

# Developing a cultural adaptation of the Oxford Visual Perception Screen (OxVPS) for use with Filipino stroke survivors

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## Abstract

Visual perception impairments have detrimental effects on the quality of life of stroke survivors, yet in the Philippines, in which stroke is the leading cause of death and disability, this issue remains neglected. This pilot study uses the Oxford Visual Perception Screening (OxVPS) as an accessible prototype to incite further research on visual perception impairments in stroke survivors. The OxVPS had been translated and culturally adapted to be suitable for Tagalog-speaking Filipinos, with 8 healthy participants testing the newly translated assessment remotely. Results showed that the Filipino and English screening tests were of similar difficulty and acceptability as the average scores for most tasks were alike and qualitative feedback revealed that the participants found the translations simple and easy to understand. One could suggest that from these findings, this screening test has the potential to be used in the future in the Philippines.

**Keywords:** Cultural adaptation, Philippines, Stroke, Translation, Visual perception

## Introduction

Visual perception is the capacity of the brain to receive, analyse and respond to visual input (Schriber Orloff, 2004). Visual perception impairments are recognised by Kolb and Whishaw as deficits in “later visual processing areas in the occipital, parietal and temporal cortex,” (as cited in Vancleef, Colwell, Hewitt, & Demeyere, 2022). Examples of these visual perception deficits include alexia, in which patients have either a limited or a complete incapacity to read (Tranel & Denburg, 2009) and visual agnosias, which are an impaired ability to recognise

visually presented objects, of which there are two subtypes: apperceptive agnosia – an incapability to recognise objects, draw or copy images that are being perceived as patients are unable to correctly perceive objects despite being cognisant of it being intact – and associative visual agnosia, wherein the issue lies in the comprehension of what patients are seeing (Kumar & Wroten, 2022). Another instance of a visual perception impairment that may commonly occur after a stroke is visuo-constructive disturbance, wherein patients cannot form a complex object and arrange its

component parts in their suitable spatial relationships, such as in drawing (Trojano & Conson, 2008).

These visual perception deficits are frequently reported in post-stroke patients: Edmans et al. indicated that visual perception impairments affect 76% of stroke survivors, (as cited in a lecture by Vancleef, 2022). Alongside the evident prevalence of these impairments in patients, it is significant to note the reported connections to adverse impacts in stroke patients, specifically the “mental well-being, trips and falls, quality of life, and functional recovery in rehabilitation for stroke,” (Colwell, Demeyere, & Vancleef, 2021). However, this data only depicts those of which have been systematically screened. Rowe et al. thus found that only 20% of visual perception deficits have been discovered in standard testing (Vancleef, Colwell, Hewitt, & Demeyere, 2022), revealing a greater issue in which visual perception problems are underdiagnosed.

Upon evaluation of the current practice for screening visual perception deficits, challenges such as practitioners experiencing high-pressure environments were highlighted alongside a scarcity of specified

training for visual perception problems (Vancleef, Colwell, Hewitt, & Demeyere, 2022). Another concern that arose was that many occupational therapists rotate between services, making it difficult to prioritise this concept of which there is a lack of clarity regarding the definition itself and whether several post-stroke visual deficits were perceptual or not (Colwell, Demeyere, & Vancleef, 2021). Furthermore, there are inconsistencies in approaches for testing visual perception problems including a significant dependence on self-reports from patients and observation (94%); inappropriately selected screening tools (66%), and the general under-utilisation of them (56%) (Colwell, Demeyere, & Vancleef, 2021) despite batteries being recommended (Cooke, McKenna, & Fleming, 2006). Clinical guidelines for stroke management also advise that all stroke survivors must be screened for cognitive and perceptual impairments, “using validated and reliable screening tools,” (Stroke Foundation, 2022).

With this, the Oxford Visual Perception Screen (OxVPS), a systematic screening assessment, has been developed with the aim of standardizing the

administration of tests and utilising technology to reduce human error (Vancleef, 2020). The OxVPS is used for visual perception difficulties after a stroke.

