

Appendix 7 (as supplied by the authors): Full regression model outputs from sub-analysis of the Terres-Cries-de-la-Baies-James adults from both multiply imputed and complete-case analysis models.

Table A [a]

Multiply imputed linear regression model output measuring the association between geographical zones and Glasgow Coma Scores in adults.

GCS	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
Age category						
(25-44)	.1495839	.5342778	0.28	0.780	-.9157998	1.214968
(45-64)	.1352104	.774715	0.17	0.862	-1.405961	1.676382
(65+)	.046664	1.546537	0.03	0.976	-3.086155	3.179483
Community						
Costal	.1316434	.5192619	0.25	0.801	-.9033846	1.166671
Remote	-2.30882	.9175332	-2.52	0.015	-4.147157	-.470482
Alcohol						
Gender(Male)	-1.194215	.5110665	-2.34	0.022	-2.213757	-.1746734
	-.5769491	.5342684	-1.08	0.284	-1.643619	.4897203
Mechanism						
Assault	1.009533	.8307405	1.22	0.229	-.6551392	2.674206
Off-road	1.518098	1.044063	1.45	0.151	-.5688823	3.605077
Other	.6060946	1.002038	0.60	0.548	-1.409113	2.621302
Motor vehicle	.5484793	.7785064	0.70	0.484	-1.006019	2.102977

Output for linear regression model assessing the association between geographical zones and initial injury severity, adjusted for all the covariates listed. The referent for age was the 15-24 age group and for mechanism of injury was falls. See below for the complete-case analysis. The estimates for the years of injury and the intercept are omitted for brevity.

Table A (b)

Complete-case linear regression model output measuring the association between geographical zones and Glasgow Coma Score in adults.

GCS	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
Age category						
(25-44)	.2930595	.5639484	0.52	0.605	-.8308881	1.417007
(45-65)	.4995447	.8209905	0.61	0.545	-1.136687	2.135776
(65+)	.0192051	1.629347	0.01	0.991	-3.228078	3.266488
Community						
Coastal	.1449439	.5351414	0.27	0.787	-.9215914	1.211479
Remote	-2.822508	.9686019	-2.91	0.005	-4.752929	-.8920876
Alcohol(Yes)	-1.185463	.5055461	-2.34	0.022	-2.193015	-.1779115
Gender(male)	-.5697337	.5430421	-1.05	0.298	-1.652015	.5125476
Mechanism						
Assault	1.267178	.8421157	1.50	0.137	-.4111562	2.945512
Off-road	2.302888	1.109783	2.08	0.042	.0910943	4.514682
Other	.6274106	1.075344	0.58	0.561	-1.515747	2.770568
Motor vehicle	.6980587	.8279417	0.84	0.402	-.9520267	2.348144

Table B (a)

Multiply imputed linear regression model output measuring the association between protective equipment use and initial Glasgow Coma Score in adults.

GCS	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
Age category						
(25-44)	.5847984	.7510519	0.78	0.441	-.9331342	2.102731
(45-64)	.6478025	1.231495	0.53	0.602	-1.841145	3.13675
Gender(Male)	.5265729	.6678019	0.79	0.435	-.823105	1.876251
Protection	1.195002	.7420395	1.61	0.115	-.304716	2.69472
Alcohol	-.1970675	.7334449	-0.27	0.790	-1.679415	1.28528
Mechanism(MVC)	.1286438	.7010831	0.18	0.855	-1.288298	1.545586

Output for linear regression model assessing the association of protective equipment with initial injury severity and adjusted for the covariates listed. This model was only used on patients that had a mechanism of injury where protective equipment could be used (e.g.: off-road vehicles and motor vehicle collisions). There were no patients that were 65 years or older or that had another mechanism of injury where protection could be worn. The referent group for age is 15-24 years and is off-road vehicles (all-terrain vehicles and snowmobiles) for the mechanism of injury variable. The estimates for the intercept and the year of injury covariates are omitted for brevity. See below for the complete-case analysis.

Table B (b)

Complete-case linear regression model output measuring the association between protective equipment use and initial Glasgow Coma Score in adults.

