

Supplementary Table S1. Worldwide incidence (A) and deaths (B) of the top 10 cancer types among 15–39 year-olds from 1990 to 2019.

A

Year	Gender	Incidence rate (per 100,000) NO. 95% UI									
		Breast	Non-melanoma skin cancer	Cervical cancer	Leukemia	Colorectal cancer	Brain and CNS	Testicular cancer	Non-Hodgkin lymphoma	Stomach	Thyroid
1990	both	4.09 (4.32-3.85)	4.01 (5.27-3.03)	3.80 (4.39-3.30)	3.69 (4.08-3.21)	1.70(1.80-1.61)	1.62(2.01-1.40)	1.31(1.44-1.06)	1.44(1.64-1.29)	2.19 (2.33-2.03)	0.89 (0.98-0.76)
1991	both	4.16 (4.37-3.94)	4.00 (5.26-3.03)	3.79 (4.34-3.31)	3.66 (4.03-3.20)	1.73(1.83-1.63)	1.63(2.01-1.39)	1.33(1.45-1.10)	1.47(1.66-1.31)	2.16 (2.29-2.02)	0.91 (1.00-0.78)
1992	both	4.22 (4.44-3.98)	3.99 (5.25-3.02)	3.80 (4.32-3.32)	3.65 (4.01-3.21)	1.75(1.84-1.67)	1.64(2.01-1.41)	1.34(1.48-1.14)	1.48(1.66-1.33)	2.14 (2.26-2.01)	0.94 (1.03-0.81)
1993	both	4.33 (4.54-4.12)	3.98 (5.22-3.01)	3.82 (4.42-3.35)	3.64 (3.97-3.22)	1.79(1.87-1.70)	1.66(2.01-1.42)	1.37(1.51-1.18)	1.51(1.69-1.36)	2.12 (2.23-2.00)	0.97 (1.06-0.84)
1994	both	4.45 (4.66-4.23)	3.96 (5.18-3.00)	3.89 (4.56-3.41)	3.69 (4.00-3.26)	1.82(1.90-1.75)	1.68(2.05-1.44)	1.38(1.53-1.23)	1.54(1.72-1.39)	2.13(2.23-2.03)	1.01 (1.10-0.87)
1995	both	4.54 (4.77-4.32)	3.93 (5.16-2.99)	3.93 (4.55-3.46)	3.72 (4.04-3.31)	1.84(1.93-1.76)	1.70(2.05-1.45)	1.39(1.54-1.24)	1.55(1.74-1.40)	2.12 (2.22-2.02)	1.05 (1.14-0.89)
1996	both	4.58 (4.81-4.35)	3.88 (5.09-2.96)	3.93 (4.60-3.45)	3.71 (4.01-3.26)	1.86(1.94-1.78)	1.72(2.02-1.44)	1.41(1.56-1.25)	1.55(1.73-1.40)	2.08 (2.18 -1.98)	1.08 (1.17-0.91)
1997	both	4.64 (4.86-4.40)	3.78 (4.95-2.87)	3.96 (4.61-3.51)	3.71 (4.01-3.28)	1.88(1.96-1.80)	1.74(2.03-1.45)	1.42(1.56-1.27)	1.56(1.73-1.41)	2.06 (2.15-1.96)	1.11 (1.21-0.94)
1998	both	4.72 (4.97-4.45)	3.66 (4.79-2.79)	4.01 (4.67-3.50)	3.76 (4.07-3.31)	1.90(2.00-1.83)	1.77(2.05-1.47)	1.44(1.57-1.29)	1.56(1.74-1.41)	2.08 (2.19-1.96)	1.15 (1.25-0.96)
1999	both	4.79 (5.05-4.50)	3.58 (4.67-2.73)	4.05 (4.67-3.54)	3.79 (4.11-3.32)	1.96(2.06-1.86)	1.80(2.06-1.48)	1.46(1.60-1.31)	1.56(1.74-1.40)	2.11 (2.22-2.00)	1.18(1.29-0.96)
2000	both	4.85 (5.12-4.56)	3.52 (4.63-2.69)	4.09 (4.66-3.56)	3.78 (4.11-3.32)	2.00(2.10-1.90)	1.82(2.06-1.48)	1.47(1.61-1.31)	1.57(1.75-1.40)	2.14 (2.25-2.03)	1.21(1.32-1.00)
2001	both	4.91 (5.18-4.63)	3.63 (4.74-2.82)	4.11 (4.68-3.58)	3.74 (4.03-3.31)	2.03(2.14-1.93)	1.82(2.05-1.50)	1.46(1.60-1.31)	1.55(1.74-1.40)	2.14 (2.26-2.04)	1.23(1.32-1.04)
2002	both	4.84 (5.07-4.57)	3.93 (5.01-3.10)	4.06 (4.55-3.52)	3.66 (3.92-3.28)	2.05(2.13-1.96)	1.82(2.03-1.51)	1.47(1.62-1.33)	1.53(1.70-1.38)	2.11(2.21-2.00)	1.22(1.32-1.04)
2003	both	4.76 (4.98-4.54)	4.26(5.37-3.42)	3.98 (4.43-3.46)	3.60 (3.85-3.25)	2.06(2.15-1.97)	1.81(2.00-1.49)	1.49(1.64-1.36)	1.52(1.69-1.38)	2.07 (2.17-1.98)	1.23(1.31-1.05)
2004	both	4.75(4.95-4.56)	4.52(5.63-3.65)	3.95 (4.38-3.41)	3.56 (3.79-3.22)	2.09(2.20-1.99)	1.81(2.02-1.51)	1.50(1.64-1.38)	1.53(1.69-1.38)	2.06 (2.17-1.96)	1.25(1.33-1.08)
2005	both	4.78 (4.99-4.60)	4.60(5.57-3.73)	3.94 (4.32-3.42)	3.51 (3.75-3.18)	2.10(2.22-2.00)	1.82(2.01-1.52)	1.51(1.68-1.40)	1.54(1.71-1.40)	2.01 (2.13-1.92)	1.28(1.37-1.10)
2006	both	4.77(4.96-4.59)	4.58(5.69-3.71)	3.89 (4.25-3.35)	3.43 (3.65-3.13)	2.09(2.21-2.00)	1.82(2.00-1.51)	1.52(1.70-1.40)	1.55(1.72-1.41)	1.92(2.04- 1.83)	1.31(1.39-1.12)
2007	both	4.79(4.98-4.61)	4.56(5.67-3.69)	3.84 (4.20-3.34)	3.40 (3.63-3.12)	2.10(2.23-2.02)	1.84(2.00-1.53)	1.56(1.73-1.44)	1.56(1.74-1.42)	1.87(1.99- 1.79)	1.35(1.43-1.15)
2008	both	4.86(5.06-4.67)	4.55(5.65-3.67)	3.84 (4.17-3.37)	3.42 (3.62-3.13)	2.15(2.28-2.07)	1.87(2.04-1.54)	1.60(1.77-1.47)	1.60(1.78-1.46)	1.84 (1.96- 1.76)	1.39(1.48-1.18)
2009	both	4.95(5.15-4.75)	4.53(5.63-3.66)	3.87 (4.24-3.36)	3.43 (3.62-3.15)	2.20(2.35-2.11)	1.90(2.06-1.56)	1.64(1.80-1.51)	1.63(1.81-1.48)	1.83(1.94-1.75)	1.43(1.52-1.20)
2010	both	5.02(5.24-4.81)	4.50(5.61-3.63)	3.89 (4.22-3.39)	3.41 (3.62-3.15)	2.24(2.38-2.14)	1.91(2.08-1.59)	1.67(1.83-1.53)	1.65(1.85-1.50)	1.80 (1.92-1.72)	1.46(1.56-1.23)
2011	both	5.05(5.29-4.82)	4.48(5.57-3.61)	3.88 (4.20-3.37)	3.37 (3.58-3.10)	2.21(2.35-2.12)	1.91(2.08-1.58)	1.68(1.84-1.55)	1.65(1.84-1.50)	1.73 (1.84-1.65)	1.46(1.55-1.24)
2012	both	5.04 (5.28-4.82)	4.48(5.57-3.61)	3.84 (4.20-3.32)	3.29 (3.47-3.03)	2.19(2.31-2.10)	1.91(2.09-1.56)	1.68(1.84-1.55)	1.63(1.83-1.49)	1.65(1.76-1.57)	1.43(1.52-1.23)
2013	both	5.13(5.38-4.87)	4.50(5.61-3.62)	3.87 (4.22-3.33)	3.27 (3.45-3.00)	2.21(2.34-2.12)	1.92(2.07-1.57)	1.71(1.89-1.58)	1.63(1.83-1.49)	1.61 (1.72-1.53)	1.43(1.53-1.22)
2014	both	5.20(5.49-4.94)	4.53(5.65-3.64)	3.87 (4.23-3.32)	3.28 (3.47-3.01)	2.27(2.41-2.17)	1.95(2.13-1.57)	1.75(1.94-1.60)	1.64(1.83-1.49)	1.61(1.71-1.53)	1.43(1.52-1.24)
2015	both	5.29(5.56-5.01)	4.57(5.70-3.67)	3.88 (4.25-3.30)	3.28 (3.47-2.99)	2.30(2.43-2.18)	1.97(2.13-1.58)	1.78(1.97-1.63)	1.65(1.83-1.51)	1.58 (1.69-1.49)	1.43(1.54-1.25)
2016	both	5.38(5.70-5.07)	4.62(5.76-3.70)	3.90 (4.30-3.31)	3.27 (3.49-2.96)	2.33(2.47-2.20)	1.98(2.16-1.58)	1.81(2.00-1.65)	1.66(1.84-1.51)	1.58(1.68-1.49)	1.45(1.56-1.28)
2017	both	5.49(5.91-5.09)	4.66(5.82-3.74)	3.93 (4.37-3.32)	3.32 (3.56-2.99)	2.41(2.58-2.26)	2.01(2.22-1.59)	1.85(2.13-1.68)	1.69(1.89-1.53)	1.60 (1.72-1.50)	1.48(1.62-1.31)
2018	both	5.63(6.12-5.13)	4.70(5.89-3.75)	3.99 (4.49-3.37)	3.39 (3.66-3.05)	2.50(2.70-2.32)	2.05(2.29-1.62)	1.90(2.13-1.71)	1.74(1.96-1.57)	1.64(1.77-1.52)	1.54(1.69-1.35)
2019	both	5.72(6.28-5.19)	4.74(5.98-3.76)	4.02 (4.57-3.36)	3.41 (3.72-3.03)	2.56(2.79-2.37)	2.07(2.33-1.62)	1.93(2.19-1.74)	1.77(1.98-1.59)	1.65(1.79-1.52)	1.58(1.74-1.37)

