80% of Singaporean residents live in public housing that is vertical. The elevator is essential for residents to access the outside area independently. In addition, long-term care practitioners in all three settings who perform assessment using the EAT-HC would need training to better understand the key design principles of the tool. For example, some items’ goals were misunderstood, which led to a misconception of the instrument’s underlying idea (e.g., Item 3.6/ 3.7: “Can a toilet be seen from the lounge room/ dining room?”). Experts wished to provide residents with a better view, although the purpose of these items was to provide good visual access while maintaining independence.

*Particularities of the Australian-English language.* A few adaptations relate to different usages of terms in Australian-English as well as in the three target languages (see Table 1). Here, other synonyms

were found to describe the term to potential users or the terms were removed since they contained no cultural equivalent in the target nation. To ensure that the new terminology still covered the meaning of the item, all research teams consulted with the EAT-HC creators.

*Instruments’ Features in the Target Countries*

Through the presented adaptations steps, three versions of the EAT-HC and additional materials evolved, which overlapped or differed from the Australian original according to the requirements of the target country (see Table 2).

Currently, the Japanese version (EAT-HC-JV) is a direct translation of the original instrument, so the denomination of this version remains close to the original instrument. Meanwhile, national contexts are incorporated in the German Environmental Audit Tool (G-EAT) and the Singaporean Environmental Audit Tool (SEAT). All three versions kept the 77 items of the EAT-HC after the adaptation process. We expected that items would be excluded due to cross-cultural adaptation; however, their inclusion may provide beneficial areas for future research (Ljungberg et al., 2015).

**Table 2.** Instruments’ Features in the Target Countries.

Feature	G-EAT	EAT-HC-JV	SEAT
Number of items	(74) <sup>a</sup> 77	77	81
Deleted items	(3) <sup>a</sup> 0	0	0
New items	0	0	4
Subscales	Same as original EAT-HC	Same as original EAT-HC	Same as original EAT-HC
Additional material provided	Handbook planned, but not published yet	none	User guide

<sup>a</sup>For the G-EAT, a version with 74 items for nonsecure living unit and 77 item for secure living units was adapted.

Four new items covering the topics palliative care, spirituality, and technology extended the SEAT. For the G-EAT, three items from the key design principle “Unobtrusively reduce risks” are excluded for usual nonsecure living units since they are inapplicable by law to this setting. The EAT-HC-JV is in the process of adapting the cross-cultural aspect of the instrument. Feedback from experts during linguistic validation and cross-cultural adaptation indicated a need for further information in all three countries to enable different target groups (e.g., healthcare practitioners, environmental designers, researchers) to use the instrument. For this reason, a user guide based on the EAT-HC handbook (Fleming & Bennett, 2017) was developed to supplement the SEAT. A similar document is planned for the G-EAT and EAT-HC-JV.

Discussion

The comparison of the adaptation processes of the EAT-HC in three countries and their identified overarching need for cross-cultural adjustment provide a basis for further adaptations of the instrument to increase its feasibility in other countries.

Benefits of Adapting Alongside a Translation Guideline

Each of the three research teams used the WHO (1998) guidelines for the adaptation and added additional steps as deemed necessary for the specific goal of adapting the EAT-HC (see Figure 1). This allowed each team to address the heterogeneous group of future users with different

backgrounds. While the experts in the linguistic validation helped achieve semantic equivalence through their review, the perspective of healthcare practitioners showed some conceptual content of the EAT-HC that could not be understood without further information. Hoben et al. (2014) and Stacke et al. (2021) confirmed this result. The authors point out that a large portion of care in Germany—and in Japan and Singapore—is provided by healthcare aids and that a lack of modification to the level of knowledge of all possible users is necessary to avoid negating validity.

In addition, if all adaptations of a specific instrument follow the same methods—as we did with the WHO guidelines—this may generate comparable instrument versions. Procedures to enhance linguistic validation and cross-cultural adaptation can be compared to benefit future adaptation of the EAT-HC. The theoretical construct should be adhered to as much as possible (Maneesriwongul and Dixon, 2004). This is particularly helpful with construct such as the built environment, which leave a broad scope for interpretation.

*Procedures to enhance linguistic validation and cross-cultural adaptation can be compared to benefit future adaptation of the EAT-HC.*

Always Keep in Mind Context Factors of the Origin and Target Countries

Sartorius and Kuyken (1994), who explored the needs of adaptation for equivalence in cross-cultural research, pointed out the importance

of linguistic translation of the content and adaptation of constructs from the original version (Sartorius & Kuyken, 1994).

When adapting the EAT-HC, we recognized that some aspects of dementia-specific and residential long-term care in the three countries differ from the Australian context. For example, in the two Asian countries, there are different perspectives on the design of residential long-term care. In Japan, the focus is on small-scale living facilities that provide privacy and dignity, creating a homelike atmosphere and supporting activities of daily living for residents with dementia to enhance their quality of life. In Singapore, long-term care facilities are designed with a heavy emphasis on a protective environment that promotes the quantity of life or to prolong life.

### ***Adaptation Benefits From the Collaboration of the Instrument Creators***

The difference in cultural perspectives and contextual factors may lead to incongruent adaptation of the original instrument. To mitigate potential incongruence of the newly adapted tool, we consulted with EAT-HC developers. We asked for clarification of specific Australian-English phrases to accurately assess the EAT-HC items using those phrases. In addition, we reflected on the adaptation process by each of the three countries and discussed challenging items to gain deeper understanding of the concept behind the 10 key design principles.

*The difference in cultural perspectives and contextual factors may lead to incongruent adaptation of the original instrument. To mitigate potential incongruence of the newly adapted tool, we consulted with EAT-HC developers.*

The involvement of instrument developers in the adaptation process is also described by other authors and underlines the importance of this intercultural exchange in research (e.g., Hoben et al., 2014; Stacke et al., 2020; Younan et al., 2019). The extent to which collaboration was performed is not always described in detail, but better reporting about collaboration during

translation processes is needed to increase understanding of the instruments' validity.

## **Conclusion**

In this article, we discussed our experience in the process of translation, linguistic validation, and cross-cultural adaptation. We identified overarching needs regarding linguistic and cultural differences. From our experiences with the EAT-HC adaptation process, we recommend the following: The results of the cross-cultural comparison may help other researchers to adopt: (1) an extensive instrument, (2) the allied theoretical construct more appropriately according to their resources, and (3) an aim for application in their cultural context. Furthermore, the comparison showed interesting overarching content regarding environmental design approaches and dementia-design literacy among long-term care practitioners that might be reflected and analyzed in further collaborations. There were differences in the three countries about environmental design approaches and dementia-design literacy among long-term care practitioners that might be reflected and analyzed in further collaborations.

## **Implications for Practice**

- This article presents a critical analysis of the adaptation process of the EAT-HC across three countries and identifies similarities and differences between them, which will prove vital to future researchers interested in adapting the tool.
- Involving potential users in the translation of an instrument may seem to make the adaptation process more complex and time-consuming. Nevertheless, it may help to identify linguistic and conceptual barriers and facilitators in the application of an instrument.
- Although no gold standard exists for translating environmental assessments, it is worthwhile to critically reflect on the existing guidelines while choosing an appropriate tool for adaptation. Doing so helps increase the transparency of adaptation and incorporates established methods for validation.

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## Authors' Contributions

AF, SB, TD, and SJ conceptualized and drafted this article. AF, RP, BH, SB, TD, and SJ were involved in planning, conducting, and analyzing the original studies in each country. AF conducted the cross-cultural analyses for this article. RP, BH, and HV revised the article critically. All authors approved the version to be published.


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