

Supplementary tables

Supplementary Table 1. Hazard ratios (and 95% confidence intervals) for COVID 19 related mortality between 2 March 2020 and 15 May 2020 in England and Wales for non-Christian religious groups compared to Christians, stratified by sex. males

	Model 1	Model 2	Model 3	Model 4
	+Age	+Geography Variables	+Socio economic status variables	+Household variables
No religion	0.82 (0.79-0.86)	0.82 (0.78-0.86)	0.85 (0.82-0.89)	0.84 (0.80-0.88)
Buddhist	1.19 (0.92-1.54)	1.02 (0.79-1.31)	1.09 (0.85-1.42)	1.07 (0.83-1.39)
Hindu	1.88 (1.69-2.09)	1.32 (1.19-1.47)	1.39 (1.24-1.56)	1.44 (1.28-1.61)
Jewish	2.14 (1.89-2.42)	1.54 (1.36-1.74)	1.84 (1.63-2.09)	1.89 (1.67-2.14)
Muslim	2.49 (2.32-2.67)	1.67 (1.55-1.79)	1.51 (1.38-1.64)	1.52 (1.39-1.66)
Sikh	1.54 (1.32-1.81)	1.18 (1.00-1.38)	1.13 (0.95-1.33)	1.20 (1.02-1.42)