B

Year	Gender	Death rate (per 100,000) NO. 95% UI									
		Leukemia	Breast	Brain and CNS	<u>Colorectal cancer</u>	Stomach	<u>Cervical cancer</u>	Lung	Non-Hodgkin lymphoma	Liver	Lip and oral cavity
1990	both	2.26(2.51-1.96)	1.37(1.47-1.26)	1.01(1.27-0.86)	0.90(0.96-0.84)	1.61(1.72-1.49)	1.09(1.27-0.92)	1.07(1.16-0.99)	0.69(0.75-0.64)	1.34(1.54-1.17)	0.26(0.28-0.24)
1991	both	2.22(2.47-1.93)	1.37(1.47-1.27)	1.01(1.28-0.86)	0.90(0.96-0.85)	1.58(1.68-1.47)	1.08(1.30-0.92)	1.08(1.16-1.01)	0.70(0.75-0.64)	1.37(1.55-1.21)	0.26(0.28-0.25)
1992	both	2.20(2.42-1.92)	1.39(1.48-1.28)	1.02(1.25-0.86)	0.91(0.97-0.86)	1.56(1.67-1.46)	1.08(1.29-0.92)	1.08(1.15-1.01)	0.70(0.75-0.65)	1.40(1.57-1.26)	0.27(0.28-0.25)
1993	both	2.17(2.39-1.90)	1.40(1.50-1.31)	1.02(1.24-0.87)	0.92(0.97-0.88)	1.54(1.63-1.45)	1.07(1.27-0.91)	1.09(1.15-1.02)	0.71(0.76-0.66)	1.41(1.55-1.27)	0.27(0.29-0.25)
1994	both	2.18(2.39-1.93)	1.43(1.53-1.34)	1.03(1.27-0.88)	0.93(0.98-0.89)	1.55(1.63-1.46)	1.09(1.31-0.94)	1.10(1.16-1.04)	0.72(0.77-0.67)	1.44(1.57-1.30)	0.28(0.29-0.26)
1995	both	2.18(2.39-1.92)	1.45(1.55-1.35)	1.03(1.26-0.87)	0.94(0.99-0.89)	1.54(1.62-1.46)	1.09(1.30-0.94)	1.11(1.17-1.05)	0.72(0.77-0.67)	1.45(1.58-1.33)	0.28(0.30-0.27)
1996	both	2.16(2.36-1.90)	1.45(1.54-1.35)	1.04(1.24-0.87)	0.94(0.98-0.89)	1.50(1.57-1.42)	1.08(1.29-0.92)	1.10(1.16-1.05)	0.72(0.76-0.67)	1.44(1.56-1.33)	0.28(0.30-0.27)
1997	both	2.13(2.34-1.88)	1.45(1.55-1.35)	1.04(1.24-0.86)	0.94(0.98-0.89)	1.48(1.55-1.40)	1.08(1.29-0.94)	1.09(1.15-1.04)	0.72(0.76-0.67)	1.41(1.52-1.31)	0.29(0.31-0.27)
1998	both	2.13(2.34-1.86)	1.47(1.57-1.35)	1.05(1.23-0.86)	0.95(1.00-0.89)	1.49(1.56-1.40)	1.09(1.31-0.93)	1.10(1.15-1.04)	0.72(0.76-0.66)	1.40(1.51-1.31)	0.29(0.31-0.27)
1999	both	2.13(2.33-1.88)	1.48(1.58-1.36)	1.06(1.24-0.86)	0.96(1.01-0.90)	1.50(1.58-1.42)	1.09(1.30-0.94)	1.10(1.16-1.05)	0.72(0.77-0.66)	1.39(1.50-1.29)	0.30(0.32-0.29)
2000	both	2.11(2.32-1.85)	1.49(1.60-1.37)	1.07(1.23-0.86)	0.97(1.02-0.92)	1.52(1.60-1.44)	1.10(1.30-0.95)	1.12(1.18-1.05)	0.72(0.77-0.66)	1.33(1.44-1.22)	0.30(0.32-0.29)
2001	both	2.07(2.27-1.83)	1.49(1.60-1.38)	1.06(1.21-0.87)	0.97(1.03-0.92)	1.52(1.60-1.44)	1.10(1.30-0.95)	1.10(1.17-1.04)	0.71(0.76-0.66)	1.21(1.31-1.12)	0.30(0.32-0.29)
2002	both	2.00(2.18-1.77)	1.45(1.56-1.35)	1.05(1.19-0.86)	0.96(1.02-0.92)	1.48(1.55-1.40)	1.08(1.25-0.93)	1.07(1.13-1.02)	0.69(0.74-0.64)	1.04(1.13-0.96)	0.30(0.32-0.28)
2003	both	1.94(2.10-1.72)	1.41(1.50-1.32)	1.03(1.17-0.85)	0.95(1.00-0.90)	1.43(1.50-1.36)	1.05(1.20-0.91)	1.03(1.09-0.98)	0.68(0.72-0.64)	0.91(0.98-0.85)	0.30(0.31-0.28)
2004	both	1.90(2.05-1.70)	1.39(1.47-1.31)	1.02(1.16-0.84)	0.95(1.00-0.89)	1.40(1.48-1.34)	1.03(1.14-0.89)	1.00(1.06-0.95)	0.68(0.72-0.64)	0.81(0.87-0.77)	0.29(0.31-0.28)
2005	both	1.85(2.00-1.67)	1.38(1.45-1.30)	1.01(1.14-0.83)	0.94(0.99-0.89)	1.35(1.43-1.28)	1.02(1.14-0.88)	0.97(1.03-0.92)	0.68(0.73-0.64)	0.75(0.80-0.70)	0.30(0.32-0.28)
2006	both	1.80(1.93-1.62)	1.36(1.44-1.29)	1.00(1.11-0.82)	0.92(0.97-0.87)	1.28(1.36-1.21)	0.99(1.11-0.85)	0.93(0.99-0.89)	0.68(0.72-0.64)	0.71(0.76-0.67)	0.30(0.32-0.28)
2007	both	1.76(1.89-1.59)	1.35(1.42-1.28)	0.99(1.10-0.82)	0.91(0.96-0.86)	1.22(1.30-1.16)	0.97(1.07-0.84)	0.91(0.97-0.87)	0.68(0.72-0.64)	0.68(0.73-0.64)	0.30(0.32-0.29)
2008	both	1.74(1.86-1.58)	1.35(1.41-1.28)	0.99(1.09-0.81)	0.91(0.96-0.87)	1.18(1.26-1.13)	0.96(1.06-0.82)	0.90(0.95-0.85)	0.69(0.73-0.64)	0.68(0.73-0.64)	0.31(0.33-0.29)
2009	both	1.72(1.83-1.55)	1.35(1.43-1.27)	0.99(1.10-0.81)	0.91(0.97-0.87)	1.15(1.21-1.10)	0.95(1.04-0.81)	0.88(0.94-0.84)	0.69(0.73-0.65)	0.66(0.73-0.61)	0.31(0.33-0.29)
2010	both	1.69(1.82-1.53)	1.35(1.43-1.28)	0.98(1.07-0.80)	0.91(0.97-0.86)	1.11(1.18-1.06)	0.94(1.03-0.81)	0.87(0.92-0.82)	0.69(0.74-0.65)	0.64(0.70-0.60)	0.31(0.34-0.29)
2011	both	1.65(1.76-1.49)	1.35(1.43-1.27)	0.97(1.06-0.79)	0.89(0.95-0.85)	1.06(1.13-1.01)	0.93(1.03-0.80)	0.83(0.89-0.80)	0.69(0.74-0.65)	0.61(0.67-0.57)	0.31(0.34-0.29)
2012	both	1.60(1.71-1.44)	1.34(1.42-1.27)	0.96(1.05-0.78)	0.87(0.93-0.83)	1.01(1.07-0.96)	0.92(1.00-0.78)	0.81(0.85-0.77)	0.68(0.73-0.64)	0.59(0.63-0.55)	0.31(0.34-0.29)
2013	both	1.57(1.67-1.41)	1.36(1.45-1.28)	0.96(1.05-0.78)	0.88(0.93-0.84)	0.98(1.04-0.93)	0.92(1.00-0.79)	0.79(0.84-0.75)	0.68(0.73-0.64)	0.58(0.63-0.55)	0.31(0.34-0.29)
2014	both	1.55(1.66-1.39)	1.37(1.47-1.28)	0.96(1.05-0.77)	0.88(0.94-0.84)	0.96(1.01-0.91)	0.91(1.01-0.78)	0.79(0.84-0.75)	0.67(0.72-0.64)	0.59(0.64-0.55)	0.31(0.34-0.29)
2015	both	1.53(1.63-1.38)	1.39(1.48-1.30)	0.96(1.05-0.77)	0.89(0.94-0.84)	0.94(0.99-0.89)	0.91(1.01-0.77)	0.79(0.84-0.74)	0.67(0.71-0.64)	0.59(0.64-0.55)	0.31(0.34-0.29)
2016	both	1.52(1.63-1.37)	1.40(1.51-1.30)	0.96(1.06-0.76)	0.90(0.95-0.85)	0.93(0.99-0.88)	0.91(1.02-0.77)	0.79(0.84-0.74)	0.67(0.72-0.63)	0.59(0.65-0.55)	0.32(0.35-0.29)
2017	both	1.52(1.64-1.36)	1.42(1.53-1.31)	0.97(1.06-0.76)	0.92(0.98-0.86)	0.93(1.00-0.87)	0.91(1.02-0.78)	0.80(0.86-0.74)	0.68(0.73-0.64)	0.60(0.66-0.55)	0.32(0.35-0.29)
2018	both	1.53(1.66-1.36)	1.44(1.57-1.31)	0.98(1.08-0.76)	0.94(1.01-0.88)	0.94(1.02-0.87)	0.91(1.04-0.77)	0.82(0.89-0.76)	0.69(0.75-0.65)	0.62(0.68-0.56)	0.33(0.37-0.30)
2019	both	1.52(1.65-1.35)	1.45(1.59-1.32)	0.98(1.09-0.77)	0.96(1.03-0.88)	0.94(1.02-0.87)	0.92(1.05-0.77)	0.83(0.91-0.76)	0.70(0.76-0.65)	0.63(0.70-0.56)	0.34(0.37-0.30)

Supplementary Table S2. Most common cancer types by country in terms of incidence (A) and deaths (B) among 15–39 year-olds in 2019.

A

Incidence											
<u>Cervical cancer</u> N=86			Breast N=77		<u>Testicular cancer</u> N=12	Leukemia N=10	Malignant skin melanoma N=9	Non-melanoma skin cancer N=5	Brain and CNS N=2	Bladder N=1	Liver N=1
Fiji	Equatorial Guinea	Palau	China	Spain	Tonga	Democratic People's Republic of Korea	Australia	Canada	Iceland	Egypt	Gambia
Kiribati	Gabon	Saint Kitts and Nevis	Cambodia	United Kingdom	Albania	Timor-Leste	New Zealand	United States of America	Tajikistan		
Marshall Islands	Burundi	South Sudan	Indonesia	Antigua and Barbuda	Croatia	Andorra	Denmark	Brazil			
Samoa	Comoros	Belarus	Lao People's Democratic Republic	Bahamas	Czechia	Germany	Finland	Greenland			
Vanuatu	Djibouti	Peru	Malaysia	Barbados	Hungary	Italy	Ireland	Switzerland			
Kazakhstan	Eritrea	Bhutan	Maldives	Jamaica	Poland	Syrian Arab Republic	Luxembourg				
Kyrgyzstan	Ethiopia	Nepal	Myanmar	Trinidad and Tobago	Serbia	Yemen	Netherlands				
Mongolia	Kenya	Malawi	Philippines	Algeria	Slovakia	San Marino	Norway				
Romania	Madagascar		Sri Lanka	Bahrain	Slovenia	Sudan	Sweden				
Republic of Moldova	Mozambique		Thailand	Iran (Islamic Republic of)	Austria	Afghanistan					
Argentina	Rwanda		Viet Nam	Iraq	Chile						
Uruguay	Somalia		Micronesia (Federated States of)	Jordan	Monaco						
Belize	United Republic of Tanzania		Papua New Guinea	Kuwait							
Cuba	Uganda		Solomon Islands	Lebanon							
Dominica	Zambia		Armenia	Libya							
Dominican Republic	Botswana		Azerbaijan	Morocco							
Grenada	Lesotho		Georgia	Palestine							
Guyana	Namibia		Uzbekistan	Qatar							
Haiti	South Africa		Bosnia and Herzegovina	Tunisia							
Saint Lucia	Eswatini		Bulgaria	Turkey							
Saint Vincent and the Grenadines	Zimbabwe		North Macedonia	Pakistan							
Suriname	Benin		Montenegro	Mauritius							
Bolivia (Plurinational State of)	Burkina Faso		Estonia	Seychelles							
Ecuador	Cameroon		Latvia	American Samoa							
Colombia	Cabo Verde		Lithuania	Bermuda							
Costa Rica	Chad		Russian Federation	Cook Islands							
El Salvador	Cote d'Ivoire		Ukraine	Guam							
Guatemala	Ghana		Brunei Darussalam	Nauru							
Honduras	Guinea		Japan	Niue							
Mexico	Guinea-Bissau		Republic of Korea	Northern Mariana Islands							
Nicaragua	Liberia		Singapore	Puerto Rico							
Panama	Mali		Belgium	Tokelau							
Venezuela (Bolivarian Republic of)	Mauritania		Cyprus	Tuvalu							
Paraguay	Niger		France	United States Virgin Islands							
India	Nigeria		Greece	Turkmenistan							
Angola	Sao Tome and Principe		Israel	Oman							
Central African Republic	Senegal		Malta	Saudi Arabia							
Congo	Sierra Leone		Portugal	United Arab Emirates							
Democratic Republic of the Congo	Togo			Bangladesh							