GCS	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
Age category						
(25-44)	.4084069	.8728054	0.47	0.643	-1.376681	2.193494
(45-64)	.4660294	1.278243	0.36	0.718	-2.148271	3.08033
Gender (Male)	.0038971	.7570458	0.01	0.996	-1.544435	1.552229
Protection	1.544804	.854958	1.81	0.081	-.2037815	3.293389
Alcohol	-.4962255	.8079181	-0.61	0.544	-2.148603	1.156152
Mechanism (MVC)	.3927941	.8274541	0.47	0.639	-1.29954	2.085128

Table C (a)

Multiply imputed proportional odds logistic regression model output measuring the association between protective equipment use and Glasgow Outcome Score 6 months after injury in adults.

GOS	Odds Ratio	Std. Err.	z	P> z	[95% Conf. Interval]
Age category					
(25-44)	.6834096	.5384292	-0.48	0.629	.1459002 3.201153
(45-64)	.1085947	.1503728	-1.60	0.109	.0071967 1.63863
Gender (Male)	1.596273	1.083027	0.69	0.491	.4222703 6.034258
Protection	4.790878	3.551376	2.11	0.035	1.120566 20.48296
Alcohol	1.613462	1.124198	0.69	0.492	.4117886 6.321832
Mechanism (MVC)					
	1.594291	1.245107	0.60	0.550	.3449829 7.3678
Comorbidity	1.15386	1.217273	0.14	0.892	.145939 9.122938
Polytrauma	1.010633	.8354966	0.01	0.990	.19994 5.108427

Output for proportional odds logistic regression measuring the association between protective equipment use and functional outcome at 6 months as measured on the Glasgow Outcome Scores and adjusted for all of the listed covariates. This model was only used on patients that had a mechanism of injury where protective equipment could be used (e.g.: off-road vehicles and motor vehicle collisions). There were no patients that were 65 years or older or that had another mechanism of injury where protection could be used. The proportional odds model was used since the proportionality assumption was met after running a cumulative odds logistic model. The referent group for age is 15-24 years and is off-road vehicles (all-terrain vehicles and snowmobiles) for the mechanism of injury variable. The estimates for the intercept and the year of injury covariates are omitted for brevity. See below for the complete-case analysis.

Table C (b)

Complete-case proportional odds logistic regression model output measuring the association between protective equipment use and Glasgow Outcome Score 6 months after injury in adults.

GOS	Odds Ratio	Std. Err.	z	P> z	[95% Conf. Interval]	
Age category						
(25-44)	.6065034	.5104854	-0.59	0.552	.1165169	3.157022
(45-64)	.0859972	.1233464	-1.71	0.087	.0051713	1.430108
Gender (Male)	2.011829	1.474879	0.95	0.340	.4781587	8.464667
Protection	7.513794	6.36555	2.38	0.017	1.428028	39.53501
Alcohol	1.286902	.9760241	0.33	0.739	.2910509	5.690124
Mechanism (MVC)	2.391205	2.092829	1.00	0.319	.4301594	13.29244
Comorbidity	1.418903	1.523686	0.33	0.745	.1729386	11.64162
Polytrauma	.6139271	.5490412	-0.55	0.585	.1063846	3.542868

Table D (a)

Multiply imputed proportional odds logistic regression model measuring the association between initial Glasgow Coma Score and Glasgow Outcome Score 6 months after injury in adults.

GOS	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
Age category						
(25-44)	-1.046684	.5584644	-1.87	0.062	-2.1478	.0544313
(45-64)	-2.359514	.8682029	-2.72	0.007	-4.066316	-.6527119
(65+)	-4.866583	2.067581	-2.35	0.022	-9.009508	-.7236566
Comorbidity	.5908515	.784323	0.75	0.453	-.960433	2.142136
Alcohol	.2214743	.4914877	0.45	0.653	-.7447098	1.187658
Gender(male)	.9862258	.593194	1.66	0.099	-.1874487	2.1599
Mechanism						
Assault	-.4603804	.9699366	-0.47	0.637	-2.395316	1.474555
Off-road	-1.037653	1.069292	-0.97	0.335	-3.168586	1.093281
Other	-.3991143	1.01703	-0.39	0.696	-2.415609	1.61738
Motor vehicle	-.277041	.9184912	-0.30	0.764	-2.102233	1.548151
Polytrauma	-.4034144	.498491	-0.81	0.419	-1.383383	.5765542
GCS	.5861763	.14433	4.06	0.000	.2999657	.8723868