Other	0.90 (0.69-1.17)	0.77 (0.59-1.00)	0.80 (0.61-1.04)	0.78 (0.60-1.02)
Religion not stated	0.88 (0.83-0.93)	0.87 (0.82-0.92)	0.86 (0.81-0.90)	0.84 (0.80-0.89)

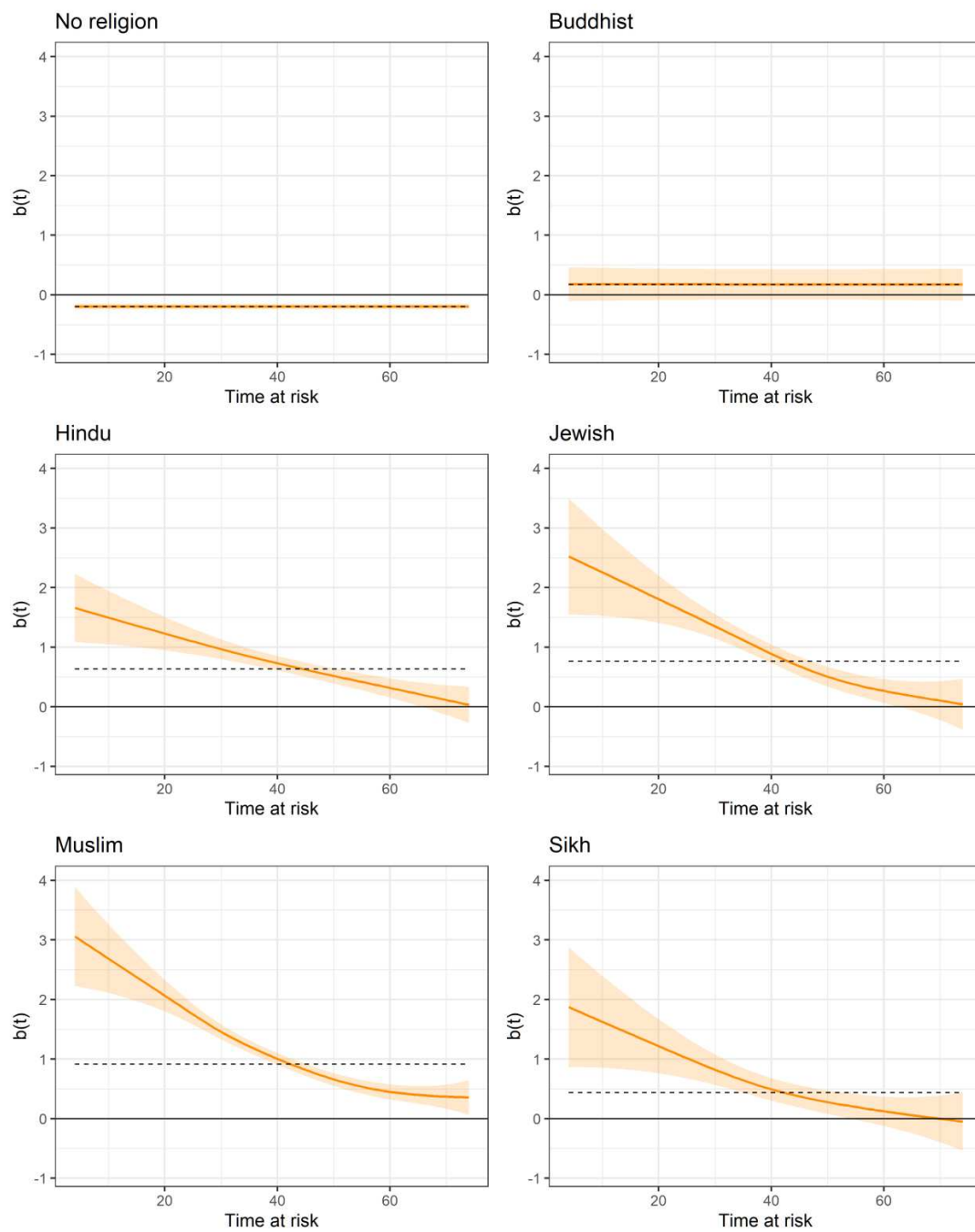
	Model 5	Model 6	Model 7
	Self-reported health variables	Occupational Exposure variables	Ethnicity
No religion	0.83 (0.80-0.87)	0.83 (0.80-0.87)	0.84 (0.80-0.87)
Buddhist	1.09 (0.84-1.41)	1.08 (0.84-1.40)	0.88 (0.68-1.14)
Hindu	1.38 (1.23-1.55)	1.39 (1.24-1.56)	0.95 (0.84-1.07)
Jewish	1.89 (1.67-2.14)	1.90 (1.68-2.15)	1.92 (1.69-2.17)
Muslim	1.43 (1.30-1.56)	1.43 (1.30-1.56)	1.03 (0.94-1.13)
Sikh	1.16 (0.99-1.37)	1.18 (1.00-1.39)	0.79 (0.67-0.94)
Other	0.75 (0.58-0.98)	0.76 (0.58-0.99)	0.65 (0.50-0.85)
Religion not stated	0.83 (0.79-0.88)	0.83 (0.79-0.88)	0.83 (0.78-0.87)

