ORIGINAL ARTICLE

# Development and validation of the Thai risk screening questionnaire to screen the visual problem of the older adults in Thailand

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***Received:*** *7 March 2018 Revised: 31 September 2018* ***Accepted:*** *15 October 2018*
***Available online:*** *November 2018*

## Abstract

Yingyong P. Development and validation of the Thai risk screening questionnaire to screen the visual problem of the older adults in Thailand. J Pub Health Dev. 2018;16(3):1-14

Screening the risk of the visual problem in older adults has never been developed in Thailand. It is the necessary for primary public health care policy to support the local personnel (at the grass root level) who can thoroughly use the medical services to screen the risky rural patients. This study aimed to translate and evaluate the quality of the Thai version of the visual problem in older adults as the risk screening questionnaire. The original screening questionnaire by Horowitz, et al(1991) was translated and modified into the Thai version. The Thai version of questionnaires was primarily used with 450 participants as part of pre-testing between October 2016 to March 2017. Out of these, 225 were visually impaired patients attended at the out-patient eye clinic in the hospital and 225 ones without visual impairment.

The results showed specificity of 75.1%, sensitivity of 93.8%, positive and negative likelihood ratios of 3.77 and 0.08. The positive and negative predictive value were 79.0% and 92.4% respectively. Its accuracy was 84.4%.

The study indicated that the Thai version of the visual problem in the Thai older adults risk screening questionnaire showed high accuracy in detecting visual impairments and should be suitable to use as the screening tool in the primary care setting.

**Keywords:** questionnaire, risk screening, older adults

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# การสร้างและประเมินความเที่ยงของแบบคัดกรองความเสี่ยงปัญหาการมองเห็นของผู้สูงอายุในประเทศไทย

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**บทคัดย่อ**

เพ็ญพิมล ยิ่งยง การสร้างและประเมินความเที่ยงของแบบคัดกรองความเสี่ยงปัญหาการมองเห็นของผู้สูงอายุในประเทศไทย ว. สาธารณสุขและการพัฒนา 2561;16(3):1-14

ปัจจุบันยังไม่มีการคัดกรองความเสี่ยงของปัญหาการมองเห็นของผู้สูงอายุในประเทศไทย นับเป็นยุทธศาสตร์สาธารณสุขมูลฐานที่จำเป็นอย่างเร่งด่วนในการริเริ่มช่วยบุคคลากรทางการแพทย์ในระดับชุมชนที่จะนำบริการทางการแพทย์ไปยังผู้ป่วยที่มีความเสี่ยงในชุมชนชนบทได้อย่างทั่วถึง งานวิจัยนี้มีวัตถุประสงค์เพื่อแปลและประเมินคุณภาพของแบบสอบถามของ Horowitz (ปีพ.ศ. 2534) และคณะเป็นภาษาไทยเพื่อคัดกรองความเสี่ยงของปัญหาการมองเห็นในผู้สูงอายุ โดยนำไปทดสอบใช้ในอาสาสมัครจำนวน 450 คน ระหว่างเดือนตุลาคม 2559- เดือนมีนาคม 2560 อาสาสมัครที่เป็นผู้พิการทางสายตาที่เข้ารับการรักษาในแผนกผู้ป่วยนอกในโรงพยาบาล จำนวน 225 ราย และอาสาสมัครที่ไม่เป็นผู้พิการทางสายตา จำนวน 225รายได้ตอบแบบสอบถามนี้

ผลการวิจัยพบว่าแบบสอบถามนี้ มีค่าความจำเพาะเท่ากับ 75.1% ค่าความไวเท่ากับ 93.8% ค่า positive และ negative likelihood ratios เท่ากับ 3.77 และ 0.08 ค่า positive และ negative predictive value เท่ากับ 79.0% และ 92.4% ตามลำดับ และมีค่าความแม่นยำ 84.4%

ข้อสรุปจากการศึกษานี้พบว่าแบบสอบถามฉบับภาษาไทยเพื่อคัดกรองความเสี่ยงของปัญหาการมองเห็นในผู้สูงอายุไทยนี้เหมาะสมในการใช้เป็นเครื่องมือคัดกรองเบื้องต้นที่แม่นยำสูงในการดูแลระดับปฐมภูมิ