This pilot study is a cultural adaptation due to the lack of assessments and research with a focus on visual perceptual effects after stroke in the Philippines, despite stroke being the leading cause of disability and death in the country (Collantes, et al., 2021). Although the healthcare in the Philippines is of a high standard, with an extremely proficient medical workforce (Allianz Care, 2022), there are systemic challenges that need to be addressed, such as prominent socioeconomic and regional incongruities as seen with the maldistribution of infrastructure and human resources that are more concentrated in major cities such as Metro Manila (Dayrit, Lagrada, Picazo, Pons, & Villaverde, 2018). Regarding stroke management – among prevailing issues in general care – Navarro, Baroque II, Lokin, and Venketasubramanian (2014) discussed a low ratio neurologist-to-patient population of 1 per 330,000 patients, as well as stroke facilities being almost entirely private, providing an additional financial burden to

patients belonging to lower and middle-income groups.

Taking such issues and concerns into consideration, making use of such an accessible screening test like the Oxford Visual Perceptual Screen appears appropriate to a great extent: the OxVPS assessment itself is quick (for the translated version, approximately fifteen minutes); easy to follow for both the practitioner and the patient due to the simplicity of the tasks and language due to limited medical or technical terminology; and lastly can be conducted both online and in person with a tablet or with a printed paper version. To have a cultural adaptation and translation in Filipino (Tagalog) of the OxVPS would allow for increased availability of this screening test for Filipino speakers, as well as provide more comprehensive insight for both practitioners and patients alike about visual perception deficits as only aphasia, dysarthria, apraxia and neglect deficits are found within current practice audit items (Gonzales-Suarez, et al., 2015).

This pilot study thus aims to ask the following – will this translated screening assessment: (i) be suitable for the target

population and (ii) be of similar difficulty and acceptability to the English version?

## **Methodology**

### *Participants*

Participants were selected upon the criteria consisting of (i) fluency in Tagalog, as they must be native speakers; (ii) age – participants must be from the ages 40-60; and (iii) health: participants must not have any history of stroke or any neurological problems. All participants had normal or corrected vision. 8 native Filipino (Tagalog) speakers from the ages 40-60 were chosen, all without a history of stroke or neurological disease. Participants were recruited via social media (Facebook and Instagram), and through opportunistic means of sampling – utilising the researcher’s network for Filipinos in the United Kingdom. All participants were offered reimbursement for their time, and all had provided informed consent online (through Qualtrics) and verbally prior to taking part in the pilot study. This study was approved by Durham University’s Psychology Department Ethics Committee.

### *Translations*

Following the Oxford Cognitive Screen (OCS) translation and linguistic validation protocol (Oxford University Innovation, 2022), the OxVPS was translated into Tagalog thereby developing the first stages of the OxVPS-FIL. The protocol included two separate forward translations from English to Tagalog, as well as another back translation (Tagalog to English) from another party after completing the cultural adaptation of the original English OxVPS. The cultural adaptation consisted of reviewing the tasks and necessary documents – for instance, the questionnaire and consent document – to see if the language were appropriate. An example of a change made would be that the original OxVPS had used “bus” as part of the “semantic information” task: there was a consensus between the translators and the researcher to change this to “jeepney”, as these vehicles are the most popular means of public transportation in the Philippines rather than buses, which are used more for long-distance land transportation across provinces rather than local routes (Boquet, 2013).

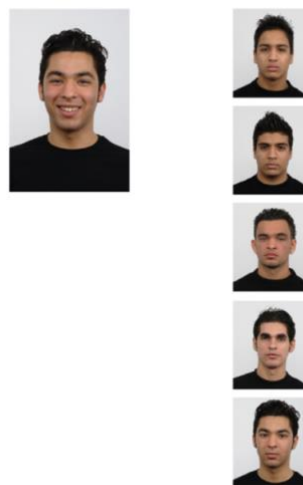
## Measures

Using ‘Qualtrics’ (<https://www.qualtrics.com/uk/>), a questionnaire in Tagalog was conducted to check for the eligibility of the participants regarding their health and other aforementioned criteria such as age and fluency in Tagalog. This questionnaire was also used to confirm that the participants had informed consent.

During the pilot study, the participants were presented with a stimulus booklet via screen-sharing on Zoom. The stimuli included nine different tasks from the original OxVPS: (1) “picture naming”, (2) “semantic information”, (3) “global shape perception”, (4) “item counting”, (5) “simple feature perception”, (6) “face recognition”, (7) “reading”, (8) “cancellation” and (9) “figure copy”. Each task was presented as usual with the original OxVPS, with tasks 1-5 comprising of four images with multiple-choice answers beneath for the participants to choose from. For the face-recognition task, different images of individual models were presented initially, followed by five more images at the end of the task including the original model, but with a

different facial expression. The reading task consisted of 60 words – including compound/non-compound, and high/low-frequency words to match the original difficulty of the English version. The cancellation and figure copy tasks entailed image tasks that were required for the participants to either complete on a screen (for instance, on a tablet) or on paper.