Supplementary Table 2. Hazard ratios (and 95% confidence intervals) for COVID 19 related mortality between 2 March 2020 and 15 May 2020 in England and Wales for non-Christian religious groups compared to Christians, stratified by sex, females

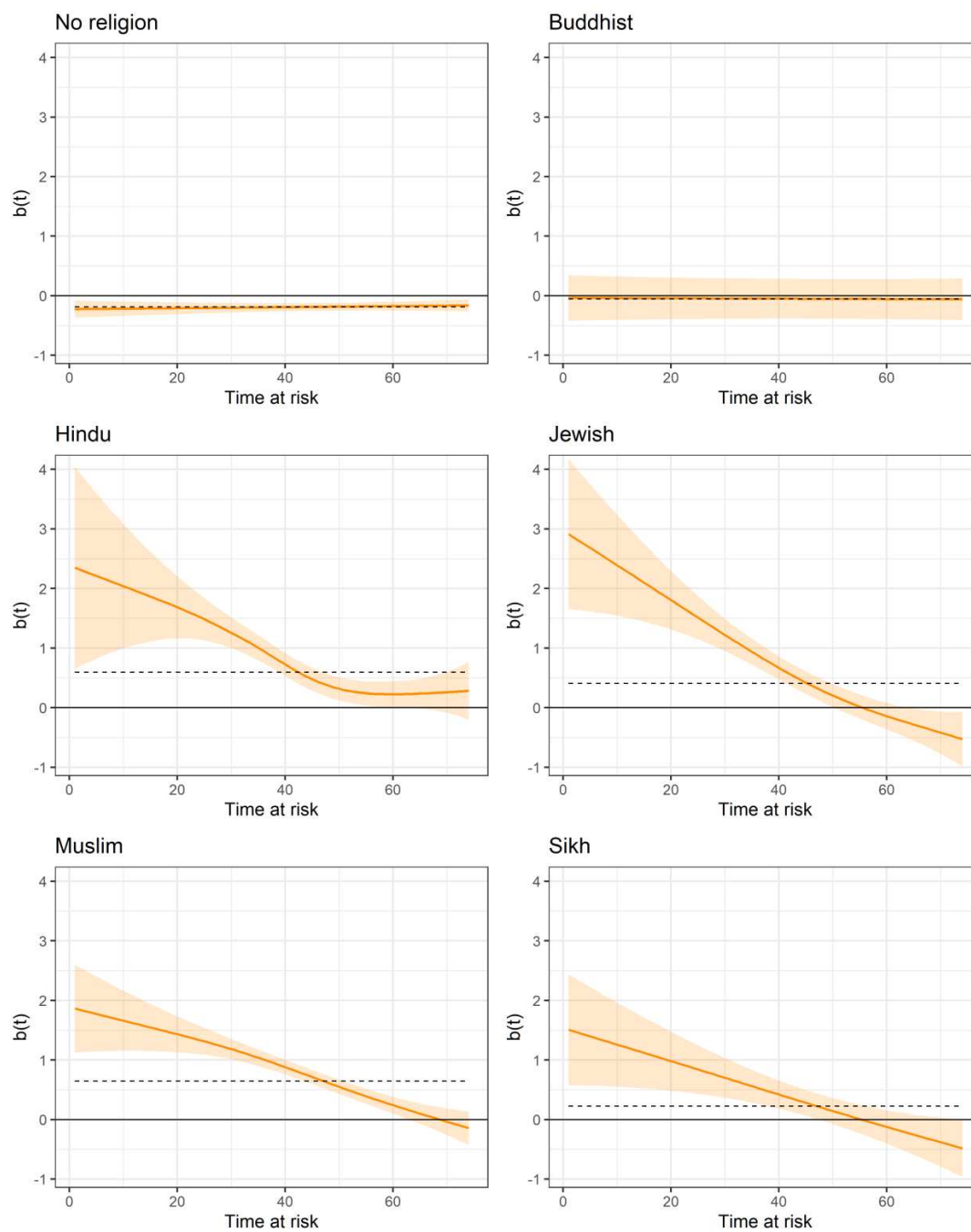
	Model 1	Model 2	Model 3	Model 4
	+Age	+Geography Variables	+Socio economic status variables	+Household variables
No religion	0.83 (0.78-0.89)	0.83 (0.78-0.89)	0.88 (0.82-0.94)	0.87 (0.82-0.93)
Buddhist	0.95 (0.68-1.32)	0.79 (0.57-1.10)	0.96 (0.68-1.34)	0.94 (0.67-1.31)
Hindu	1.81 (1.58-2.06)	1.30 (1.14-1.49)	1.48 (1.28-1.72)	1.52 (1.31-1.77)
Jewish	1.50 (1.29-1.74)	1.12 (0.96-1.30)	1.22 (1.04-1.42)	1.26 (1.08-1.47)
Muslim	1.90 (1.72-2.10)	1.34 (1.21-1.48)	1.28 (1.13-1.46)	1.29 (1.14-1.47)
Sikh	1.25 (1.02-1.53)	0.98 (0.80-1.21)	1.05 (0.85-1.31)	1.05 (0.85-1.31)
Other	0.81 (0.60-1.09)	0.80 (0.59-1.07)	0.85 (0.63-1.15)	0.83 (0.61-1.12)
Religion not stated	0.84 (0.79-0.89)	0.83 (0.78-0.88)	0.82 (0.77-0.88)	0.81 (0.76-0.86)

	Model 5	Model 6	Model 7
	+Self-reported health variables	+Occupational Exposure variables	+Ethnicity
No religion	0.87 (0.81-0.93)	0.87 (0.81-0.93)	0.87 (0.82-0.93)
Buddhist	0.81 (0.58-1.14)	0.80 (0.57-1.12)	0.68 (0.48-0.96)
Hindu	1.38 (1.18-1.60)	1.38 (1.19-1.61)	1.09 (0.93-1.28)
Jewish	1.19 (1.02-1.39)	1.20 (1.03-1.39)	1.21 (1.04-1.41)
Muslim	1.13 (0.99-1.29)	1.12 (0.98-1.27)	0.92 (0.80-1.05)
Sikh	0.97 (0.78-1.21)	0.97 (0.78-1.21)	0.77 (0.61-0.96)
Other	0.74 (0.54-0.99)	0.74 (0.55-1.00)	0.70 (0.52-0.95)
Religion not stated	0.80 (0.75-0.85)	0.80 (0.75-0.85)	0.79 (0.75-0.85)