**คำสำคัญ:** แบบสอบถาม คัดกรองความเสี่ยง ผู้สูงอายุ

## Introduction

Thailand comprises of the elderly population about nine and a half million people(aged 60 and over) or equals to 14.7% of the total population. It is estimated that by the year 2025, there will be 14.4 million elderly people (over 20% of the total population) specified Thailand as the elderly society country[1-2]. The average age of the Thai fe male and male population have been longer for about 82 years and 79 years, respectively[3-4]. Based on the five national blindness surveys in Thailand , published in 1983, 1987,1994[5], 2006[6-8] and 2013[9] showed a downward trend of blindness[10] from 1.14%, 0.58% and 0.31%, in contrast to an upward trend of blindness from 0.59 and 0.60% respectively in spite of the intensive cataract surgery campaign , eye health promotion and eye disease prevention in Thailand[11-13]. Therefore, this condition is a public health problem that should be resolved urgently to help the local level personnel to freely bring about to the primarily ophthalmic medical care services by the governmental registration.

| Year | Prevalence of blindness (percent) |
|---|---|
| 1983 | 1.14 |
| 1987 | 0.58 |
| 1994 | 0.31 |
| 2006 | 0.59 |
| 2013 | 0.60 |

Older people are more vulnerable to health problems especially their chronic illness that deteriorate their health. Almost all of the thai elderly population depends their living on their family[14-16] due to their extended families.Early surveillance screening for chronic eye diseases is necessary to initiate the involved national policies and strategies with concrete measures. Currently, there are neither standards for this screening nor its skill development system for eye vision in Thailand.

People with visual impairment of whom the visual acuity less than 6/12 or 20/40 by the Snellen chart had high risk of falls[17], hip fracture[17], depression[18] and got the barriers to entry into society and medical services[19]. Owing to their limited activities of daily living, low quality of life occured[20]. Eye disability does not only bring the economic damage to the patients and their families, but also leads to massive damage to the nation. As the early risk screening management, it is the most important prophylaxis for blindness. Risk screening is an effective and rewarding operation to ameliorate the blinding condition. Eye diseases that cause blindness are most likely to be cataract, followed by glaucoma, retinal diseases such as diabetic retinopathy, aged related macular degeneration, other retinopathies and corneal diseases respectively. The blindness incidence will increase with increasing age. Therefore, age is a significant risk factor for blindness[21]. The recommendation as the self-reported vision problems, primarily questionnaire-based impairment screening identified moderate quality of evidence[22]. English and French version of the Functional Vision Screening Questionnaire developed by Horowitz, et al. showed the Cronbach's alpha 0.87 and 0.83 respectively[23]. Both criterion validity of these Functional Vision Screening Questionnaire developed by Horowitz, et al[23] compared to Mangione, et al(2001)[24] or Steinberg, et al (1994)[25] were also acceptable with Pearson's

r 0.51 and 0.61 respectively, and their associated probabilities were less than 0.001. Therefore, the effective network for screening assessments in eye care for the elderly and the visually impaired should be implemented[26]. In Singapore, the modification of the validated Visual Function-11 (VF-11) questionnaire proved to be reliable and valid tool to evaluate the vision impairment[27]. Screening by modified VF-11 depended on eye related visual impairment. Mild/ moderate visual impairment were 2.2 times (95% confidence intervals [CI], 1.6–3.0; P = 0.007) more likely to have poor vision function than people with normal vision. Severe visual impairment were 13.6 times (CI, 4.0–45.4; P<0.001) more likely to poor vision function than people with normal vision. To the author's knowledge, there has very few research about the questionnaire to screen the risk of the visual problem in Asia. Thai questionnaire to screen the risk of the vision problems in the elderly should be developed as the simple and accurate questionnaire for the local medical staff, the Village Health Volunteers and the Health Reporters[28]. It should be utilised to screen the elderly people in rural area, find the higher risk patients and urgently transfer them to the supertertiary care unit with the advanced technology. Due to this aggressively proactive integration to search and to empower the quality of life of the handicapped older adults, stimulating the forward movement assistance to completely access the medical services to the high-level multidisciplinary referral system should be achieved[28].

This study aimed to translate and evaluate the Thai version of the visual problem as the risk screening questionnaire to screen the risk of the vision problems for Thai elderly people. In this study, visually impaired are those who have the vision in the better eye less than 6/18 by the Snellen chart with both their eyeglasses or contact lenses correction or the visual field in the better eye less than 30 degrees from the fixation in spite of the best medical treatment.