Supplementary Table S3. Worldwide proportion of the 29 cancer types by age groups for (A) incidence and (B) deaths among 15–39 year-olds in 2019

A

	0 to 14		15 to 19		20 to 24		25 to 29		30 to 34		35 to 39		40 to 44		45 to 49		50 to 74		75 plus	
	cases	Proportion(%)	cases	Proportion(%)	cases	Proportion(%)	cases	Proportion(%)	cases	Proportion(%)	cases	Proportion(%)	cases	Proportion(%)	cases	Proportion(%)	cases	Proportion(%)	cases	Proportion(%)
Esophageal cancer	--	--	--	--	561.18	0.41	968.62	0.45	2105.45	0.59	4452.56	0.85	10067.07	1.31	22664.04	1.96	348022.00	2.62	145722.32	2.16
Stomach cancer	--	--	1314.91	1.28	3344.97	2.42	6738.65	3.16	15313.03	4.28	22296.38	4.27	37469.49	4.86	57843.81	5.01	742953.63	5.60	382530.82	5.67
Liver cancer	3718.97	1.28	1195.79	1.16	1842.13	1.33	3457.46	1.62	7267.57	2.03	11666.84	2.24	20139.99	2.61	32729.67	2.83	319858.32	2.41	132487.61	1.96
Larynx cancer	--	--	--	--	356.26	0.26	494.70	0.23	1003.04	0.28	2360.32	0.45	5394.26	0.70	11940.48	1.03	151491.43	1.14	36108.38	0.54
Lung cancer	281.46	0.10	1242.65	1.21	2178.40	1.57	4011.38	1.88	8880.29	2.48	16287.86	3.12	32283.78	4.19	72061.85	6.24	1438081.51	10.84	684688.98	10.15
Breast cancer	--	--	2901.32	2.82	6528.58	4.72	19427.93	9.10	49873.25	13.92	91128.26	17.46	155655.99	20.20	212464.30	18.39	1147419.11	8.65	316955.38	4.70
Cervical cancer	--	--	1360.47	1.32	5737.32	4.14	16745.78	7.84	39556.90	11.04	55857.98	10.70	68350.78	8.87	69292.94	6.00	263074.27	1.98	45564.44	0.68
Uterine cancer	--	--	--	--	1121.87	0.81	2700.94	1.26	5785.05	1.62	9807.59	1.88	15115.03	1.96	29054.73	2.52	305222.75	2.30	66233.15	0.98
Prostate cancer	--	--	--	--	810.37	0.59	1207.71	0.57	1509.20	0.42	1944.42	0.37	3693.20	0.48	13416.34	1.16	884644.71	6.67	503225.70	7.46
<u>Colorectal cancer</u>	1045.95	0.36	2297.95	2.23	5188.14	3.75	10548.55	4.94	22464.39	6.27	35590.63	6.82	56655.05	7.35	92991.29	8.05	1239836.13	9.34	699550.20	10.37
Lip and oral cavity cancer	1085.75	0.37	1624.73	1.58	2867.38	2.07	4461.67	2.09	7710.08	2.15	12776.32	2.45	17900.65	2.32	27003.33	2.34	227768.53	1.72	69899.37	1.04
Nasopharynx cancer	1119.89	0.38	1435.35	1.39	2024.24	1.46	3701.83	1.73	9442.32	2.64	11958.32	2.29	17129.33	2.22	22223.80	1.92	92671.52	0.70	14795.18	0.22
Other pharynx cancer	--	--	--	--	799.84	0.58	1014.47	0.48	1735.10	0.48	3553.39	0.68	7189.80	0.93	12695.05	1.10	117499.96	0.89	22413.62	0.33
Gallbladder and biliary tract cancer	--	--	--	--	260.33	0.19	475.52	0.22	1069.34	0.30	2035.87	0.39	3696.90	0.48	6184.53	0.54	104910.37	0.79	80578.53	1.19
Pancreatic cancer	--	--	235.94	0.23	478.43	0.35	1011.18	0.47	2639.48	0.74	5036.02	0.96	9365.12	1.22	18085.04	1.57	304383.28	2.29	189062.26	2.80
Malignant skin melanoma	1829.41	0.63	1556.43	1.51	3640.40	2.63	7481.38	3.50	11089.77	3.10	13497.60	2.59	16613.61	2.16	19089.23	1.65	146864.97	1.11	68290.32	1.01
Non-melanoma skin cancer	--	--	--	--	9511.65	6.87	17984.26	8.42	40030.87	11.18	73191.49	14.02	127287.14	16.52	218539.64	18.92	3524549.92	26.56	2342591.89	34.72
Ovarian cancer	2512.34	0.86	3210.96	3.12	5056.60	3.65	6891.82	3.23	8448.40	2.36	12223.71	2.34	17686.99	2.30	26153.39	2.26	162791.30	1.23	49446.94	0.73
Testicular cancer	19053.23	6.54	3773.74	3.66	10469.82	7.56	15200.02	7.12	15825.06	4.42	12131.95	2.32	8958.04	1.16	6238.56	0.54	14873.67	0.11	2788.99	0.04
Kidney cancer	12290.89	4.22	1330.08	1.29	1951.82	1.41	3107.37	1.46	5572.00	1.56	9174.68	1.76	14927.89	1.94	21935.68	1.90	217064.85	1.64	84392.17	1.25
Bladder cancer	0.00	0.00	729.99	0.71	1007.30	0.73	1651.40	0.77	3895.22	1.09	6811.14	1.30	8953.08	1.16	15874.11	1.37	285639.39	2.15	199742.93	2.96
Brain and CNS cancer	39932.68	13.71	7668.27	7.45	8729.79	6.31	12225.79	5.73	15806.72	4.41	17080.26	3.27	18539.73	2.41	22636.62	1.96	154620.17	1.17	50752.35	0.75
Thyroid cancer	2356.08	0.81	2562.49	2.49	5058.32	3.65	8566.56	4.01	13786.21	3.85	16858.00	3.23	20856.59	2.71	23344.29	2.02	115570.13	0.87	24887.97	0.37
Mesothelioma	0.00	0.00	0.00	0.00	192.95	0.14	307.28	0.14	346.43	0.10	619.63	0.12	903.74	0.12	1370.26	0.12	18906.28	0.14	11864.09	0.18
Hodgkin lymphoma	4612.98	1.58	4957.65	4.81	7573.80	5.47	7810.14	3.66	7170.41	2.00	5875.84	1.13	5293.41	0.69	4893.10	0.42	26265.41	0.20	13056.14	0.19
Non-Hodgkin lymphoma	14792.67	5.08	10399.85	10.10	8343.81	6.03	9228.97	4.32	11199.49	3.13	13254.79	2.54	12204.51	1.58	16955.41	1.47	212597.52	1.60	148099.52	2.20
Multiple myeloma	0.00	0.00	0.00	0.00	367.52	0.27	429.54	0.20	767.89	0.21	1365.86	0.26	2634.93	0.34	5175.04	0.45	92171.35	0.69	52775.53	0.78
Leukemia	106082.25	36.41	18081.45	17.56	18741.36	13.54	19135.94	8.96	20571.50	5.74	24676.46	4.73	23480.64	3.05	30733.49	2.66	251361.18	1.89	130714.75	1.94
Other malignant neoplasms	80604.32	27.67	35101.22	34.09	23680.41	17.11	26538.59	12.43	27321.40	7.63	28468.48	5.45	31979.46	4.15	41476.20	3.59	359235.92	2.71	177040.28	2.62

