

#####Binary Logistic Regression Analysis#####Myopia#####

```
> b<-glm2(as.factor(myopia)~relevel(as.factor(FamMemGroup),ref="Below 5")
+ +relevel(as.factor(EarningGroup),ref="Below 3")
+ +relevel(as.factor(IncomeGroup),ref="Below 100000")
+ +as.factor(m3a_resp)+as.factor(m3b_ocu_inf)+as.factor(m3b_anthis)
+ +relevel(as.factor(m3a1_wcdc),ref="4")
+ +as.factor(m3_otl6m)+as.factor(m4d1_wg)+as.factor(m4d1_wgcos)
+
+as.factor(m4d1_wgrer)+as.factor(m4d1_wgthep)+as.factor(m4d1_wcl)+as.factor(m4d1_wcl
cos)
+
+as.factor(m4d1_wclrer)+as.factor(m4d1_wclthep)+as.factor(m4d1_tcls)+as.factor(m4d1_tcl
r)
+ +as.factor(m4d1_tclthep)+as.factor(m4d2_cata)
+ +relevel(as.factor(ddts),ref="1")
+ +as.factor(m4d4_cyc)
+ +as.factor(m4d4_other),
+ data=a,
+ family=binomial(link='logit')
+)
> summary(b)
```

Call:

```
glm2(formula = as.factor(myopia) ~ relevel(as.factor(FamMemGroup),
ref = "Below 5") + relevel(as.factor(EarningGroup), ref = "Below 3") +
relevel(as.factor(IncomeGroup), ref = "Below 100000") + as.factor(m3a_resp) +
as.factor(m3b_ocu_inf) + as.factor(m3b_anthis) + relevel(as.factor(m3a1_wcdc),
ref = "4") + as.factor(m3_otl6m) + as.factor(m4d1_wg) + as.factor(m4d1_wgcos) +
as.factor(m4d1_wgrer) + as.factor(m4d1_wgthep) + as.factor(m4d1_wcl) +
as.factor(m4d1_wclcos) + as.factor(m4d1_wclrer) + as.factor(m4d1_wclthep) +
as.factor(m4d1_tcls) + as.factor(m4d1_tclr) + as.factor(m4d1_tclthep) +
as.factor(m4d2_cata) + relevel(as.factor(ddts), ref = "1") +
as.factor(m4d4_cyc) + as.factor(m4d4_other), family = binomial(link = "logit"),
data = a)
```

Coefficients:

	Estimate	Std. Error
(Intercept)	-8.57567	2.64339
relevel(as.factor(FamMemGroup), ref = "Below 5")5-7	-0.21914	0.54912
relevel(as.factor(FamMemGroup), ref = "Below 5")8 or More	0.90274	0.74030
relevel(as.factor(EarningGroup), ref = "Below 3")3-7	-0.52188	0.61023
relevel(as.factor(EarningGroup), ref = "Below 3")8 or More	4.92016	1.79149
relevel(as.factor(IncomeGroup), ref = "Below 100000")100000-200000	-0.75058	0.55116
relevel(as.factor(IncomeGroup), ref = "Below 100000")200001-400000	-1.34469	0.76240
relevel(as.factor(IncomeGroup), ref = "Below 100000")400001 or More	-0.01894	0.98207
as.factor(m3a_resp)2	0.72326	0.72185
as.factor(m3b_ocu_inf)2	1.32415	0.70500
as.factor(m3b_anthis)2	-1.08399	0.60362
relevel(as.factor(m3a1_wcdc), ref = "4")1	-0.63699	0.73991

