ABSTRACT

Introduction:

The global initiative to prevent avoidable blindness in the world has taken several measures to accomplish their theme "Vision 2020 – Right to sight". However, visual problems still remain among the least priority in preventive care. It is a silent invader having its consequences on education, employment and social participation, affecting the quality of life of people and ultimately reduces the productivity of the country. Refractive errors are common after 40 years of age. Thus, it is important to identify the problem of low vision in the community that can be easily identified and corrected with minimum cost.

The objectives of this study include; to select, translate and validate an instrument to assess the quality of life of Sri Lankan adults aged 40 – 60 years with low vision; to determine the prevalence of low vision caused by refractive errors (RE), the correlates and risk factors of refractive errors and to assess the Quality of Life (QOL) of those with low vision.

Methods:

The study consisted of four components. In component I the "Impact of Vision Impairment profile" (IVI) of Copyright centre for eye research Australia was translated into Sinhala (IVI S) and validated to assess the QOL among Sri Lankan adults with low vision aged 40 - 60 years. Component II was a community based cross sectional study to determine the prevalence of low vision caused by refractive errors (RE). Component III was a case control study to identify the correlates and risk factors of RE among adults aged 40 – 60 years in Galle District. In component IV, the QOL of low vision in those adults with low vision was compared with normal vision adults using a cross sectional comparative study.

Results:

"Impact of Vision Impairment profile" (IVI) was translated into Sinhala (IVI S) and validated to be used in the Sri Lankan context for the measurement of QOL. Validation was done by principal component analysis and convergent and discriminant validity were assessed. During this process, the number of items in the original questionnaire has been reduced from 32 to 30. The convergent and discriminant validity of the IVI S was good with significant correlation. Test retest reliability (lowest 0.73) and the internal consistency (lowest 0.97) were found to be high.

Component II, included a study sample of 708 people aged 40-60 years. A majority (30.8%, n=218) was in the 40-44 years age group. The mean age was 49.0 (SD ± 6.2) years. There were 52.3% (n=370) females in the study sample with a male, female ratio of 1:1.09. Among them 88.9% (n=630) were from the rural sector, 99.3% (n=689) were Sinhalese and 96.9% (n=686) Buddhists. From the study sample 33.3% (n=236) were in Social Class III and 25.9% (n=183) in Social Class V. Among males 71.4% (n=241) and among females 64.0% (n=237) had an education level equal to or greater than General Certificate Examination-Ordinary level (GCE (O/L)).

In this study the prevalence of low vision and blindness for the uncorrected visual acuity (VA) was 37.1% (n=263) (CI 95% 33.5 – 40.7) and 0.6% (n=4) (CI 95% 0.56 – 0.65) respectively. Thus the total with visual impairment in the study sample was 37.7% (n=267). The prevalence of low vision, mild visual defect and blindness caused by uncorrected RE were 30.8% [(n=214) (95%CI: 27.4 – 34.2)], 7.2% [(n=50) (95%CI: 6.7 – 7.8)] and 0.4% [(n=3) (95%CI: 0.37 – 0.43)] respectively. Therefore, the prevalence of total uncorrected RE was 38.4% [(n=267) (95%CI: 34.1 – 41.3)]. According to refraction on better eye; simple myopia, simple hypermetropia and mixed astigmatism were 6.9%(n=12), 42.1% (n=67) and 35.2% (n=56) respectively.

Correlates of RE were assessed in adults aged 40 – 60 years in Galle District. The age group 50-60 years have 4.33 ($p<0.001$) times higher risk of developing RE than 40 –

50 year age group people. Female sex (OR = 1.76 95% CI – 1.20 – 2.59), low education level (OR = 1.77, 95% CI – 1.16 – 2.70) and family history of eye disorders (OR = 6.36, 95% CI – 6.36 – 2.50) were found to be correlates and risk factors of RE.

The vision related QOL among low vision group is lower than normal vision group in all five domains and in the total score. The total mean score of vision related QOL among low vision group was 50.8 (SD +/- 18.3) and that of normal vision group was 68.6 (SD +/- 12.9) indicating that low vision people have limited or impaired daily activities or a poor QOL when compared to normal people.

Conclusions and Recommendations:

The IVI questionnaire was successfully translated to Sinhala (IVI S) and validated, to be used as an instrument to assess the quality of life of Sri Lankan adults with low vision.

The prevalence of total uncorrected refractive error, low vision caused by refractive error and blindness due to refractive error were high in this study. Therefore the policy makers and the health planners have to look into this problem in terms of correction of low vision and preventing blindness due to uncorrected refractive error which is a preventable cause.

The vision related QOL in low vision people is lower than the normal people. Therefore to improve their QOL corrective measures could be taken. And also the validated IVI S could be used to reassess the improvement in QOL after correction.

Key words – Refractive Error, Low Vision, Quality of Life