B

	0 to 14		15 to 19		20 to 24		25 to 29		30 to 34		35 to 39		40 to 44		45 to 49		50 to 74		75 plus	
	cases	Proportion(%)	cases	Proportion(%)	cases	Proportion(%)	cases	Proportion(%)	cases	Proportion(%)	cases	Proportion(%)	cases	Proportion(%)	cases	Proportion(%)	cases	Proportion(%)	cases	Proportion(%)
Esophageal cancer	0.00	0.00	0.00	0.00	360.02	0.82	360.02	0.82	1606.61	1.58	3572.50	2.26	8523.50	3.33	18217.85	4.46	308834.32	5.75	156276.85	4.48
Stomach cancer	0.00	0.00	660.62	2.02	1762.78	4.00	1762.78	4.00	8295.99	8.17	13594.65	8.59	23046.81	8.99	36391.38	8.90	523201.98	9.74	346649.72	9.94
Liver cancer	3289.71	3.33	700.96	2.14	1170.33	2.65	1170.33	2.65	5381.83	5.30	8990.85	5.68	15843.88	6.18	26186.07	6.40	281644.99	5.24	139039.47	3.99
Larynx cancer	0.00	0.00	0.00	0.00	153.63	0.35	153.63	0.35	536.87	0.53	1330.47	0.84	3209.22	1.25	6374.92	1.56	82994.62	1.54	28527.02	0.82
Lung cancer	209.28	0.21	737.83	2.25	1422.72	3.23	1422.72	3.23	6805.49	6.70	13001.26	8.22	27254.06	10.63	58703.73	14.36	1230685.73	22.90	701015.31	20.10
Breast cancer	0.00	0.00	715.48	2.18	1687.88	3.83	1687.88	3.83	12131.38	11.95	24014.29	15.18	38874.13	15.17	54486.64	13.32	381615.89	7.10	182595.34	5.24
Cervical cancer	0.00	0.00	235.89	0.72	1141.79	2.59	1141.79	2.59	8198.48	8.07	14141.15	8.94	21987.15	8.58	27394.34	6.70	155771.59	2.90	48157.96	1.38
Uterine cancer	0.00	0.00	0.00	0.00	100.50	0.23	100.50	0.23	508.12	0.50	962.34	0.61	1870.43	0.73	3442.11	0.84	54530.45	1.01	29989.69	0.86
Prostate cancer	0.00	0.00	0.00	0.00	119.01	0.27	119.01	0.27	242.17	0.24	316.40	0.20	652.50	0.25	2045.94	0.50	175101.87	3.26	308160.07	8.84
Colorectal cancer	468.68	0.47	786.34	2.40	1876.30	4.25	1876.30	4.25	8583.18	8.45	13334.51	8.43	21445.96	8.37	36747.76	8.99	530598.42	9.87	468184.84	13.42
Lip and oral cavity cancer	336.68	0.34	446.55	1.36	851.23	1.93	851.23	1.93	2669.09	2.63	4665.77	2.95	8240.59	3.21	12974.49	3.17	117982.46	2.20	49820.03	1.43
Nasopharynx cancer	437.87	0.44	404.01	1.23	591.88	1.34	591.88	1.34	1591.39	1.57	2646.86	1.67	4550.22	1.78	6608.03	1.62	43790.09	0.81	10145.07	0.29
Other pharynx cancer	0.00	0.00	0.00	0.00	431.34	0.98	431.34	0.98	1094.83	1.08	2245.14	1.42	4528.38	1.77	7955.35	1.95	77124.53	1.44	20238.64	0.58
Gallbladder and biliary tract cancer	0.00	0.00	0.00	0.00	138.08	0.31	138.08	0.31	667.49	0.66	1310.99	0.83	2532.56	0.99	4838.66	1.18	88080.34	1.64	74599.19	2.14
Pancreatic cancer	0.00	0.00	143.26	0.44	322.99	0.73	322.99	0.73	2143.98	2.11	4258.01	2.69	8396.69	3.28	15998.60	3.91	293555.94	5.46	205547.21	5.89
Malignant skin melanoma	289.89	0.29	168.74	0.52	354.93	0.80	354.93	0.80	1215.44	1.20	1834.56	1.16	2521.76	0.98	3110.41	0.76	30295.51	0.56	22377.89	0.64
Non-melanoma skin cancer	0.00	0.00	0.00	0.00	164.75	0.37	164.75	0.37	435.95	0.43	621.61	0.39	932.83	0.36	1349.53	0.33	22064.77	0.41	30240.20	0.87
Ovarian cancer	537.67	0.54	545.89	1.67	948.48	2.15	948.48	2.15	2275.00	2.24	3738.39	2.36	6798.74	2.65	12064.61	2.95	117800.15	2.19	52315.18	1.50
Testicular cancer	526.68	0.53	399.72	1.22	1024.08	2.32	1024.08	2.32	1388.68	1.37	1133.68	0.72	895.18	0.35	620.45	0.15	2193.57	0.04	1254.15	0.04
Kidney cancer	2712.67	2.74	240.44	0.73	363.36	0.82	363.36	0.82	1028.53	1.01	1792.55	1.13	3061.31	1.19	5880.07	1.44	89146.94	1.66	61620.08	1.77
Bladder cancer	0.00	0.00	92.44	0.28	141.61	0.32	141.61	0.32	559.94	0.55	1021.86	0.65	2045.33	0.80	3688.92	0.90	94952.99	1.77	125997.47	3.61
Brain and CNS cancer	19988.32	20.22	3549.71	10.84	3865.84	8.76	3865.84	8.76	7336.58	7.22	9072.98	5.74	11456.99	4.47	14783.78	3.62	126217.45	2.35	44701.39	1.28
Thyroid cancer	198.67	0.20	200.75	0.61	430.09	0.97	430.09	0.97	685.40	0.67	926.11	0.59	1243.09	0.48	1829.55	0.45	22890.91	0.43	16560.86	0.47
Mesothelioma	0.00	0.00	0.00	0.00	109.68	0.25	109.68	0.25	242.85	0.24	446.73	0.28	695.34	0.27	1022.29	0.25	14863.47	0.28	11679.74	0.33
Hodgkin lymphoma	1728.12	1.75	1095.86	3.35	1592.74	3.61	1592.74	3.61	1808.83	1.78	1671.40	1.06	1604.73	0.63	1485.75	0.36	10276.13	0.19	4363.86	0.13
Non-Hodgkin lymphoma	5825.11	5.89	2826.69	8.63	3673.12	8.33	3673.12	8.33	4674.48	4.60	5650.44	3.57	7480.46	2.92	10173.49	2.49	121767.60	2.27	88570.45	2.54
Multiple myeloma	0.00	0.00	0.00	0.00	181.65	0.41	181.65	0.41	449.60	0.44	825.85	0.52	1676.54	0.65	3061.27	0.75	61180.26	1.14	45876.02	1.32
Leukemia	34371.23	34.78	8821.97	26.94	8550.05	19.38	8550.05	19.38	9189.95	9.05	9824.78	6.21	10897.56	4.25	13295.21	3.25	132693.65	2.47	98228.97	2.82
Other malignant neoplasms	27913.56	28.24	9972.81	30.46	10581.77	23.99	10581.77	23.99	9809.82	9.66	11225.91	7.10	14057.71	5.48	18178.08	4.45	181815.03	3.38	114749.52	3.29

Supplementary Table S4. Incidence and deaths in the different SDI quintiles among 15–39 year-olds from 1990 to 2019

Year	Gender	Incidence rate (per 100,000) No. (95% UI)					Death rate (per 100,000) No. (95% UI)				
		High SDI	High-middle SDI	Middle SDI	Low-middle SDI	Low SDI	High SDI	High-middle SDI	Middle SDI	Low-middle SDI	Low SDI
1990	both	77.05(83.41-71.83)	43.43(46.02-41.04)	30.90(33.35-28.73)	24.07(26.32-21.95)	21.69(24.78-18.80)	14.48(14.67-14.15)	18.77(20.13-17.46)	16.94(18.29-15.72)	13.71(14.93-12.57)	12.36(13.92-10.72)
1991	both	78.25(84.62-73.04)	44.26(46.54-41.97)	30.54(32.54-28.73)	24.07(26.20-22.10)	21.75(24.67-18.83)	14.37(14.56-14.03)	18.88(20.17-17.64)	16.91(18.15-15.72)	13.64(14.80-12.49)	12.37(14.02-10.72)
1992	both	79.27(85.78-74.02)	44.88(46.86-42.88)	30.84(32.73-29.01)	24.22(26.28-22.33)	21.78(24.82-18.86)	14.20(14.39-13.86)	19.00(20.23-17.86)	16.94(18.15-15.83)	13.69(14.85-12.61)	12.39(13.97-10.77)
1993	both	81.07(87.57-75.85)	45.84(47.88-43.85)	31.01(32.83-29.28)	24.39(26.58-22.41)	21.78(24.74-18.94)	14.13(14.33-13.80)	19.27(20.39-18.16)	16.82(17.97-15.68)	13.71(14.80-12.67)	12.39(13.97-10.86)
1994	both	81.92(88.43-76.70)	46.91(48.80-44.97)	31.87(33.55-30.14)	24.73(26.85-22.79)	21.76(24.64-19.00)	14.01(14.20-13.68)	19.68(20.70-18.67)	17.12(18.23-16.05)	13.85(14.95-12.84)	12.39(13.92-10.90)
1995	both	82.67(89.21-77.47)	47.52(49.55-45.48)	32.62(34.33-30.79)	24.99(27.11-23.19)	21.70(24.69-18.89)	13.87(14.06-13.57)	19.76(20.76-18.78)	17.33(18.33-16.32)	13.94(15.06-12.90)	12.35(13.89-10.89)
1996	both	82.50(89.05-77.35)	47.40(49.41-45.48)	33.13(34.84-31.40)	25.16(27.23-23.31)	21.64(24.41-18.98)	13.65(13.83-13.35)	19.36(20.33-18.36)	17.31(18.26-16.36)	13.95(15.00-12.96)	12.29(13.79-10.82)
1997	both	82.29(88.67-77.32)	47.49(49.27-45.30)	33.60(35.28-31.87)	25.77(27.83-23.87)	21.71(24.46-19.13)	13.46(13.64-13.16)	18.93(19.89-17.87)	17.29(18.23-16.39)	14.23(15.36-13.20)	12.31(13.77-10.82)
1998	both	81.64(87.64-76.83)	48.11(49.98-46.13)	34.45(36.22-32.70)	26.25(28.59-24.32)	21.88(24.61-19.22)	13.20(13.38-12.91)	18.77(19.74-17.76)	17.52(18.54-16.56)	14.46(15.57-13.45)	12.37(13.81-10.93)
1999	both	81.23(87.07-76.57)	49.09(51.20-46.98)	35.11(37.07-33.22)	26.67(28.83-24.65)	22.01(24.73-19.32)	12.95(13.12-12.66)	18.84(19.83-17.93)	17.71(18.69-16.80)	14.66(15.78-13.62)	12.41(13.87-11.05)
2000	both	80.94(86.47-76.39)	49.61(51.68-47.34)	35.78(37.84-33.97)	27.03(29.26-24.86)	22.03(24.76-19.43)	12.76(12.92-12.46)	18.71(19.68-17.79)	17.80(18.75-16.87)	14.78(15.90-13.70)	12.40(13.86-11.04)
2001	both	81.95(87.75-77.54)	49.54(51.59-47.54)	36.07(38.03-34.13)	27.15(29.33-25.13)	22.03(24.75-19.57)	12.53(12.70-12.24)	18.21(19.17-17.31)	17.59(18.62-16.70)	14.71(15.83-13.67)	12.34(13.70-10.97)
2002	both	84.56(90.30-79.87)	48.67(50.71-46.67)	35.56(37.35-33.80)	26.92(28.93-25.04)	21.97(24.68-19.58)	12.22(12.39-11.94)	17.34(18.13-16.56)	17.00(17.86-16.13)	14.47(15.52-13.46)	12.25(13.61-10.98)
2003	both	87.67(93.77-82.85)	48.35(50.06-46.50)	34.93(36.61-33.20)	26.20(28.18-24.51)	22.03(24.60-19.65)	11.96(12.13-11.72)	16.65(17.37-15.96)	16.43(17.24-15.64)	13.99(14.96-13.08)	12.26(13.51-10.98)
2004	both	89.55(95.37-84.65)	48.74(50.62-47.01)	34.78(36.44-33.24)	26.04(27.97-24.45)	22.14(24.66-19.79)	11.69(11.85-11.43)	16.29(16.98-15.61)	16.03(16.80-15.29)	13.80(14.75-12.92)	12.26(13.47-11.03)
2005	both	90.25(96.40-85.25)	49.39(51.16-47.69)	34.48(36.15-32.95)	26.33(28.27-24.61)	22.18(24.59-19.85)	11.48(11.65-11.21)	16.01(16.63-15.42)	15.54(16.28-14.84)	13.82(14.76-12.88)	12.23(13.45-10.94)
2006	both	89.85(95.90-84.92)	49.34(51.03-47.79)	34.13(35.65-32.62)	26.53(28.57-24.90)	22.11(24.46-19.77)	11.28(11.44-11.02)	15.51(16.05-14.95)	15.03(15.72-14.38)	13.81(14.74-12.93)	12.17(13.31-11.04)
2007	both	90.01(96.03-85.08)	50.20(51.84-48.54)	34.08(35.62-32.72)	26.44(28.40-24.83)	22.05(24.49-19.79)	11.11(11.27-10.85)	15.24(15.80-14.68)	14.66(15.38-14.01)	13.67(14.65-12.82)	12.10(13.28-10.93)
2008	both	90.67(96.64-85.67)	51.36(53.09-49.60)	34.59(36.15-33.11)	26.55(28.43-24.92)	22.12(24.58-19.78)	10.99(11.17-10.73)	15.09(15.65-14.56)	14.59(15.30-13.98)	13.64(14.59-12.78)	12.14(13.37-10.93)
2009	both	91.08(96.86-85.97)	52.54(54.48-50.70)	35.29(36.90-33.73)	26.62(28.47-24.91)	22.17(24.54-19.67)	10.87(11.06-10.62)	14.90(15.42-14.38)	14.54(15.20-13.97)	13.53(14.47-12.73)	12.09(13.33-10.86)
2010	both	90.42(96.04-85.41)	53.42(55.58-51.40)	35.80(37.51-34.06)	26.99(29.01-25.34)	22.25(24.87-19.80)	10.65(10.83-10.38)	14.73(15.29-14.19)	14.38(15.10-13.71)	13.58(14.46-12.76)	12.07(13.34-10.84)
2011	both	89.80(95.41-84.77)	53.11(55.21-51.07)	35.79(37.58-34.18)	27.13(29.10-25.45)	22.30(24.86-19.87)	10.46(10.65-10.21)	14.29(14.84-13.80)	14.06(14.75-13.44)	13.53(14.47-12.69)	12.04(13.32-10.78)
2012	both	88.55(94.11-83.55)	52.86(55.06-50.80)	35.67(37.53-34.10)	26.90(28.76-25.18)	22.28(24.91-19.82)	10.19(10.40-9.94)	13.93(14.43-13.42)	13.76(14.38-13.15)	13.26(14.16-12.42)	11.95(13.24-10.66)
2013	both	88.51(94.14-83.41)	53.67(55.67-51.55)	35.93(37.70-34.24)	27.08(29.06-25.28)	22.46(25.31-19.85)	10.07(10.31-9.80)	13.89(14.40-13.37)	13.69(14.36-13.06)	13.23(14.18-12.38)	11.97(13.33-10.62)
2014	both	89.07(94.97-83.94)	55.02(57.24-52.82)	36.28(38.10-34.52)	27.17(29.24-25.42)	22.42(25.00-19.74)	10.07(10.34-9.81)	13.99(14.57-13.39)	13.63(14.28-12.94)	13.16(14.07-12.27)	11.89(13.33-10.48)
2015	both	89.97(95.88-84.65)	56.24(58.86-53.60)	36.41(38.39-34.39)	27.31(29.49-25.43)	22.44(25.25-19.79)	10.09(10.37-9.85)	14.13(14.74-13.50)	13.52(14.26-12.84)	13.13(14.12-12.18)	11.86(13.35-10.50)
2016	both	91.31(97.53-85.87)	56.89(59.84-53.94)	36.89(39.05-34.81)	27.55(30.06-25.34)	22.54(25.41-19.90)	10.19(10.51-9.92)	14.16(14.92-13.50)	13.56(14.35-12.81)	13.18(14.18-12.20)	11.86(13.34-10.43)
2017	both	91.73(98.88-85.21)	58.48(62.12-55.13)	38.15(40.70-35.69)	28.01(30.57-25.64)	22.73(25.68-19.82)	10.19(10.54-9.89)	14.31(15.14-13.54)	13.73(14.65-12.83)	13.29(14.46-12.19)	11.90(13.50-10.33)
2018	both	91.79(99.61-84.34)	60.62(64.83-56.49)	39.79(42.77-36.98)	29.01(31.69-26.38)	23.11(26.37-19.84)	10.14(10.53-9.79)	14.65(15.60-13.76)	14.03(15.10-12.95)	13.59(14.89-12.44)	12.00(13.60-10.50)
2019	both	91.81(100.22-83.47)	62.15(67.62-57.07)	40.83(44.29-37.63)	29.61(32.53-26.78)	23.21(26.47-20.01)	10.10(10.52-9.74)	14.89(15.97-13.81)	14.16(15.32-13.09)	13.72(15.07-12.47)	11.97(13.65-10.42)