## Methods

### *Study design and participants*

The research design is correctional, case-control study at Eye Clinic, Out Patients Department of Mettapracharak (Watraikhing) Hospital. It is the supertertially ophthalmic care hospital located at Raikhing district, Sampran area in Nakhon-pathom province, Thailand. In this clinic, by average having visual impaired patients about 520 patients per month. The sample size was calculated 98 percent of sensitivity, 90 percent of specificity and 20 percent of the estimate acceptable discrepancy. The minimum sample size for this study was 375, to prevent errors in data collection process, we added 20% to the sample, made of final of 450.

The researcher translated and developed the Horowitz, et al[29] functional vision screening questionnaire to screen the risk of vision problems in the elderly in Thai version, 15 items, giving 1 point if there is problem and 0 point without problem (Table1). Before using this questionnaire, among 40 out-patient visually impaired were tested to answer this questionnaire to reorganize and remodel for the final consideration. The following five steps in translation procedure were forward translation, back translation, back translation review, proofreading and review with linguistic validation.

**Table 1** Thai risk screening questionnaire to screen the visual problem of the older adults

แบบสอบถามนี้เป็นเครื่องมือคัดกรองผู้สูงอายุที่มีปัญหาการมองเห็น ผู้ที่ใช้แว่นตาหรือคอนแทคเลนส์ควรตอบคำถามในแง่ของการมองเห็นเมื่อใส่แว่นตาหรือคอนแทคเลนส์แล้ว

| | | |
|---|---|---|
| 1. คุณเคยรู้สึกว่าสายตามีปัญหาทำให้ยากที่จะทำสิ่งที่คุณต้องการจะทำ | 1.ใช่ | 0.ไม่ |
| 2. คุณสามารถดูพาดหัวข่าวขนาดใหญ่ในหนังสือพิมพ์ใช่หรือไม่? | 0=ใช่ | 1.ไม่ |
| 3. คุณสามารถดูตัวหนังสือปกติในหนังสือพิมพ์ นิตยสารหรือหนังสือใช่หรือไม่? | 0=ใช่ | 1.ไม่ |
| 4. คุณเห็นตัวเลขและชื่อในสมุดโทรศัพท์ใช่หรือไม่? | 0=ใช่ | 1.ไม่ |
| 5. เมื่อคุณกำลังเดินอยู่บนถนนคุณเห็นป้ายชื่อถนนใช่หรือไม่? | 0=ใช่ | 1.ไม่ |
| 6. เมื่อข้ามถนน รถยนต์ดูเหมือนจะปรากฏขึ้นอย่างฉับพลันใช่หรือไม่? | 1.ใช่ | 0.ไม่ |
| 7. คุณมีปัญหาในการมองดูทีวี,เล่นไพ่,เย็บผ้าหรือทำกิจกรรมคล้ายๆกันใช่หรือไม่? | 1.ใช่ | 0.ไม่ |
| 8. คุณมีปัญหาในการมองเห็นฉลากของขวดยาใช่หรือไม่? | 1.ใช่ | 0.ไม่ |
| 9. คุณมีปัญหาในการอ่านป้ายติดราคาเมื่อซื้อสินค้าใช่หรือไม่? | 1.ใช่ | 0.ไม่ |
| 10. คุณมีปัญหาในการอ่านจดหมายของคุณใช่หรือไม่? | 1.ใช่ | 0.ไม่ |
| 11. คุณมีปัญหาในการอ่านลายมือของคุณใช่หรือไม่? | 1.ใช่ | 0.ไม่ |
| 12. คุณสามารถเห็นใบหน้าของคนในครอบครัวหรือเพื่อน ๆ เมื่อพวกเขาเดินเข้ามาในห้องขนาดพอสมควรใช่หรือไม่? | 0=ใช่ | 1.ไม่ |
| 13. คุณมีปัญหาในการมองเห็นในที่มีแสงสลัวๆใช่หรือไม่? | 1.ใช่ | 0.ไม่ |
| 14. คุณมักจะนั่งใกล้โทรทัศน์มากใช่หรือไม่? | 1.ใช่ | 0.ไม่ |
| 15. หมอเคยบอกว่าสายตาของคุณไม่สามารถทำให้มองเห็นได้ดีกว่านี้.ใช่หรือไม่? | 1.ใช่ | 0.ไม่ |