*Figure 1 – Facial recognition task example from the Oxford Visual Perception Screening (OxVPS).*



## Procedure

This pilot study was conducted remotely, with the screening test occurring on Zoom or Teams. The participants used their own electronic devices – this includes the use of their own printer for the final tasks. Prior to

the study, the participants were sent the Qualtrics health questionnaire which included the information and consent documents.

Upon starting the screening test, the participants were required to respond to each translated task to the best of their ability. For the final two tasks, the participants were asked to show their work on-screen, and the printouts were image-captured and cropped for later reference. All the answers were recorded on a printed examiner form. Following the completion of all nine tasks, the participants were asked to provide verbal feedback, with responses recorded verbatim on the examiner form.

### *Data analysis*

#### *Suitability and acceptability to the target population*

Due to the nature of this study being a pilot study, the researchers settled on qualitative data as the most favourable method to measure “suitability” and “acceptability”. This data was collected at the end of the remote screening assessment session, in the form of a brief verbal feedback interview. The interviewee asked the questions in Tagalog:

“Were the questions/tasks in this screening test easy to understand?”, offering the answers, “yes/sort of/no” and an offer for an explanation from the participant. Following this, the interviewee asked, “Would you change anything in this study, in particular with the wording?” regarding the cultural adaptations. Lastly, the participants were asked, “Do you have any general feedback for this screening test?”. It must also be noted that the participant was informed that they could ask the researcher to repeat or clarify words or anything that they found was unclear.

#### *Equivalence of English and Filipino versions*

This pilot study aimed to test whether the two fundamentally parallel versions of the English (n = 80) and Filipino (n = 8) OxVPS assessments were similar in difficulty. To examine this, descriptive statistics – specifically measures of central tendency – were evaluated and compared. The data was then analysed using Cohen’s Kappa coefficient ( $\kappa$ ) as a measure of agreement between the two languages.

## Results

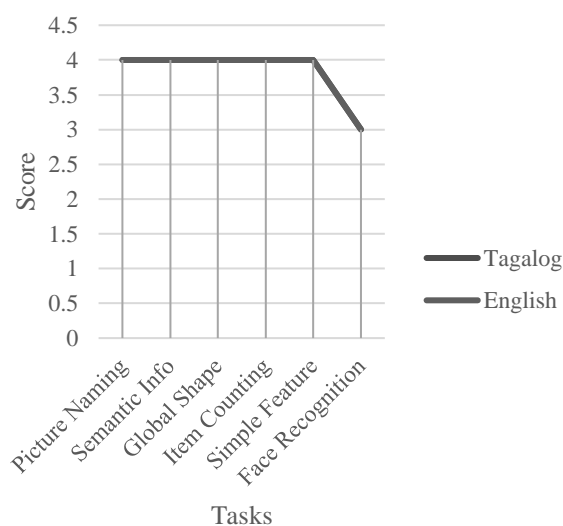
### *Qualitative Data*

Regarding the first question concerning the simplicity of the questions and tasks from the translated screening assessment, there was a generally positive consensus from respondents. Most participants stated that the screening test was “Yes, *madaling maintindihan*,” (easy to understand), and that “[The language] was very simple.” With this, most respondents did not think that there was anything to change – except for one, who did suggest the addition of another Filipino linguist in the process of cultural adaptation for possible future developments as it would help with contemporary language that would be comprehensible for all Filipinos, with specific consideration for older Filipinos. Lastly, there was only positive feedback when concerning the final question, with a participant commenting (in Tagalog) that “[it is] really good to make [researching visual perception after stroke] more accessible [with such a simple procedure],” and other partakers making similar remarks.

### *Equivalence*

The median was highlighted as the central tendency most suitable to examine for this pilot study due to the small sample size and its inability to be affected by outliers, making it seem to be most fitting in terms of representing the scores. It is evident that the average scores from the Tagalog and English versions were very similar, with the scores from tasks 1-6 notably being identical, possibly suggesting a similar level of difficulty (Figure 2).