SDI, socio-demographic index.

Supplementary Table S5. Incident rates (A) and death rates (B) among 15-39 year-olds in different regions from 1990 to 2019.

A

Year	Gender	Incidence rate (per 100,000) NO. 95% UI									
		Western Sub-Saharan Africa		Tropical Latin America	Southern Latin America	High-income North America	High-income Asia Pacific	Eastern Europe	East Asia	Central Latin America	Central Europe
1990	both	16.34(19.54-13.47)	68.07(70.50-64.32)	36.84(39.59-34.87)	48.58(51.18-46.07)	116.25(132.07-104.05)	45.81(47.74-43.73)	51.69(53.52-49.19)	36.10(40.98-31.76)	32.54(34.34-31.08)	55.11(57.04-53.28)
1991	both	16.45(19.47-13.71)	70.41(72.97-66.80)	36.52(39.06-34.58)	48.50(51.11-45.81)	117.89(134.03-105.54)	45.76(47.78-43.68)	53.50(55.22-51.16)	36.51(40.65-32.41)	32.73(34.61-31.30)	55.49(57.40-53.55)
1992	both	16.60(19.78-13.82)	71.76(74.34-68.26)	36.67(39.01-34.92)	49.17(51.85-46.49)	119.47(135.92-106.86)	45.92(47.84-43.93)	56.16(57.71-54.11)	36.58(40.57-33.19)	33.05(34.89-31.57)	55.32(57.42-53.23)
1993	both	16.68(20.04-13.80)	73.53(76.27-69.97)	37.28(39.56-35.57)	49.65(52.49-47.01)	122.24(138.63-109.38)	46.26(48.19-44.17)	60.99(62.65-59.23)	36.75(40.26-33.36)	33.83(35.65-32.33)	54.52(56.50-52.46)
1994	both	16.67(19.97-13.82)	74.60(77.25-71.18)	37.60(39.83-35.96)	50.28(53.30-47.62)	123.30(139.85-110.44)	46.67(48.61-44.64)	62.82(64.56-60.93)	38.23(41.50-34.95)	34.85(36.68-33.40)	54.43(56.37-52.52)
1995	both	16.62(20.19-13.59)	75.85(78.52-72.43)	38.16(40.30-36.53)	50.59(53.63-47.91)	123.68(140.01-110.99)	47.66(49.67-45.59)	61.16(62.88-59.37)	39.96(43.57-36.38)	35.26(37.11-33.70)	54.53(56.34-52.75)
1996	both	16.60(20.31-13.92)	76.71(79.23-73.19)	38.82(40.82-37.24)	51.28(54.45-48.53)	122.20(137.91-109.59)	47.93(49.97-45.77)	57.31(58.75-55.63)	41.12(44.44-37.80)	35.55(37.33-34.07)	53.66(55.40-51.84)
1997	both	16.71(20.09-13.77)	78.49(81.10-74.84)	39.28(41.20-37.66)	51.42(54.86-48.57)	119.84(135.26-107.83)	48.89(50.99-46.59)	53.30(54.81-51.45)	42.23(45.50-38.89)	35.82(37.56-34.37)	53.73(55.49-52.00)
1998	both	16.81(20.47-13.82)	80.08(82.76-76.33)	39.79(41.62-38.28)	51.47(54.96-48.60)	115.97(130.36-104.74)	50.59(52.86-47.98)	51.39(52.96-49.50)	44.14(47.43-40.95)	36.17(37.96-34.69)	52.69(54.46-51.00)
1999	both	16.82(20.29-13.61)	81.58(84.25-77.84)	40.22(42.02-38.59)	51.63(55.26-48.58)	113.11(126.50-102.31)	51.15(53.46-48.30)	53.25(54.69-51.63)	45.39(48.91-42.17)	36.29(38.11-34.77)	52.52(54.25-50.84)
2000	both	16.77(20.20-13.61)	82.36(85.07-78.87)	40.35(42.10-38.80)	50.58(54.34-47.59)	111.97(125.24-101.30)	50.99(53.31-48.03)	53.46(54.89-51.94)	46.83(50.76-43.22)	36.17(38.00-34.63)	51.81(53.59-50.17)
2001	both	17.01(20.61-13.83)	82.78(85.57-79.20)	40.58(42.29-38.98)	51.15(55.01-47.86)	115.28(128.84-104.74)	50.68(53.03-47.65)	52.28(53.69-50.78)	47.44(51.37-44.04)	36.30(38.13-34.78)	51.62(53.26-49.95)
2002	both	17.00(20.83-13.75)	83.79(86.71-80.13)	40.87(42.57-39.30)	50.15(54.06-46.91)	122.07(135.98-111.25)	51.55(54.00-48.25)	51.78(53.26-50.40)	45.72(49.22-42.30)	36.82(38.68-35.25)	51.76(53.51-50.00)
2003	both	17.01(20.92-13.66)	84.85(87.96-81.03)	41.08(42.76-39.39)	49.88(53.84-46.69)	129.16(143.75-117.59)	53.80(56.20-50.22)	52.35(54.18-51.04)	44.33(47.35-41.37)	36.93(38.81-35.34)	52.55(54.41-50.68)
2004	both	17.05(20.84-13.93)	84.17(87.23-80.24)	41.45(43.13-39.82)	49.53(53.63-46.26)	133.91(148.62-121.65)	55.67(58.21-51.54)	53.28(55.42-52.00)	44.71(47.89-41.93)	36.69(38.56-35.06)	52.92(54.72-51.04)
2005	both	17.07(21.03-13.70)	83.84(86.96-79.67)	41.39(43.05-39.75)	49.53(53.61-46.27)	135.75(150.64-122.95)	56.73(59.25-52.36)	56.31(58.93-54.64)	44.42(47.63-41.33)	37.08(39.00-35.47)	53.88(55.77-51.97)
2006	both	16.97(20.99-13.49)	83.25(86.21-79.01)	41.89(43.72-40.18)	50.07(54.36-46.77)	134.98(149.78-122.18)	57.14(59.76-52.28)	55.33(57.99-53.96)	44.04(47.02-41.20)	37.54(39.51-35.88)	54.29(56.25-52.38)
2007	both	16.97(20.87-13.50)	83.90(86.90-79.68)	42.33(44.09-40.63)	52.06(56.22-48.73)	133.80(148.63-121.09)	59.16(61.85-53.56)	56.25(59.00-54.89)	44.55(47.60-41.91)	37.51(39.45-35.92)	55.61(57.77-53.60)
2008	both	16.87(20.75-13.44)	84.65(87.77-80.24)	42.80(44.61-40.98)	52.04(56.32-48.59)	133.48(147.98-120.94)	61.51(64.17-55.64)	58.84(61.62-57.30)	45.84(48.91-43.05)	38.53(40.54-36.92)	56.70(58.98-54.60)
2009	both	17.05(20.93-13.80)	84.84(88.08-80.54)	43.54(45.41-41.75)	54.24(58.93-50.51)	133.78(147.94-121.38)	62.89(65.69-56.82)	58.24(60.37-56.93)	47.78(51.01-44.52)	39.50(41.55-37.76)	57.99(60.37-55.61)
2010	both	17.31(21.46-13.87)	83.62(86.97-78.96)	43.96(45.90-42.24)	54.24(59.23-50.51)	132.51(146.69-120.30)	63.03(65.81-56.85)	60.17(62.28-58.84)	49.25(53.36-45.50)	39.60(41.61-37.90)	58.29(60.80-55.86)
2011	both	17.74(21.98-14.12)	82.60(86.09-77.99)	44.74(46.74-42.90)	55.03(60.22-51.18)	131.84(145.91-119.58)	62.53(65.40-56.34)	59.35(61.20-57.92)	48.96(52.95-45.48)	39.55(41.56-37.85)	58.78(61.38-56.25)
2012	both	17.99(21.92-14.52)	80.86(84.36-76.48)	45.32(47.38-43.61)	56.12(61.37-52.23)	131.22(145.22-119.03)	59.80(62.55-53.93)	60.71(62.56-59.18)	48.27(52.12-44.64)	39.78(41.80-38.03)	59.73(62.49-57.01)
2013	both	18.17(22.58-14.63)	80.62(84.13-76.06)	45.91(48.14-43.94)	56.93(61.98-52.95)	131.13(145.41-118.74)	58.46(61.24-53.04)	63.95(65.97-62.43)	48.90(52.88-45.04)	40.71(42.76-38.97)	60.25(63.14-57.42)
2014	both	18.26(22.42-14.78)	79.92(83.64-75.19)	46.16(48.52-44.21)	56.60(61.77-52.58)	131.98(146.48-119.48)	57.72(60.36-52.54)	67.47(69.73-65.75)	50.84(55.12-46.98)	42.54(44.64-40.65)	61.93(65.02-58.69)
2015	both	18.07(22.23-14.24)	80.92(84.50-76.25)	46.69(49.22-44.56)	58.17(63.51-53.82)	133.52(148.83-120.73)	55.96(58.71-51.13)	72.25(74.87-70.49)	51.45(56.45-46.45)	42.97(45.46-40.53)	63.42(66.63-60.29)
2016	both	18.25(22.77-14.49)	80.79(84.48-76.12)	47.76(50.45-45.42)	60.19(65.62-55.60)	136.21(152.29-122.61)	55.45(58.28-50.60)	71.68(74.27-69.74)	52.49(57.91-47.07)	43.43(46.42-40.62)	63.84(67.45-60.47)
2017	both	18.32(22.56-14.52)	81.39(88.53-74.94)	47.56(50.54-45.07)	61.28(70.61-53.02)	136.03(152.04-122.22)	54.47(57.68-49.75)	71.21(74.19-68.50)	55.84(62.39-49.47)	44.42(48.34-40.54)	64.68(69.64-60.33)
2018	both	18.30(22.97-14.49)	82.37(92.63-73.33)	48.22(51.49-45.37)	62.13(75.29-50.59)	134.02(150.54-119.24)	54.88(59.97-49.37)	72.56(79.14-66.56)	59.29(66.66-52.15)	45.02(50.76-39.47)	65.65(73.45-58.81)
2019	both	18.21(22.72-14.44)	82.45(93.23-72.56)	48.74(52.33-45.59)	62.88(79.84-48.89)	132.52(149.66-115.94)	55.31(62.07-48.79)	73.85(83.76-65.20)	61.86(70.67-53.40)	44.37(51.44-38.10)	66.39(75.64-57.95)