***Data collection procedure***

Among the 225 out-patient visually impaired and 225 without visual impairment attending at the Mettapracharak(Watraikhing) eye clinic hospital, the supertertially ophthalmic care hospital located at Raikhing district,Sampran area in Nakhonpathom province were recruited. Inclusion criteria, 60 years and older, etc. Some patients were referred from all parts of Thailand for the specifically ophthalmic consultation. The study was carried out between October 2016 and March 2017. Four hundred and fifty participants were selected through random sampling. Prior to the initiative of the present study, all interviewer were trained with the involved questionnaire. To ensure the accuracy of the data, the author revised them in a pilot check. Clusters were stratified to ensure an

approximately equal sample of the visually impaired and non-visually impaired ones. All of them first attended at the Mettapracharak (Watraikhing) eye clinic hospital with 85 percent response rate in this study. Blind interview were performed to overcome the bias. The data were collected as sex, the age range, and type of the questionnaire responses. The inclusion criteria were sixty years old or over, visually impaired based on the terminology used in this research according to the World Health Organization), voluntarily responded to the questionnaire by correction with only glasses or contact lenses without any other visual aids (such as magnifying glasses, etc.). If the volunteer did not see the questionnaire with glasses or contact lenses correction or an illiterate one, the volunteer questionnaire reader was required.

***Statistical analyses***

Univariate analysis was used to describe the descriptive data to measure frequency distributions: mean, standard deviation and percentage[30]. 95% confidence intervals are constructed at a confidence level. The level of significance was set at 0.05. Specificity[31] is a feature of a diagnostic test that indicates the proportion of negative outcomes in a normal person. Sensitivity[31] is a feature of a diagnostic test that indicates the proportion of positive results in a patient with a disease. Positive and negative likelihood ratio[32-37] were a numerical measure of the condition with probability. A likelihood ratio of greater than 1 shows the test is associated with the disease. A likelihood ratio less than 1 shows that the test is associated with absence of the disease. Positive predictive value[35] is the probability that the disease is present when the test is positive. Negative predictive value[35] is the probability that the disease is not present when the test is negative. Youden's index[34] is an expanded formula that selects the optimum cut off point of the test.

***Ethical consideration***

This research project was approved by the Mettapracharak (Watraikhing) Hospital Ethical Committee (OPH Ar0292560), the Department of Ophthalmology, Ministry of Public Health.

## Results

A sample consisted of 450 participants (Table 2).The general characteristics of this sample revealed 192 (42.7 %) males and 258 (57.3 %) females, respectively. The number of volunteers in each age group was between 16.2% - 23.8 %.The participants ranged in age from 60 to 92 years.The majority(23.8%) of the age ranged between 76-80 years.

**Table 2** Demographic characteristics of the volunteers

| Age (years) | Sex | | Total (%) |
|---|---|---|---|
| | Male | Female | |
| 60-65 | 46 | 49 | 95 (21.1) |
| 66-70 | 26 | 47 | 73 (16.2) |
| 71-75 | 38 | 55 | 93 (20.7) |
| 76-80 | 47 | 60 | 107 (23.8) |
| >80 | 35 | 47 | 82 (18.2) |
| Total | 192 | 258 | 450 (100) |

Mean = 74.6, SD = 0.8, Min=60, Max=92

The participants were grouped into the visually impaired and non-visually impaired. The ratio between the visually impaired and non visually impaired equals to 1:1(225:225). Almost all of the participants volunteered to answer the questionnaire by themselves. There were only eight respondents who don't answer the questionnaires by themselves. Only one of the non-visually impaired did not want to read by oneself so the interviewer was needed to read instead.Other seven visually impaired were interviewed,one was illiterate and the other six were blind both eyes as in the Table 3.

**Table 3** Distribution of the volunteers classified by sex, age, type of answering the questionnaire and the type of interview.

| | **Non- visually impaired (Number)** | **Visually impaired (Number)** | **Total (Number)** | **p-value** |
|---|---|---|---|---|
| **Sex** | | | 258 | 0.020 |
| Female | 114 | 144 | 192 | |
| Male | 111 | 81 | | |
| **Age** (years) mean (SD) | 74.2 (7.1) | 75.3 (6.8) | | <.001 |
| **Snellen visual acuity with correction in the better eye** | | | | |
| 20/70 or better | 225 | - | 225 | |
| Less than 20/70-3/60 | - | 112 | 112 | |
| Less than 3/60 | - | 113 | 113 | |
| **Type of answering responding** | | | | |
| Self report | 224 | 218 | 442 | |
| Interview | 1 | 7 | 8 | |
| **Type of interview** | | | | |
| To indicate the interviewer to read instead | 1 | - | - | |
| illiterate | - | 1 | 1 | |
| blind both eyes | - | 6 | 6 | |

The mean scores of each the Thai version of the visual problem as the risk screening questionnaire items for both groups of the participants are all listed in Table 4. The mean score and percentage of having the visual problem are higher in the visually impaired group than the non-visually impaired group.