Output for proportional odds logistic regression measuring the association between initial Glasgow Coma Score and functional outcome at 6 months as measured on the Glasgow Outcome Score and adjusted for all of the listed covariates (and year of injury). The proportional odds model was used since the proportionality assumption was met after running a cumulative odds logistic model. The referent group for age is 15-24 years and is falls for the mechanism of injury variable. The intercept and year of injury estimates are omitted for brevity. See below for the complete-analysis regression output. Log-odds ratios are provided in this output.

Table D (b)

Complete-case proportional odds logistic regression model measuring the association between initial Glasgow Coma Score and Glasgow Outcome Score 6 months after injury in adults.

GOS	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
Age category						
(25-44)	-1.009255	.5785594	-1.74	0.081	-2.14321	.124701
(45-64)	-2.84667	1.052202	-2.71	0.007	-4.908948	-.7843916
(65+)	-6.100564	1.930666	-3.16	0.002	-9.8846	-2.316528
Comorbidity	.5372575	.8203359	0.65	0.513	-1.070571	2.145086
Alcohol(Yes)	.1807102	.5167427	0.35	0.727	-.8320869	1.193507
Gender(Male)	1.171079	.5820868	2.01	0.044	.0302101	2.311948
Mechanism						
Assault	-.7583615	.8917988	-0.85	0.395	-2.506255	.9895319
Off-road	-1.442851	1.004124	-1.44	0.151	-3.410899	.5251961
Other	-.6681344	1.12818	-0.59	0.554	-2.879327	1.543058
Motor vehicle	-.4470825	.9099224	-0.49	0.623	-2.230498	1.336333
Polytrauma	-.3995757	.5459089	-0.73	0.464	-1.469538	.670386
GCS	.6828095	.1524424	4.48	0.000	.3840279	.9815913

Table E (a)

Multiply imputed Poisson regression model measuring the association between mechanism of injury and the use of rehabilitation services in adults.

Rehab	Coef.	Robust Std. Err.	z	P> z	[95% Conf. Interval]	
Age category						
(25-44)	.4861944	.4264952	1.14	0.255	-.3523197	1.324709
(45-64)	.9390032	.5579249	1.68	0.093	-.158045	2.036051
(65+)	.8912483	.9659215	0.92	0.359	-1.02782	2.810316
Comorbidity	.0543161	.3430599	0.16	0.874	-.6202092	.7288413
Gender(Male)	-.2766505	.3031753	-0.91	0.362	-.8726788	.3193778
Mechanism						
Assault	.2382738	.5733068	0.42	0.678	-.8956887	1.372236
Off-road	.1124868	.7947154	0.14	0.888	-1.450518	1.675492
Other	.4097496	.5193544	0.79	0.431	-.6166818	1.436181
Motor vehicle	1.069566	.5182807	2.06	0.042	.0389449	2.100186
GCS	-.2030924	.0761935	-2.67	0.008	-.3534298	-.0527551
Community						
Coastal	-.0383626	.3084818	-0.12	0.901	-.6438167	.5670914
Remote	-.1696769	.6492008	-0.26	0.794	-1.447674	1.10832

Output for Poisson regression model to estimate the association between traumatic brain injury patients' mechanism of injury and their probability of receiving rehabilitation services. A robust variance estimator was used to estimate a risk ratio since the outcome was common.[1] The referent group for the age group is 15-24 years of age and for mechanism of injury is falls. The estimates for the year of injury and the intercept are omitted for brevity. Log-risk ratios are provided in this output.

Reference

1. Zou G. A modified poisson regression approach to prospective studies with binary data. *Am J Epidemiol* 2004;159:702-6.