Supplementary Table S5 (continued). Incident rates (A) and death rates (B) among 15-39 year-olds in different regions from 1990 to 2019.

A (continued)

Year	Gender	Incidence rate (per 100,000) NO. 95% UI											
		Central Asia		Caribbean	Australasia	Andean Latin America	Southern Sub-Saharan Africa		South Asia	Oceania	Eastern Sub-Saharan Africa	Central Sub-Saharan Africa	North Africa and Middle East
1990	both	41.74(43.56-39.90)	36.35(39.33-32.60)	77.18(82.55-71.43)	31.28(34.67-28.27)	34.11(38.49-30.72)	28.77(32.23-24.98)	21.10(23.26-18.91)	29.96(35.51-24.89)	23.98(28.40-19.97)	20.88(26.15-16.08)	23.59(25.89-21.48)	
1991	both	42.65(44.36-40.94)	36.87(39.85-33.23)	77.83(83.21-72.11)	30.81(34.09-27.95)	33.99(38.52-30.67)	29.18(32.53-25.61)	21.03(23.05-18.94)	30.28(35.85-24.90)	24.04(28.34-19.96)	21.11(26.19-16.29)	23.69(25.90-21.59)	
1992	both	44.86(46.83-42.92)	37.82(40.83-34.20)	78.95(84.63-73.34)	32.17(35.89-28.94)	36.25(40.86-32.91)	29.51(33.00-25.83)	21.10(23.12-19.06)	30.50(36.05-25.07)	24.06(28.29-19.93)	20.95(26.26-16.31)	23.90(26.13-21.85)	
1993	both	46.23(48.52-44.15)	38.75(41.77-35.04)	79.68(85.34-73.75)	32.57(35.95-29.60)	32.83(36.58-29.41)	30.00(33.37-26.40)	21.23(23.18-19.26)	30.39(36.41-24.83)	24.05(28.10-20.05)	20.70(25.77-16.12)	24.17(26.35-22.11)	
1994	both	47.53(49.91-45.37)	38.55(41.42-35.02)	82.12(88.34-76.09)	33.55(37.39-30.51)	33.26(37.07-30.09)	30.53(33.83-26.80)	21.50(23.54-19.55)	30.35(36.76-24.71)	23.99(28.18-20.11)	20.50(25.42-16.01)	24.32(26.57-22.20)	
1995	both	46.55(48.66-44.63)	39.51(42.45-36.00)	84.26(90.86-78.17)	33.87(37.57-30.67)	30.84(34.98-27.54)	31.38(34.83-27.58)	21.58(23.43-19.58)	30.56(36.82-24.69)	23.80(27.67-19.98)	20.50(25.25-16.16)	24.52(26.71-22.49)	
1996	both	45.99(48.00-44.16)	39.75(42.69-36.33)	85.96(92.55-79.78)	33.63(36.48-30.98)	27.68(32.11-24.26)	32.29(35.93-28.47)	21.62(23.32-19.77)	31.12(37.59-25.26)	23.67(27.51-19.88)	20.45(25.27-16.32)	24.80(27.07-22.73)	
1997	both	45.25(47.33-43.42)	40.26(43.08-36.83)	88.95(95.90-82.24)	34.40(37.36-31.60)	29.58(33.77-26.03)	32.33(35.99-28.47)	22.34(24.29-20.53)	31.32(37.87-24.81)	23.57(27.34-19.79)	19.76(24.22-15.74)	24.88(27.08-22.88)	
1998	both	44.29(46.21-42.52)	41.21(44.00-37.97)	91.70(99.50-84.74)	35.23(38.80-32.31)	30.24(35.04-26.43)	32.65(36.60-28.66)	22.88(24.94-20.86)	31.71(38.45-25.32)	23.61(27.27-20.02)	19.87(24.44-15.91)	24.86(26.99-22.91)	
1999	both	43.29(45.06-41.54)	41.58(44.46-38.45)	92.78(101.31-86.19)	34.91(38.78-31.64)	31.77(36.90-27.62)	33.21(36.84-29.29)	23.43(25.44-21.56)	32.30(39.47-25.62)	23.34(26.94-19.94)	20.20(24.54-16.35)	25.13(27.26-23.20)	
2000	both	42.87(44.67-41.25)	42.01(44.83-39.05)	91.80(99.63-84.96)	35.39(39.56-31.81)	35.60(41.84-30.88)	33.41(36.93-29.70)	23.80(26.01-21.68)	32.38(39.65-25.72)	22.92(26.33-19.51)	20.13(24.33-16.47)	25.36(27.32-23.47)	
2001	both	42.00(43.80-40.47)	42.43(45.44-39.30)	88.41(96.72-81.98)	35.01(38.97-31.40)	36.11(43.42-30.85)	33.49(36.95-29.82)	23.87(26.04-21.91)	32.60(40.22-25.69)	22.37(25.54-19.27)	19.91(23.87-16.20)	25.59(27.58-23.69)	
2002	both	40.91(42.68-39.38)	41.91(44.90-38.66)	87.93(96.48-81.73)	36.72(40.79-32.82)	38.17(46.71-32.21)	33.92(37.25-30.40)	23.66(25.68-21.77)	32.97(41.04-26.02)	22.19(25.35-19.26)	19.76(23.92-16.16)	25.42(27.50-23.44)	
2003	both	39.82(41.61-38.29)	42.36(45.44-38.93)	87.41(96.46-81.22)	37.75(41.90-33.71)	39.84(49.54-32.83)	34.19(37.60-30.74)	22.91(24.81-21.17)	32.91(41.16-26.20)	22.24(25.19-19.39)	20.08(24.08-16.36)	25.45(27.52-23.44)	
2004	both	39.18(41.17-37.69)	42.03(45.33-38.43)	88.07(95.44-81.52)	37.18(41.50-33.33)	40.21(50.68-32.53)	33.71(36.94-30.27)	22.86(24.66-21.14)	32.95(41.23-26.20)	22.31(25.34-19.55)	20.01(24.16-16.33)	25.80(27.93-23.76)	
2005	both	39.78(41.97-38.17)	42.06(45.64-38.08)	86.02(93.28-79.58)	37.30(41.45-33.55)	39.17(49.32-31.91)	33.35(36.64-30.12)	23.38(25.24-21.60)	33.38(42.03-26.41)	22.30(25.42-19.48)	19.83(23.95-16.14)	26.37(28.48-24.36)	
2006	both	39.67(41.99-37.87)	41.79(46.20-37.48)	85.68(92.56-79.33)	36.86(40.77-32.99)	38.65(49.87-31.06)	33.02(36.20-29.93)	23.73(25.54-22.08)	33.39(41.90-26.35)	22.15(25.13-19.38)	19.69(23.86-15.88)	26.86(29.00-24.85)	
2007	both	39.66(41.96-37.82)	41.33(45.80-36.92)	89.01(96.08-82.19)	36.54(40.10-32.89)	36.62(46.94-29.17)	32.88(35.84-29.82)	23.79(25.71-22.01)	33.74(42.05-26.69)	22.06(25.00-19.18)	19.37(23.65-15.70)	27.18(29.32-25.07)	
2008	both	39.41(41.58-37.68)	41.16(46.20-36.64)	90.50(98.46-83.61)	37.61(41.31-34.10)	36.20(46.61-28.59)	32.99(35.92-29.95)	24.15(26.09-22.36)	33.43(41.88-26.47)	21.93(24.95-19.03)	19.31(23.61-15.66)	27.67(29.89-25.48)	
2009	both	38.71(40.52-37.29)	40.29(45.24-35.63)	91.56(99.50-84.78)	39.72(43.63-36.04)	34.65(44.13-26.95)	33.07(36.10-30.15)	24.27(26.04-22.53)	32.97(41.36-25.75)	21.92(25.06-18.96)	19.29(23.57-15.58)	28.38(30.73-26.14)	
2010	both	38.69(40.42-37.32)	39.33(43.92-34.94)	90.28(98.28-83.57)	40.23(44.87-35.44)	32.57(41.51-25.20)	33.06(36.04-29.82)	24.73(26.78-23.00)	33.96(42.46-27.02)	22.04(25.34-18.83)	19.37(23.74-15.62)	29.24(31.73-26.99)	
2011	both	39.06(40.70-37.64)	39.81(44.35-35.34)	89.16(97.24-82.29)	40.32(45.61-34.89)	30.26(38.72-23.37)	33.09(36.39-29.93)	24.84(26.71-22.91)	34.56(43.03-27.46)	22.13(25.61-18.98)	19.49(23.89-15.57)	30.03(32.60-27.74)	
2012	both	39.48(41.17-38.12)	40.22(44.77-35.89)	86.30(94.98-79.62)	40.49(45.00-35.62)	29.94(37.81-23.51)	33.20(36.52-30.04)	24.52(26.43-22.78)	34.38(43.35-27.32)	22.16(25.73-18.90)	19.49(23.88-15.67)	30.69(33.45-28.37)	
2013	both	39.30(41.01-37.93)	40.55(45.13-36.08)	85.66(94.38-79.28)	39.95(44.32-35.42)	29.73(37.33-23.27)	33.41(37.00-29.94)	24.75(26.66-22.90)	33.89(42.64-26.90)	22.37(26.10-18.88)	19.59(24.04-15.73)	31.24(34.08-28.71)	
2014	both	39.31(40.93-37.79)	41.01(46.02-36.17)	87.17(97.19-80.79)	38.90(43.46-34.41)	29.91(37.69-23.56)	33.66(37.33-30.25)	24.29(26.36-22.47)	34.07(42.31-27.00)	22.51(26.33-18.84)	19.59(24.35-15.51)	31.93(34.84-29.24)	
2015	both	39.47(41.31-37.78)	41.65(47.50-36.40)	88.16(98.78-81.37)	39.12(44.89-33.35)	29.19(36.97-22.86)	34.00(37.75-30.16)	24.28(26.21-22.34)	34.79(43.30-27.32)	22.60(26.71-18.99)	19.54(24.45-15.21)	32.67(35.74-29.88)	
2016	both	40.18(42.30-38.16)	42.30(48.41-36.70)	88.13(98.96-81.41)	40.11(47.08-33.26)	27.99(35.87-21.58)	34.41(38.55-30.83)	24.55(26.57-22.59)	34.47(43.11-27.03)	22.86(27.29-18.81)	19.58(24.61-15.25)	33.42(36.90-30.13)	
2017	both	40.81(43.73-37.90)	42.56(49.76-36.21)	89.18(103.21-78.48)	40.94(49.66-33.18)	28.69(37.41-22.14)	34.93(39.82-30.81)	24.96(27.52-22.70)	35.09(44.46-27.55)	23.11(27.71-18.71)	19.83(25.00-15.34)	34.33(38.30-30.64)	
2018	both	41.84(45.59-38.30)	42.90(51.00-35.65)	90.05(107.22-76.08)	41.66(51.23-33.61)	32.90(41.69-25.27)	35.59(40.59-31.40)	26.27(29.08-23.48)	36.18(46.08-28.22)	23.47(28.35-19.30)	20.16(25.45-15.58)	35.31(39.62-31.24)	
2019	both	43.02(47.87-38.74)	43.38(51.75-35.56)	90.78(110.47-73.76)	42.56(52.99-34.03)	35.52(43.91-28.09)	36.09(41.13-31.54)	27.07(30.48-23.98)	36.32(46.58-28.73)	23.61(28.75-18.96)	20.20(25.76-15.44)	35.95(40.58-31.68)	

