INTISARI

HUBUNGAN *VISUAL ACUITY* DAN *SPHERICAL EQUIVALENT* TERHADAP PERSENTASE KONTRAS SENSITIVITAS PADA PEMERIKSAAN *PREFERENTIAL LOOKING* DENGAN *HEMISPATIAL GABOR PATCH* BERBASIS KOMPUTER PADA ANAK PRASEKOLAH

Latar Belakang: Kontras sensitivitas merupakan indikator standar pemeriksaan fungsi mata anak. Pemeriksaan penglihatan pada anak memerlukan metode dan teknik yang berbeda sesuai dengan kondisi anak. Selama ini, pemeriksaan mata pada anak menggunakan *LEA chart, E-chart*, dan *Snellen chart*. Pemeriksaan tersebut lebih sulit dilakukan karena harus memiliki kemampuan kognitif yang cukup. Dengan adanya pemeriksaan *preferential looking* dengan *hemi-spatial Gabor Patch* berbasis komputer, diharapkan pemeriksaan ini mampu memeriksa secara akurat fungsi penglihatan anak dengan apapun kondisi anak, termasuk *Visual Acuity* dan *Spherical Equivalent* pada anak. Akurasi pemeriksaan Sensitivitas akan diukur secara kuantitatif menggunakan nilai yang sudah terstandarisasi.

Tujuan: Untuk mengetahui hubungan *Visual Acuity* dan *Spherical Equivalent* terhadap hasil kontras sensitivitas pada pemeriksaan *preferential looking* dengan *Gabor patch* pada anak prasekolah

Metode: Penelitian ini adalah penelitian analitik observasional dengan desain *cross sectional quantitative*. Peneliti melakukan pemeriksaan *preferential looking* pada anak prasekolah (3-6 tahun) dengan *hemi-spatial gabor patch* berbasis komputer yang sebelumnya sudah dilakukan pemeriksaan standar (*LEA Chart*) dan refraksi dengan *autorefraktometer portable*. Hasil kemudian dianalisis secara kuantitatif sesuai dengan *Visual Acuity* dan *Spherical Equivalent*.

Hasil: Setelah penelitian dilaksanakan, rata-rata sensitivitas kontras subjek adalah $0,56 \pm 0,34$, sferikal ekuivalen $0,26 \pm 0,56$, dan ketajaman pengihatan (LogMAR) $0,1 \pm 0,1$. Terdapat hasil yang signifikan pada korelasi sferikal ekuivalen terhadap sensitivitas kontras (nilai-p=0,002) dengan korelasi positif (r=0,581). Namun, korelasi antara visus mata (LogMAR) terhadap sensitivitas kontras didapati korelasi negatif (r=-0,273) dengan hasil yang tidak signifikan (nilai-p=0,197).

Kesimpulan: Studi ini menyimpulkan bahwa, *Spherical Equivalent* memiliki hubungan berbanding lurus terhadap sensitivitas kontras. Namun tidak ditemukannya hubungan antara *Visual acuity* dalam logMar terhadap hasil sensitivitas kontras.

Kata Kunci: *visual acuity*, *spherical equivalent*, kontras sensitivitas, *preferential looking*, *Gabor Patch*, anak prasekolah

ABSTRACT

THE CORRELATION OF VISUAL ACUITY AND SPHERICAL EQUIVALENT TO THE PERCENTAGE OF CONTRAST SENSITIVITY IN PREFERENTIAL LOOKING EXAMINATION WITH HEMISPATIAL PATCH GABORS COMPUTER BASED ON PRESCHOOL CHILDREN

Background: Contrast Sensitivity is the standard indicator for examination of eye function in children. Eye function examination in children requires different method and technique based on children's condition. Currently, eye examination in children use LEA chart, E-Chart, and Snellen Chart. The subject of these examination needs adequate cognitive function, therefore, these test are harder to be done. Preferential Looking and Computer based Hemi-Spatial Gabor Patch are hoped to be able to examine the eye function of the children in any condition, including the children's Visual Acuity andSpherical Equivalent. The accuracy of this Contrast Sensitivity examination will be quantitatively measured by standarized value.

Purpose: The aim of this study is to understand the correlation between Visual Acuity and Spherical Equivalent to the Contrast Sensitivty result ini Prefential Looking examination with Gabor Patch in pre-school children.

Method: This study is analytic observational study with a quantitative cross sectional design. Researchers conducted preferential looking examinations on preschool children (3-6 years) with computer-based hemi-spatial gabor patches that had previously been standardized (LEA Chart) and refracted with a portable autorefractometer. The results are then analyzed quantitatively according to Visual Acuity and Spherical Equivalent.

Result: After the study was carried out, the average contrast sensitivity was 0.56 ± 0.34, the spherical equivalent was 0.26 ± 0.56, and the visual acuity (LogMAR) was 0.1 ± 0.1. Significant results were obtained when opposing the spherical equivalent of contrast sensitivity (p-value = 0.002) with positive correlation (r = 0.581). However, the correlation between visual acuity (LogMAR) to contrast sensitivity was found negative (r = -0.273) with insignificant results (p-value = 0.197).

Conclusion: This study concludes that Spherical Equivalent has a linear relationship with contrast sensitivity. But not found the relationship between Visual acuity in logMar to the results of contrast sensitivity.

Keyword: visual acuity, spherical equivalent, contrast sensitivity, preferential looking, Gabor Patch, preschoolers.