Sample size estimation

The following formula was used for calculating the adequate sample size in the study

$$n = \frac{Z^2 P(1-P)}{d^2}$$

Here, n= sample size, z = normal standard variate, P= prevalence (obtained from a study conducted by the other researchers) and d = degree of precision (corresponding to effect size).

However, in the previous study prevalence of pain/discomfort among T2D population in Bangladesh was 58% [21]. We assume p= 0.58, q=1-p=0.42, Z = 1.96 (at 95% Confidence Interval), and d = 0.03 (at 3% standard error). Using the above mentioned information, the estimated sample size is 1039 (3.8416 x 0.58 x 0.42/0.0009=1039). This basic sample size was adjusted for design effect of 1.5 and the required sample size was therefore $n = 1039 \times 1.5 = 1558$. However, assuming a non-response rate of 15%, the final sample size was 1558/0.85 = **1832.**