Supplementary Table S5. Incident rates (A) and death rates (B) among 15-39 year-olds in different regions from 1990 to 2019.

B

Year	Gender	Incidence rate (per 100,000) NO. 95% UI									
		Western Sub-Saharan Africa		Tropical Latin America	Southern Latin America	High-income North America	High-income Asia Pacific	Eastern Europe	East Asia	Central Latin America	Central Europe
1990	both	8.97(10.63-7.47)	14.62(14.83-14.28)	14.24(15.14-13.78)	18.52(19.05-18.05)	14.44(14.66-14.02)	14.66(14.95-14.14)	20.41(21.13-19.56)	20.98(23.73-18.35)	13.86(14.42-13.60)	20.74(21.15-20.36)
1991	both	9.02(10.68-7.54)	14.65(14.87-14.29)	14.01(14.77-13.58)	18.30(18.81-17.81)	14.39(14.60-13.95)	14.32(14.60-13.82)	21.13(21.81-20.31)	20.96(23.61-18.59)	13.87(14.42-13.61)	20.66(21.11-20.22)
1992	both	9.07(10.71-7.58)	14.45(14.64-14.08)	13.98(14.69-13.55)	18.14(18.65-17.70)	14.32(14.54-13.92)	13.98(14.24-13.49)	22.34(22.88-21.62)	20.88(23.44-18.62)	13.87(14.42-13.59)	20.30(20.85-19.76)
1993	both	9.10(10.62-7.52)	14.22(14.40-13.85)	14.17(14.94-13.78)	17.96(18.43-17.50)	14.39(14.64-14.01)	13.69(13.95-13.23)	24.81(25.43-24.15)	20.73(23.10-18.35)	13.96(14.45-13.70)	19.64(20.19-19.11)
1994	both	9.08(10.70-7.45)	14.05(14.24-13.66)	14.18(14.87-13.78)	17.85(18.34-17.40)	14.30(14.55-13.93)	13.49(13.74-13.04)	26.15(26.90-25.48)	21.39(23.57-19.31)	14.01(14.46-13.76)	19.23(19.74-18.75)
1995	both	9.05(10.74-7.51)	13.94(14.12-13.54)	14.29(14.95-13.93)	17.68(18.16-17.25)	14.13(14.40-13.77)	13.31(13.57-12.90)	25.43(26.11-24.81)	22.07(24.07-20.04)	13.87(14.27-13.56)	18.92(19.27-18.52)
1996	both	9.02(10.67-7.47)	13.80(13.98-13.39)	14.43(15.02-14.10)	17.58(18.07-17.16)	13.85(14.09-13.48)	13.09(13.34-12.72)	23.35(23.89-22.73)	22.24(24.22-20.32)	13.77(14.08-13.54)	18.15(18.44-17.78)
1997	both	9.05(10.83-7.45)	13.76(13.94-13.35)	14.41(14.90-14.06)	17.17(17.61-16.78)	13.59(13.85-13.24)	12.87(13.11-12.52)	21.30(21.80-20.65)	22.34(24.20-20.36)	13.70(13.98-13.45)	17.72(18.01-17.37)
1998	both	9.08(10.79-7.40)	13.57(13.74-13.14)	14.38(14.78-14.03)	16.77(17.21-16.41)	13.14(13.40-12.81)	12.75(12.97-12.43)	20.13(20.69-19.49)	22.93(24.79-21.06)	13.64(13.94-13.37)	16.94(17.18-16.57)
1999	both	9.08(11.04-7.38)	13.42(13.60-12.98)	14.34(14.70-13.99)	16.43(16.85-16.07)	12.77(13.05-12.46)	12.46(12.66-12.14)	20.53(21.07-19.98)	23.26(25.01-21.61)	13.50(13.75-13.24)	16.43(16.66-16.05)
2000	both	9.02(10.86-7.33)	13.33(13.51-12.86)	14.21(14.56-13.78)	15.99(16.37-15.63)	12.53(12.82-12.26)	12.08(12.27-11.76)	20.39(20.96-19.87)	23.51(25.42-21.75)	13.33(13.57-13.05)	15.79(16.04-15.39)
2001	both	9.10(11.04-7.29)	13.14(13.32-12.67)	14.14(14.48-13.74)	15.83(16.21-15.46)	12.42(12.76-12.20)	11.61(11.80-11.27)	19.71(20.29-19.21)	23.13(25.08-21.28)	13.20(13.44-12.91)	15.40(15.66-14.99)
2002	both	9.04(11.02-7.36)	12.89(13.07-12.41)	14.09(14.38-13.70)	15.40(15.76-15.03)	12.17(12.56-11.98)	11.29(11.47-10.96)	19.26(19.88-18.80)	21.63(23.41-20.02)	13.28(13.53-12.99)	15.14(15.40-14.69)
2003	both	9.00(10.90-7.29)	12.57(12.75-12.11)	13.97(14.27-13.57)	14.97(15.30-14.61)	11.83(12.21-11.64)	11.16(11.32-10.88)	19.02(19.75-18.62)	20.40(21.92-18.91)	13.27(13.52-12.95)	15.11(15.35-14.62)
2004	both	8.97(10.86-7.26)	12.23(12.42-11.74)	13.95(14.27-13.56)	14.70(15.03-14.32)	11.46(11.85-11.26)	11.00(11.16-10.71)	18.87(19.73-18.51)	19.81(21.29-18.43)	13.12(13.39-12.79)	15.00(15.26-14.46)
2005	both	8.89(10.75-7.14)	11.94(12.12-11.44)	13.73(14.05-13.33)	14.54(14.86-14.14)	11.27(11.68-11.07)	10.79(10.94-10.50)	19.39(20.38-18.89)	18.91(20.23-17.59)	13.09(13.36-12.76)	15.06(15.30-14.54)
2006	both	8.80(10.80-7.09)	11.70(11.89-11.18)	13.77(14.09-13.35)	14.48(14.81-14.11)	11.14(11.55-10.96)	10.55(10.72-10.23)	18.53(19.50-18.18)	17.93(19.22-16.71)	13.12(13.39-12.80)	14.92(15.18-14.38)
2007	both	8.77(10.60-7.01)	11.54(11.73-11.03)	13.82(14.14-13.40)	14.82(15.15-14.48)	10.88(11.27-10.70)	10.48(10.65-10.18)	18.34(19.22-18.00)	17.29(18.63-16.17)	12.99(13.26-12.68)	14.97(15.21-14.46)
2008	both	8.70(10.64-6.90)	11.37(11.56-10.85)	13.89(14.22-13.47)	14.78(15.12-14.44)	10.67(11.04-10.49)	10.50(10.65-10.21)	18.49(19.28-18.13)	17.02(18.33-15.90)	13.22(13.47-12.93)	14.87(15.13-14.36)
2009	both	8.79(10.76-7.09)	11.18(11.37-10.66)	14.06(14.37-13.70)	15.02(15.37-14.68)	10.53(10.89-10.35)	10.45(10.62-10.17)	17.65(18.22-17.34)	16.90(18.17-15.82)	13.44(13.70-13.17)	14.81(15.07-14.29)
2010	both	8.88(10.66-7.05)	10.91(11.09-10.38)	14.03(14.36-13.67)	14.88(15.24-14.54)	10.25(10.62-10.06)	10.25(10.42-9.94)	17.78(18.30-17.50)	16.63(18.03-15.37)	13.32(13.59-13.04)	14.54(14.81-14.00)
2011	both	9.02(11.07-7.22)	10.63(10.82-10.11)	14.12(14.46-13.78)	14.88(15.23-14.54)	10.10(10.47-9.92)	9.99(10.15-9.64)	17.25(17.68-16.90)	15.91(17.36-14.70)	13.14(13.42-12.85)	14.38(14.66-13.83)
2012	both	9.12(11.09-7.44)	10.31(10.51-9.77)	14.14(14.47-13.82)	14.96(15.31-14.60)	9.95(10.35-9.77)	9.56(9.75-9.17)	17.34(17.76-16.98)	15.20(16.47-14.01)	13.06(13.32-12.77)	14.34(14.63-13.79)
2013	both	9.24(11.25-7.55)	10.10(10.30-9.55)	14.19(14.54-13.86)	14.99(15.35-14.61)	9.91(10.35-9.71)	9.21(9.41-8.80)	17.85(18.27-17.49)	15.01(16.30-13.78)	13.26(13.53-12.96)	14.16(14.47-13.58)
2014	both	9.35(11.29-7.57)	9.94(10.16-9.38)	14.14(14.52-13.81)	14.80(15.19-14.40)	10.00(10.50-9.77)	8.95(9.16-8.51)	18.31(18.70-17.94)	15.19(16.60-13.82)	13.75(14.06-13.42)	14.35(14.67-13.73)
2015	both	9.29(11.32-7.50)	9.89(10.11-9.33)	14.16(14.53-13.82)	14.89(15.31-14.44)	10.21(10.79-9.89)	8.64(8.90-8.15)	19.63(20.16-19.23)	15.09(16.66-13.65)	13.83(14.39-13.31)	14.45(14.76-13.87)
2016	both	9.36(11.39-7.48)	9.84(10.09-9.28)	14.30(14.64-13.96)	15.18(15.64-14.69)	10.49(11.21-10.03)	8.46(8.75-7.97)	19.23(19.71-18.83)	15.25(17.11-13.65)	13.90(14.69-13.24)	14.31(14.67-13.71)
2017	both	9.36(11.51-7.48)	9.88(10.16-9.32)	13.94(14.31-13.58)	15.26(15.82-14.72)	10.40(11.11-9.90)	8.33(8.66-7.83)	18.80(19.48-18.13)	15.74(17.70-13.87)	14.13(15.32-13.08)	14.36(15.22-13.58)
2018	both	9.28(11.41-7.35)	10.03(10.32-9.46)	13.99(14.46-13.55)	15.24(15.84-14.64)	10.02(10.64-9.56)	8.39(8.73-7.94)	19.09(20.66-17.62)	16.26(18.47-14.18)	14.18(16.03-12.57)	14.47(16.07-13.07)
2019	both	9.18(11.38-7.16)	10.12(10.42-9.55)	14.00(14.57-13.46)	15.24(15.92-14.57)	9.74(10.36-9.28)	8.45(8.80-7.97)	19.38(21.66-17.38)	16.60(18.94-14.33)	13.84(16.11-11.77)	14.56(16.51-12.73)

Supplementary Table S5 (continued). Incident rates (A) and death rates (B) among 15-39 year-olds in different regions from 1990 to 2019.