Supplementary figure 1. Male Schoenfeld residuals from Age adjusted Cox Regression model



Supplementary figure 2. Female Schoenfeld residuals from Age adjusted Cox Regression model



Supplementary table 3. Pre and post lockdown, age adjusted hazard ratios of COVID 19 related mortality between 2 March 2020 and 15 May 2020 in England and Wales for non-Christian religious groups compared to Christians, stratified by sex. males

	Pre Lockdown	Post Lockdown
No religion	0.85 (0.78-0.81)	0.92 (0.81-0.85)
Buddhist	1.46 (0.93-1.09)	2.29 (1.09-1.49)
Hindu	2.59 (2.17-1.63)	3.08 (1.63-1.86)
Jewish	3.53 (2.94-1.63)	4.25 (1.63-1.92)
Muslim	3.97 (3.56-1.96)	4.42 (1.96-2.15)
Sikh	2.23 (1.73-1.30)	2.88 (1.30-1.58)
Other religion	0.93 (0.56-0.89)	1.55 (0.89-1.21)
Religion not stated	0.90 (0.81-0.87)	1.00 (0.87-0.93)

Supplementary table 4. Pre and post lockdown, age adjusted hazard ratios of COVID 19 related mortality between 2 March 2020 and 15 May 2020 in England and Wales for non-Christian religious groups compared to Christians, stratified by sex. females

	Pre Lockdown	Post Lockdown
No religion	0.97 (0.85-0.79)	1.10 (0.79-0.86)
Buddhist	1.18 (0.62-0.89)	2.28 (0.89-1.30)
Hindu	3.53 (2.87-1.35)	4.35 (1.35-1.61)
Jewish	3.02 (2.39-1.10)	3.81 (1.10-1.34)
Muslim	3.60 (3.07-1.46)	4.21 (1.46-1.65)
Sikh	1.98 (1.39-1.06)	2.82 (1.06-1.35)
Other religion	1.10 (0.62-0.74)	1.93 (0.74-1.05)
Religion not stated	0.92 (0.81-0.82)	1.05 (0.82-0.88)

Supplementary table 5. Percentage of each religious group associating with white and non-white ethnicities in England and Wales

	Percentage of deaths involving COVID-19 among White ethnic group	Percentage of deaths involving COVID-19 among non-White ethnic groups	Percentage identifying as White at the 2011 Census	Percentage identifying as non-White at the 2011 Census
No religion	94.00%	6.00%	94.30%	5.70%
Christian	94.10%	5.90%	93.00%	7.00%
Buddhist	26.60%	73.40%	34.40%	65.60%
Hindu	1.40%	98.60%	1.10%	98.90%
Jewish	95.60%	4.40%	93.60%	6.40%
Muslim	7.80%	92.20%	7.50%	92.50%
Sikh	1.60%	98.40%	1.50%	98.50%
Other religion	66.30%	33.70%	76.50%	23.50%
Religion not stated	90.60%	9.40%	87.40%	12.60%

Source: Census 2011

Supplementary table 6. Percentage of each religious group falling in one of two socio economic classifications, 2012 and 2019

	Managerial and Professional occupations			Routine and Manual Occupations	
	2012	2019		2012	2019
No Religion	26.59%	28.89%	No Religion	19.59%	18.04%
Christian	22.91%	24.88%	Christian	19.31%	16.76%
Buddhist	27.80%	28.50%	Buddhist	23.53%	21.39%
Hindu	29.55%	32.51%	Hindu	15.92%	13.67%
Jewish	36.86%	32.33%	Jewish	4.35%	5.06%
Muslim	10.88%	12.92%	Muslim	14.14%	12.86%
Sikh	20.41%	25.03%	Sikh	19.09%	17.22%
Any Other	29.61%	31.03%	Any Other	16.33%	15.25%

Source: Annual Population Survey 2012 and 2019