relevel(as.factor(m3a1_wcdc), ref = "4")2	0.81399	0.62437
relevel(as.factor(m3a1_wcdc), ref = "4")3	-0.43621	0.65877
as.factor(m3_otl6m)2	1.05934	0.55236
as.factor(m4d1_wg)2	3.28579	0.92491
as.factor(m4d1_wgcos)2	-0.25765	0.58116
as.factor(m4d1_wgrer)2	2.48354	0.65614
as.factor(m4d1_wgthep)2	3.12517	0.70693
as.factor(m4d1_wcl)2	0.11131	1.28089
as.factor(m4d1_wclcos)2	2.14988	1.42983
as.factor(m4d1_wclrer)2	1.76849	1.50602
as.factor(m4d1_wclthep)2	2.82418	1.57316
as.factor(m4d1_tcls)2	-1.36497	1.31398
as.factor(m4d1_tclr)2	1.77222	1.58623
as.factor(m4d1_tclthep)2	-1.56118	1.43913
as.factor(m4d1_tclthep)3	-12.93357	1455.39897
as.factor(m4d2_cata)2	-3.03961	0.61992
relevel(as.factor(ddts), ref = "1")2	-1.79553	0.86617
relevel(as.factor(ddts), ref = "1")3	-1.40286	0.81308
relevel(as.factor(ddts), ref = "1")5	-14.95202	1455.39845
as.factor(m4d4_cyc)2	1.14933	0.65579
as.factor(m4d4_other)2	0.54416	0.51715
	z value Pr(> z)	
(Intercept)	-3.244	0.001178 **
relevel(as.factor(FamMemGroup), ref = "Below 5")5-7	-0.399	0.689834
relevel(as.factor(FamMemGroup), ref = "Below 5")8 or More	1.219	0.222681
relevel(as.factor(EarningGroup), ref = "Below 3")3-7	-0.855	0.392430
relevel(as.factor(EarningGroup), ref = "Below 3")8 or More	2.746	0.006025 **
relevel(as.factor(IncomeGroup), ref = "Below 100000")100000-200000	-1.362	0.173255
relevel(as.factor(IncomeGroup), ref = "Below 100000")200001-400000	-1.764	0.077773 .
relevel(as.factor(IncomeGroup), ref = "Below 100000")400001 or More	-0.019	0.984611
as.factor(m3a_resp)2	1.002	0.316369
as.factor(m3b_ocu_inf)2	1.878	0.060351 .
as.factor(m3b_anthis)2	-1.796	0.072525 .
relevel(as.factor(m3a1_wcdc), ref = "4")1	-0.861	0.389292
relevel(as.factor(m3a1_wcdc), ref = "4")2	1.304	0.192337
relevel(as.factor(m3a1_wcdc), ref = "4")3	-0.662	0.507870
as.factor(m3_otl6m)2	1.918	0.055133 .
as.factor(m4d1_wg)2	3.553	0.000382 ***
as.factor(m4d1_wgcos)2	-0.443	0.657522
as.factor(m4d1_wgrer)2	3.785	0.000154 ***
as.factor(m4d1_wgthep)2	4.421	9.84e-06 ***
as.factor(m4d1_wcl)2	0.087	0.930750
as.factor(m4d1_wclcos)2	1.504	0.132687
as.factor(m4d1_wclrer)2	1.174	0.240283
as.factor(m4d1_wclthep)2	1.795	0.072617 .
as.factor(m4d1_tcls)2	-1.039	0.298896
as.factor(m4d1_tclr)2	1.117	0.263887
as.factor(m4d1_tclthep)2	-1.085	0.278006
as.factor(m4d1_tclthep)3	-0.009	0.992910
as.factor(m4d2_cata)2	-4.903	9.43e-07 ***

relevel(as.factor(ddts), ref = "1")2	-2.073 0.038177 *
relevel(as.factor(ddts), ref = "1")3	-1.725 0.084460 .
relevel(as.factor(ddts), ref = "1")5	-0.010 0.991803
as.factor(m4d4_cyc)2	1.753 0.079671 .
as.factor(m4d4_other)2	1.052 0.292699

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

(Dispersion parameter for binomial family taken to be 1)

Null deviance: 480.12 on 352 degrees of freedom
 Residual deviance: 158.32 on 320 degrees of freedom
 (1 observation deleted due to missingness)
 AIC: 224.32

Number of Fisher Scoring iterations: 14

> exp(cbind(coef(b), confint(b)))
 Waiting for profiling to be done...