**Table 4** Mean score (SD) and percentages of respondents having visual problem by items and groups

| Items | Non visually impaired | | Visually impaired | |
|---|---|---|---|---|
| | Score>0 (%) | Mean (SD) | Score>0 (%) | Mean (SD) |
| 1. Do you ever feel that problems with your vision make it difficult for you to do the things you would like to do? | 2.2 | 0.02 (0.01) | 97.8 | 0.96 (0.03) |
| 2. Can you see the large print headlines in the newspaper? | 2.9 | 0.03 (0.02) | 97.1 | 0.95 (0.04) |
| 3. Can you see the regular print in newspapers, magazines or books? | 3.8 | 0.03 (0.02) | 96.2 | 0.94 (0.04) |
| 4. Can you see the numbers and names in a telephone directory? | 5.5 | 0.04 (0.02) | 94.5 | 0.92 (0.05) |
| 5. When you are walking in the street, can you see the "walk" sign and street name signs? | 4.2 | 0.03 (0.01) | 95.8 | 0.93 (0.04) |
| 6. When crossing the street, do cars seem to appear very suddenly? | 2.7 | 0.02 (0.01) | 97.3 | 0.94 (0.05) |
| 7. Does trouble with your vision make it difficult for you to watch TV, play cards, do sewing, or any similar type of activity? | 5.3 | 0.04 (0.02) | 94.7 | 0.92 (0.04) |
| 8. Does trouble with your vision make it difficult for you to see labels on medicine bottles? | 3.9 | 0.04 (0.02) | 96.1 | 0.94 (0.04) |
| 9. Does trouble with your vision make it difficult for you to read prices when you shop? | 4.3 | 0.03 (0.02) | 95.7 | 0.94 (0.03) |
| 10. Does trouble with your vision make it difficult for you to read your own mail? | 3.6 | 0.03 (0.02) | 96.4 | 0.94 (0.03) |
| 11. Does trouble with your vision make it difficult for you to read your own handwriting? | 2.7 | 0.02 (0.01) | 97.3 | 0.95 (0.03) |

**Table 4** Mean score (SD) and percentages of respondents having visual problem by items and groups (Conts).

| Items | Non visually impaired | | Visually impaired | |
|---|---|---|---|---|
| | Score>0 (%) | Mean (SD) | Score>0 (%) | Mean (SD) |
| 13. Do you have any particular difficulty seeing in dim light? | 6.2 | 0.05 (0.03) | 93.8 | 0.92 (0.03) |
| 14. Do you tend to sit very close to the television? | 5.4 | 0.04 (0.02) | 94.6 | 0.93 (0.02) |
| 15. Has a doctor ever told you that nothing more can be done for your vision? | 0.0 | 0 | 100 | 1.0 |

Due to the principal consideration, the best sensitivity corresponding to the maximum specificity, the score of 9 or more was the optimum score for the best quality screening point to refer the patient at the appropriate risk to the supertertially hospital (Table 5).

**Table 5** Sensitivity, specificity and Youden's index for possible cut-off points

| Score | Sensitivity(%) | Specificity(%) | Youden's index |
|---|---|---|---|
| ≥ 7 | 79.1 | 71.5 | 0.69 |
| ≥ 8 | 83.9 | 72.1 | 0.76 |
| ≥ 9 | 92.7 | 74.7 | 0.84 |
| ≥ 10 | 84.8 | 74.9 | 0.80 |
| ≥ 11 | 85.7 | 69.8 | 0.75 |

The score of 9 or more showed highest sensitivity (92.7%) and Youden's index (0.84).

When the questionnaire was used to screen the risk of the visual problem in older adults, all the results showed in Table 6. The answering behavior of the questionnaire was classified as positive and negative tests. The result showed the sensitivity is 93.8% and the specificity is 75.1%.The accuracy by the receiver operating characteristic (ROC) analysis equaled to 84.4%.