Table E (b)

Complete-case Poisson regression model measuring the association between mechanism of injury and the use of rehabilitation services in adults.

Rehab	Coef.	Robust Std. Err.	z	P> z	[95% Conf. Interval]	
Age Category						
(25-44)	.7111967	.4827668	1.47	0.141	-.2350088	1.657402
(45-64)	1.346545	.6278335	2.14	0.032	.1160145	2.577077
(65+)	1.437507	.9348365	1.54	0.124	-.3947387	3.269753
Comorbidity	-.095115	.3380095	-0.28	0.778	-.7576024	.5673704
Gender(Male)	-.1380785	.3344147	-0.41	0.680	-.7935194	.5173622
Mechanism						
Assault	.5446015	.5383662	1.01	0.312	-.5105768	1.59978
Off-road	.2401137	.7313095	0.33	0.743	-1.193227	1.673454
Other	.64887	.5979313	1.09	0.278	-.5230538	1.820794
Motor vehicle	1.538424	.4553325	3.38	0.001	.6459893	2.43086
GCS	-.2318583	.0725399	-3.20	0.001	-.3740345	-.0896832
Community						
Coastal	-.1145462	.305718	-0.37	0.708	-.7137423	.48465
Remote	-.0340984	.642393	-0.05	0.958	-1.293166	1.224969

Table F (a)

Multiply imputed Poisson regression model measuring the association between mechanism of injury and alcohol intoxication at the time of injury in adults.

Alcohol	Coef.	Robust Std. Err.	z	P> z	[95% Conf. Interval]	
Age category						
(25-44)	-.2062701	.1817863	-1.13	0.257	-.5632147	.1506744
(45-64)	-1.075992	.4151679	-2.59	0.010	-1.89005	-.261934
Gender(Male)	-.0750727	.1764657	-0.43	0.671	-.4213611	.2712157
Mechanism						
Assault	.4787974	.3351488	1.43	0.154	-.1792956	1.13689
Off-road	.2227497	.4173463	0.53	0.594	-.5984421	1.043941
Other	.1495084	.3804622	0.39	0.694	-.5976883	.8967051
Motor vehicle	.3070348	.3365935	0.91	0.362	-.3533604	.96743
Community						
Coastal	.0076607	.1850372	0.04	0.967	-.3556648	.3709862
Remote	-.3098327	.4227104	-0.73	0.465	-1.143781	.5241152

Output for Poisson regression model to estimate the association between traumatic brain injury patients' mechanism of injury and being intoxicated with alcohol at the time of injury. A robust variance estimator was used to estimate a risk ratio since the outcome was common.[1] The referent group for the age group is 15-24 years of age and for mechanism of injury is falls. No patients 65 years or older were intoxicated at the time of injury. See below for the complete-case analysis regression output. The estimates for the year of injury and the intercept are omitted for brevity. Log-risk ratios are provided in this output.

Reference

1. Zou G. A modified poisson regression approach to prospective studies with binary data. *Am J Epidemiol* 2004;159:702-6.

Table F (b)

Complete-case Poisson regression model measuring the association between mechanism of injury and alcohol intoxication at the time of injury in adults.

Alcohol	Coef.	Robust Std. Err.	z	P> z	[95% Conf. Interval]	
Age Category						
(25-44)	-.1785693	.19439	-0.92	0.358	-.5595668	.2024282
(45-64)	-1.030997	.4234852	-2.43	0.015	-1.861013	-.2009812
Gender(Male)	-.0977746	.1896799	-0.52	0.606	-.4695404	.2739913
Mechanism						
Assault	.5406546	.3643645	1.48	0.138	-.1734866	1.254796
Off-road	.3352614	.4372242	0.77	0.443	-.5216822	1.192205
Other	.1998267	.4929524	0.41	0.685	-.7663423	1.165996
Motor vehicle	.3601775	.3913754	0.92	0.357	-.4069042	1.127259
Community						
Coastal	-.0021408	.1791631	-0.01	0.990	-.353294	.3490123
Remote	-.3729487	.4752533	-0.78	0.433	-1.304428	.5585307