REVIEW OF LITERATURE
AETIOLOGY OF MYOPIA -

Myopia was first described by Kepler (1611) and it was Plempius (1632) who first contributed it to the lengthening of the eye ball, e.g., axial myopia. He did it by examining the myopic eyes anatomically.

Later other causes of myopia were also found like index and curvature myopia. But it was found that the majority of cases and even more so the ones with a higher degree of myopia belonged to the category of the axial myopia.

Donders (1866) established the pathological basis of myopia and also established its clinical manifestations.

Myopia was later classified into simple and pathological myopia depending upon the complications and progression of the myopia.

Bethesda (1969-1970) reported in the U.S. Model Reporting Area that it is the axial myopia which is responsible for the higher degree of myopia and also for most of its complications.

Duke Elder S. (1970) stated that it is the axial type of myopia which is responsible for the myopia of more than 6.00 D and the degenerative type of myopia is associated with the myopia of above 6.00 D.

Curtin B.J. (1971) supported his views.
INCIDENCE OF MYOPIA -

Number of authors have attempted to determine the frequency of myopia in the general population. Some of the researches done in the occidental world are given below.

Guttman (1902) in his study of 42,900 eyes found the incidence of myopia to be 7.5%.

Blegvad O. (1927) reported the incidence to be 4.99% in his study of 45,000 eyes.

Betsch A. (1929) in his work on 12,000 eyes found the incidence to be 12.55%.

Kronfeld P.C. and Denvey C. (1931) in their study of 2229 eyes found that the incidence of myopia was 14.58%.

Arruga H. (1933) in 45,000 eyes reported the incidence to be as high as 17.6%.

In 5,121 eyes of enlisted men, Stroemberg E. (1936) reported the incidence to be between 10 and 20% in the general population.

It may be interesting to note that the researches in the oriental region have shown a greater incidence of myopia in the general population.

Takahashi T. (1939) reported an incidence of 31.1% in 5,049 people.
Kirisawa N., Oyama N. and Sato T. (1941) reported the incidence to be 22.7% in the children of grade 4th to 8th and 44.66% in the older children in the study of school going children.

Brown and Kronfeld (1929) found that the refraction changes towards the myopic side with the growing age. This view was supported by most of the above authors. Marked changes in refraction were not noted after the age of 17 years.

As regards sex preference it was found by Hertel E. (1903) that 71.5% myopes were male. This work was supported by the works of Blegvad (1927) and Guttman (1902) but to some lesser degree.

Hirsch M.J. (1953) found in 2,048 myopes the percentage of males to be 53.4%.

An interesting point was noted by Kronfeld and Denvey (1931), Betsch (1929), Kirisawa and co-authors (1941) and by Hertel (1903) that in the lower myopia it was the male population which was dominant and in the high myopia it was the females who were dominant.

Betsch (1929) and Hertel (1903) also reported that the patients with myopia of over 8.00 D ranged from only 6.1% to 17.7% while the myopes of 4.00 D and under represented the 61%...
to 92.4% of the whole group.

PERIPHERAL RETINA IN MYOPIA -

It has been established by the work of several authors that the retina is extensively involved in the myopes and more so with the increase in the degree of myopia. Of this the retinal periphery has its own importance. It has been established that certain changes here predispose the eye to retinal detachment.

Schepens C.L. (1952) found that the routine examination of the retinal periphery has its own importance for the diagnostic purposes.

Oken E. (1960) supported his views in his study and found that sufficient retinal pathology can be observed in the supposedly normal eyes.

Rutnin (1962) was also of the same opinion.

O'Malley P.F. and co-authors (1965) in their study of paving stone degeneration in retina have found the incidence of this as well as other lesions to be higher in myopes than in the general population.

Dumas and Schepens C.L. (1966) in their study have established the importance of retinal periphery examination in the myopic eyes to detect the lesions in this area.
Rutnin and Schepens C.L. (1967) in their study also reached the same conclusion and stressed the need of routine check-up of the retinal periphery in the myopes more so in those of higher degree.

Shukla M. and Ahuja O.P. (1982-1983) in their two different studies also stressed the same point. They found in their study of 768 myopes that there was a significant rise in the retinal pathology especially in the periphery with the rise in the degree of myopia.

**MYOPIA AND RETINAL DETACHMENT**

Several authors have established the fact that the retinal detachment's incidence is higher in the myopes than in the general population.

Hertel (1903) have noted 1% cases of retinal detachment in his series and sites the incidence noted by others between 0.71 and 2.3%.

Blegvad (1927) have found it to be 1.2%.

The incidence rapidly increases with the increase in the degree of myopia.

Von Hippel (1900) observed that the incidence of retinal detachment was 6.7% in the 1,747 eyes of myopia more than 10.00 D.
Guttman (1902) found it to be 3.2% in the 1,000 myopes of more than 6.00 D.

Some other authors have also tried to compute the incidence of myopia in cases of retinal detachment. Arruga (1903) reports myopia to be 58.4% in 682 eyes with retinal detachment.

Gonin (1934) found the myopia to be 79.0% in 300 eyes with retinal detachment.

Shapland in his study (1934) found that in his study of 425 eyes with retinal detachment the incidence of myopia was 62.0%.

Dunnington (1934) reports the incidence of myopia to be 61.9% in his study of 150 eyes with retinal detachment.

Binkhorst (1940) in his study of 473 eyes with retinal detachment found that the incidence of myopia stood at 48%.

Thiel (1959) conducted a study on 602 eyes with retinal detachment and came to the conclusion that the incidence of myopia was 53.3%.

Thus all these authors have very clearly demonstrated that the incidence of retinal detachment is higher in myopes and also that the incidence of myopia was also higher in cases of retinal detachment. Also it is established that it is the
peripheral zone of the retina which is more to the changes which bring about the retinal detachment.