	2.5 %		
(Intercept)	1.886398e-04	6.751839e-07	
relevel(as.factor(FamMemGroup), ref = "Below 5")5-7	8.032066e-01	2.678059e-01	
relevel(as.factor(FamMemGroup), ref = "Below 5")8 or More	2.466357e+00		
5.854315e-01			
relevel(as.factor(EarningGroup), ref = "Below 3")3-7	5.934064e-01	1.749432e-01	
relevel(as.factor(EarningGroup), ref = "Below 3")8 or More	1.370241e+02		
5.159882e+00			
relevel(as.factor(IncomeGroup), ref = "Below 100000")100000-200000	4.720930e-01		
1.545777e-01			
relevel(as.factor(IncomeGroup), ref = "Below 100000")200001-400000	2.606192e-01		
5.285003e-02			
relevel(as.factor(IncomeGroup), ref = "Below 100000")400001 or More	9.812360e-01		
1.351822e-01			
as.factor(m3a_resp)2	2.061142e+00	5.134735e-01	
as.factor(m3b_ocu_inf)2	3.758985e+00	1.000140e+00	
as.factor(m3b_anthis)2	3.382431e-01	9.891997e-02	
relevel(as.factor(m3a1_wcdc), ref = "4")1	5.288832e-01	1.202971e-01	
relevel(as.factor(m3a1_wcdc), ref = "4")2	2.256893e+00	6.725684e-01	
relevel(as.factor(m3a1_wcdc), ref = "4")3	6.464801e-01	1.722502e-01	
as.factor(m3_otl6m)2	2.884461e+00	1.013162e+00	
as.factor(m4d1_wg)2	2.673014e+01	4.742719e+00	
as.factor(m4d1_wgcos)2	7.728670e-01	2.516296e-01	
as.factor(m4d1_wgrer)2	1.198360e+01	3.536680e+00	
as.factor(m4d1_wgthep)2	2.276369e+01	6.213658e+00	
as.factor(m4d1_wcl)2	1.117743e+00	8.217369e-02	
as.factor(m4d1_wclcos)2	8.583838e+00	5.333040e-01	
as.factor(m4d1_wclrer)2	5.861988e+00	3.453413e-01	
as.factor(m4d1_wclthep)2	1.684717e+01	7.388452e-01	
as.factor(m4d1_tcls)2	2.553877e-01	2.169437e-02	

as.factor(m4d1_tclr)2	5.883889e+00	3.084817e-01
as.factor(m4d1_tclthep)2	2.098877e-01	1.502670e-02
as.factor(m4d1_tclthep)3	2.415590e-06	NA
as.factor(m4d2_cata)2	4.785331e-02	1.299157e-02
relevel(as.factor(ddts), ref = "1")2	1.660399e-01	2.886186e-02
relevel(as.factor(ddts), ref = "1")3	2.458920e-01	4.888081e-02
relevel(as.factor(ddts), ref = "1")5	3.209363e-07	NA
as.factor(m4d4_cyc)2	3.156075e+00	9.047882e-01
as.factor(m4d4_other)2	1.723154e+00	6.297207e-01
	97.5 %	
(Intercept)	2.495851e-02	
relevel(as.factor(FamMemGroup), ref = "Below 5")5-7		2.350491e+00
relevel(as.factor(FamMemGroup), ref = "Below 5")8 or More		1.093281e+01
relevel(as.factor(EarningGroup), ref = "Below 3")3-7		1.945744e+00
relevel(as.factor(EarningGroup), ref = "Below 3")8 or More		6.663133e+03
relevel(as.factor(IncomeGroup), ref = "Below 100000")100000-200000		1.366631e+00
relevel(as.factor(IncomeGroup), ref = "Below 100000")200001-400000		1.080245e+00
relevel(as.factor(IncomeGroup), ref = "Below 100000")400001 or More		6.658555e+00
as.factor(m3a_resp)2	8.783696e+00	
as.factor(m3b_ocu_inf)2	1.619323e+01	
as.factor(m3b_anthis)2	1.072167e+00	
relevel(as.factor(m3a1_wcdc), ref = "4")1		2.229445e+00
relevel(as.factor(m3a1_wcdc), ref = "4")2		7.935457e+00
relevel(as.factor(m3a1_wcdc), ref = "4")3		2.330858e+00
as.factor(m3_otl6m)2	8.976045e+00	
as.factor(m4d1_wg)2	1.894936e+02	
as.factor(m4d1_wgcos)2	2.519787e+00	
as.factor(m4d1_wgrer)2	4.737583e+01	
as.factor(m4d1_wgthep)2	1.012521e+02	
as.factor(m4d1_wcl)2	1.295725e+01	
as.factor(m4d1_wclcos)2	1.575396e+02	
as.factor(m4d1_wclrer)2	1.376832e+02	
as.factor(m4d1_wclthep)2	3.943336e+02	
as.factor(m4d1_tcls)2	4.326866e+00	
as.factor(m4d1_tclr)2	1.684430e+02	
as.factor(m4d1_tclthep)2	5.415047e+00	
as.factor(m4d1_tclthep)3	3.941317e+120	
as.factor(m4d2_cata)2	1.506197e-01	
relevel(as.factor(ddts), ref = "1")2	8.884481e-01	
relevel(as.factor(ddts), ref = "1")3	1.222854e+00	
relevel(as.factor(ddts), ref = "1")5	6.639623e+120	
as.factor(m4d4_cyc)2	1.194714e+01	
as.factor(m4d4_other)2	4.865013e+00	