*Figure 2 – Line graph depicting average scores in tasks 1-6 from Filipino pilot and English screening tests.*



It is necessary to note that for the cancellation task, only three participants were able to complete the task due to strikes with

external issues with postage services at the time. Regardless, the median scores for each task are alike (Figure Copy – Tagalog median = 60, English median = 60; Reading – Tagalog median = 102 wpm, English median = 137 wpm), with the reading task having a relatively faster reading speed than the comparison English score (Table 1). To further investigate these comparisons, a Cohen's Kappa coefficient was utilized as a measure of agreement: with a raw percentage agreement of 0.9%, compared to the “moderate” Kappa measure (0.6  $\kappa$ ), one can assume that the translations are appropriate.

## Discussion

This pilot study's aims were motivated by the lack of attention on visual perception impairments patients may experience after stroke in the Philippines, despite the evident prevalence and debilitating effects on stroke survivors. In this regard, the researchers predominantly focused on the quality of the translations, the cultural adaptations and whether the screening test – in Tagalog – worked well with the desired population.

Commencing with the process of culturally adapting and translating the OxVPS for suitability with Filipinos, the qualitative feedback from the participants indicated a good start for the screening assessment, as all the participants seemed happy with the translations. It is also necessary to note that the participants acknowledged that this was still only a pilot study; the participants knew that if this screening test were to be further developed, there would be further revisions to be completed of the translations as the translators were native speakers, but not professional linguists. Furthermore, the researchers also acknowledge that although the difficulty of the face recognition task was similar to the English version, it would still nevertheless be necessary to update the photographs as only one out of the four parts of the task had models that were non-white. This would immediately put the target population at a disadvantage as the task is already relatively challenging. If this screening test were to be further developed, new models must be recruited and photographed as another cultural adaptation.

Regarding the question of the screening test's similarities and acceptability

to the English version, the procedure of the test itself must first be discussed. Although the screening tests overall went well, as with the purpose of a pilot study – minor mistakes were made. For instance, due to a slight miscommunication with the original creator of the OxVPS about the reading task in which there must be 55 high-frequency words (in which 5 words are compound), with 5 low-frequency words (in which 3 words are compound) – 60 words overall. When translating into Tagalog, the translators worked together to form a story but ultimately focused on the number of words overall and looked – with great difficulty – for compound Tagalog words. This resulted in finding 10 compound words, with half being low frequency. Compared to the 8 compound words in the original English version, this meant that by default, the Tagalog OxVPS was slightly more difficult than the original. Despite this, the median for reading speed in the Tagalog version was unpredictably 35 seconds faster than in the English screening test, possibly suggesting that the Tagalog version was of similar difficulty despite this initial mistake. If further development of this screening test is considered, this reading test

must be revised. Furthermore, due to an issue with the execution of the cancellation task, the researcher decided to simply ask if the participant understood the task, from the translated question to the actual test itself. Every participant stated that they could understand the translation and the task on hand. Despite the mistakes initially made, the translated screening assessment in itself seemed to be relatively successful as a pilot study as the participants themselves did not seem to find prominent issues to criticise.

With this, the researcher is aware of what is necessary to change and adapt for further development: from altering the reading task; to pre-emptively preparing for organisational issues such as with the cancellation task and other paper-based tasks with advising participants to use tablets or sending out alternative printed copies of the tasks.

To conclude, one can state that the screening test in practice during the pilot study proved to be successful in answering the questions – in that it is suitable for the target population according to the participants, and that it is indeed of somewhat similar difficulty and acceptability to the English version.

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## Tables

Table 1

*Comparison data of tasks 7-9*

Outcome measure per task	Tagalog				English			
	N	Median	IQR	10th percentile	N	Median	IQR	10th percentile
<b>Cancellation</b>								
Object asymmetry	3	0	0	0	80	0	0-0	0
Space Asymmetry	3	0	0	0	80	0	0-0	0
Time (sec)	3	44.8	0	44.8	79	47	36-62.5	79.2
<b>Figure Copy</b>								
Total	8	60	60-60	60	80	60	60-60	59
Strategy	8	1	1-1	1	80			
<b>Reading</b>								
Reading Speed (wpm)	8	102	96-96	101	78	137	129-144	114
Alexia	8				78	10	10-10	10