**Table 6** Correspondence between two groups of respondents and the outcome of the result of the questionnaire

| | Visually impaired | Non visually impaired | Total |
|---|---|---|---|
| **Positive test** | 211 | 56 | 267 |
| **Negative test** | 14 | 169 | 183 |
| **Total** | 225 | 225 | 450 |
| | **sensitivity** =93.8% | **specificity** =75.1% | |

Positive predictive value = 79.0% Negative predictive value = 92.4%
(Using a score of 9 or more as an indication to refer the patient to the ophthalmologist in the supertertially-care hospital)

The researcher summarized the characteristics of the outcomes of the questionnaire in terms of the values and the 95% confidence interval (Table 7).

**Table 7** Outcome summary of the results

| Statistic | Value | 95% confidence interval |
|---|---|---|
| Sensitivity | 93.8% | 89.78% - 96.56% |
| Specificity | 75.1% | 68.93% to 80.62% |
| Positive Likelihood Ratio | 3.77 | 3.00 to 4.74 |
| Negative Likelihood Ratio | 0.08 | 0.05 to 0.14 |
| Positive Predictive Value | 79.0% | 74.97% to 82.58% |
| Negative Predictive Value | 92.4 % | 87.85% to 95.27% |
| Accuracy | 84.4% | 80.76% to 87.67% |

## Discussion

The results showed that the prevalence of females were more than males. It might be that females generally lived longer than men[10]. This situation implied that females were more likely to be visually-impaired than men. In Table2, these variables such as sex and age did not differ statistically( p – value < 0.05). The average age of the women was not significantly higher than men in this study. Due to considering the general criteria for the screening evaluation of the diseases[36], a high sensitivity was principally considered although the value of the specificity could be increased by examining several measures, such as visual acuity and visual field measurements by trained medical personnel.

There were some questionnaires that accessed the symptoms of the visual disabilities from chronic vision loss that were different from geographic regions with moderate to severe ocular diseases. Compared to Mangione, et al(2001)[24], the 25-item National Eye Institute Visual Function Questionnaire(NEIVFQ-25), included the white American and the African American that differed from the Thai population. NEIVFQ-25 showed the Pearson's validity (r = 0.51) and the Cronbach's alpha coefficients reliability of 0.91. Due to Steinberg, et al (1994)[25], the visual function index(VF-14), showed the correlation's validity of 0.61 and the internal consistency reliability level in all sites (Cronbach's alpha coefficients of 0.84). Age, nationality, culture, type of ocular diseases and ophthalmic severity were some variable conditions involvement that affected the appropriate questionnaire. For these variations, we did not definitely evaluate the performance among the Thai risk screening questionnaire to screen the visual problem, NEIVFQ-25 and VF-14. Further investigations are necessary to consider the responsiveness of these questionnaires in longitudinal studies.

Comparing from introduction review of screening tools, the result is acceptable to Thai situation. Although this questionnaire to screen the risk of vision problems in the Thai elderly has a sensitivity of 93.8%, which is quite high, a lower specificity of 75.1% can be explained in terms of risk screening.

These discrepancies might occur such as each patient had a different severity of the disease, the patients might have the disease, but did not show symptoms, the symptoms of the same disease might show different expressions, the patients may have other diseases, there would be some differences in the individual (intraobserver and interobserver agreement), different diseases needed different methods to diagnose, some co-morbidities (many diseases by oneself) might interfere the results, some patients had both visual acuities and visual field defects, visual field defect examination took time to inspect, fatigue is consistent with the results of the study and depression may be a strong predictor of the responses.

## Conclusions and recommendations

Owing to this study, the Thai version of the visual problem in the thai older adults as the risk screening questionnaire was suitable to use as the accurate screening tool in the primary care setting.On the other hand, there should be continuous researches on target issues in the implementation of the Thai public health system. Assessing the suitability of actual use of the questionnaire should be conducted in many areas of the country. The Thai elderly health assessment tool should also be holistic approaches.

Comprehensive geriatric assessment includes general health and other comorbidities that were not ophthalmic conditions such as diabetes, hypertension and other vital organ diseases which is usually more common with increasing age.

However,this study may initiate the public's awareness of the physical health that affects the quality of life in the long term.It is also a guideline for implementing the cooperation among the grassroots medical personnel who can thoroughly access these underprivileged population to achieve the appropriate health promotion services.In the future, the incidence of blindness should have been decreased. Finally, early screening is one of the preventive tools of the medical innovative policy[36-37].

## Acknowledgements

The author is grateful to all participants and the teamworkers who make this research possible.

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