B (continued)

Year	Gender	Incidence rate (per 100,000) NO. 95% UI										
		Central Asia	Caribbean	Australasia	Andean Latin America	Southern Sub-Saharan Africa	Southeast Asia	South Asia	Oceania	Eastern Sub-Saharan Africa	Central Sub-Saharan Africa	North Africa and Middle East
1990	both	19.90(20.49-19.37)	15.20(16.69-13.25)	13.69(14.12-13.28)	15.85(17.57-14.27)	16.48(18.14-15.06)	15.55(17.26-13.60)	12.24(13.39-11.05)	16.31(19.15-13.50)	13.20(15.37-10.92)	11.54(13.97-9.27)	12.29(13.57-11.01)
1991	both	20.44(21.00-19.91)	15.11(16.55-13.25)	13.59(14.01-13.18)	15.51(17.18-14.11)	16.37(17.99-15.02)	15.66(17.35-13.70)	12.19(13.30-11.06)	16.44(19.39-13.55)	13.22(15.43-10.99)	11.65(14.03-9.28)	12.20(13.43-10.99)
1992	both	21.72(22.45-21.06)	15.30(16.74-13.50)	13.41(13.80-13.01)	16.06(17.79-14.49)	17.37(19.23-16.00)	15.79(17.41-13.89)	12.26(13.32-11.12)	16.51(19.58-13.57)	13.22(15.32-11.03)	11.56(13.96-9.36)	12.18(13.41-10.99)
1993	both	22.48(23.36-21.70)	15.49(16.97-13.65)	13.29(13.67-12.88)	16.12(17.69-14.73)	15.68(17.09-14.28)	15.98(17.59-14.03)	12.26(13.31-11.20)	16.39(19.54-13.33)	13.19(15.28-11.06)	11.44(13.77-9.37)	12.18(13.38-11.00)
1994	both	23.15(24.08-22.32)	15.31(16.71-13.52)	13.31(13.73-12.91)	16.38(18.18-14.82)	15.86(17.30-14.43)	16.19(17.80-14.25)	12.36(13.38-11.33)	16.30(19.68-13.24)	13.15(15.20-11.11)	11.34(13.65-9.24)	12.15(13.37-10.95)
1995	both	22.65(23.44-21.93)	15.49(16.92-13.71)	13.40(13.82-13.02)	16.40(18.19-14.84)	14.78(16.32-13.24)	16.50(18.20-14.46)	12.39(13.36-11.37)	16.33(19.69-13.19)	13.02(15.02-11.04)	11.35(13.63-9.25)	12.07(13.30-10.92)
1996	both	22.32(23.06-21.68)	15.48(16.93-13.81)	13.39(13.84-13.02)	16.18(17.46-14.87)	13.16(15.05-11.51)	16.78(18.48-14.76)	12.33(13.26-11.30)	16.57(20.01-13.40)	12.95(14.97-11.02)	11.29(13.58-9.25)	11.98(13.19-10.84)
1997	both	21.81(22.59-21.17)	15.60(17.01-13.93)	13.48(13.96-13.12)	16.18(17.49-14.94)	14.13(16.01-12.46)	16.65(18.45-14.72)	12.68(13.68-11.64)	16.63(20.22-13.26)	12.86(14.80-10.96)	10.90(13.06-8.93)	11.87(13.08-10.76)
1998	both	21.16(21.78-20.59)	15.63(17.00-14.09)	13.54(14.07-13.16)	16.15(17.70-14.83)	14.64(16.71-12.95)	16.65(18.42-14.62)	12.95(13.97-11.97)	16.80(20.47-13.37)	12.84(14.68-10.98)	10.94(13.05-9.00)	11.70(12.86-10.65)
1999	both	20.49(21.12-19.89)	15.66(16.97-14.14)	13.36(13.94-13.00)	15.75(17.41-14.26)	15.36(17.84-13.37)	16.81(18.66-14.88)	13.25(14.29-12.25)	17.05(20.88-13.45)	12.66(14.47-10.91)	11.11(13.16-9.16)	11.67(12.76-10.65)
2000	both	20.19(20.85-19.62)	15.65(16.97-14.20)	12.95(13.45-12.60)	15.77(17.52-14.17)	17.15(20.05-14.84)	16.81(18.57-14.92)	13.38(14.50-12.42)	17.01(20.74-13.46)	12.43(14.18-10.75)	11.05(13.03-9.06)	11.46(12.48-10.51)
2001	both	19.68(20.27-19.17)	15.65(17.08-14.11)	12.35(12.83-12.04)	15.41(17.11-13.84)	17.41(20.69-14.84)	16.75(18.68-14.89)	13.31(14.36-12.27)	17.10(20.87-13.52)	12.10(13.64-10.46)	10.89(12.82-9.02)	11.26(12.31-10.31)
2002	both	19.10(19.64-18.57)	15.40(16.79-13.83)	11.94(12.38-11.64)	15.86(17.73-14.19)	18.49(22.49-15.64)	16.78(18.48-15.10)	13.12(14.16-12.09)	17.31(21.34-13.76)	11.96(13.46-10.44)	10.74(12.76-8.91)	10.99(12.00-10.02)
2003	both	18.50(19.07-17.98)	15.46(16.91-13.83)	11.67(12.16-11.37)	16.03(17.70-14.31)	19.36(24.09-15.89)	16.73(18.48-15.09)	12.64(13.55-11.75)	17.33(21.47-13.90)	11.95(13.37-10.53)	10.84(12.83-8.98)	10.87(11.89-9.91)
2004	both	18.17(18.76-17.64)	15.37(16.92-13.64)	11.52(11.93-11.21)	15.64(17.37-13.99)	19.50(24.81-15.69)	16.33(17.84-14.80)	12.52(13.43-11.64)	17.39(21.71-13.92)	11.95(13.28-10.61)	10.72(12.73-9.00)	10.83(11.82-9.87)
2005	both	18.38(19.02-17.83)	15.26(17.07-13.40)	11.14(11.49-10.79)	15.59(17.26-13.94)	18.91(24.34-15.08)	16.00(17.42-14.42)	12.71(13.66-11.78)	17.63(22.07-14.12)	11.93(13.30-10.60)	10.58(12.56-8.90)	10.81(11.82-9.90)
2006	both	18.18(18.93-17.50)	15.11(17.15-13.12)	11.03(11.35-10.67)	15.29(17.01-13.70)	18.47(23.74-14.56)	15.73(17.25-14.20)	12.84(13.75-11.98)	17.62(22.02-14.05)	11.86(13.16-10.55)	10.51(12.53-8.77)	10.80(11.79-9.91)
2007	both	17.95(18.75-17.24)	15.03(17.12-12.93)	11.30(11.64-10.91)	15.03(16.50-13.52)	17.31(22.11-13.63)	15.49(16.88-14.09)	12.82(13.71-11.93)	17.79(22.25-14.20)	11.84(13.16-10.47)	10.35(12.46-8.62)	10.80(11.82-9.91)
2008	both	17.57(18.30-16.92)	14.99(17.10-12.91)	11.38(11.73-10.96)	15.34(16.83-13.82)	16.92(21.63-13.18)	15.34(16.71-14.01)	12.97(13.87-12.06)	17.62(22.02-13.96)	11.78(13.19-10.38)	10.31(12.39-8.53)	10.86(11.87-9.95)
2009	both	17.07(17.58-16.53)	14.70(16.84-12.57)	11.32(11.65-10.90)	16.10(17.67-14.46)	16.10(20.52-12.51)	15.24(16.70-13.83)	12.89(13.78-12.03)	17.37(21.87-13.80)	11.77(13.20-10.31)	10.29(12.34-8.47)	10.95(11.97-10.06)
2010	both	16.88(17.34-16.31)	14.37(16.48-12.30)	11.10(11.44-10.69)	16.17(18.09-14.22)	15.01(19.26-11.47)	15.05(16.46-13.61)	13.00(13.94-12.12)	17.84(22.25-14.35)	11.80(13.34-10.29)	10.30(12.42-8.48)	11.07(12.17-10.17)
2011	both	16.87(17.35-16.26)	14.57(16.56-12.59)	10.87(11.18-10.45)	15.92(17.99-13.79)	13.73(17.64-10.55)	14.91(16.43-13.56)	12.97(13.86-12.07)	18.08(22.54-14.47)	11.80(13.48-10.18)	10.32(12.43-8.51)	11.14(12.26-10.25)
2012	both	16.91(17.36-16.28)	14.73(16.69-12.73)	10.45(10.76-10.02)	15.68(17.60-13.64)	13.40(16.97-10.34)	14.76(16.32-13.33)	12.67(13.56-11.77)	17.93(22.56-14.46)	11.75(13.50-10.14)	10.29(12.42-8.46)	11.20(12.32-10.30)
2013	both	16.72(17.23-16.08)	14.93(17.03-12.83)	10.25(10.56-9.85)	15.20(16.81-13.41)	13.17(16.54-10.28)	14.72(16.26-13.30)	12.67(13.59-11.70)	17.67(22.24-14.20)	11.82(13.57-10.13)	10.34(12.62-8.42)	11.25(12.44-10.29)
2014	both	16.58(17.13-15.91)	15.21(17.35-12.99)	10.26(10.58-9.88)	14.61(16.40-12.79)	13.11(16.57-10.23)	14.72(16.37-13.19)	12.35(13.20-11.49)	17.73(22.23-14.13)	11.86(13.76-10.12)	10.35(12.66-8.31)	11.32(12.55-10.32)
2015	both	16.46(17.15-15.65)	15.45(17.89-13.08)	10.25(10.61-9.86)	14.41(16.47-12.34)	12.70(16.22-9.84)	14.78(16.51-13.27)	12.25(13.14-11.34)	18.05(22.50-14.36)	11.86(13.82-10.08)	10.30(12.60-8.18)	11.36(12.62-10.29)
2016	both	16.58(17.39-15.73)	15.62(18.27-13.15)	10.23(10.63-9.81)	14.43(17.07-11.89)	12.09(15.68-9.17)	14.81(16.54-13.22)	12.31(13.24-11.34)	17.82(22.35-14.05)	11.92(14.01-10.02)	10.28(12.72-8.07)	11.41(12.81-10.25)
2017	both	16.66(17.77-15.48)	15.67(18.41-13.01)	10.28(10.72-9.82)	14.56(17.53-11.73)	12.36(15.87-9.30)	14.86(16.71-13.21)	12.43(13.50-11.30)	18.02(22.72-14.25)	11.95(14.25-9.94)	10.34(12.81-8.07)	11.53(13.14-10.18)
2018	both	16.95(18.48-15.50)	15.71(18.87-12.80)	10.33(10.80-9.84)	14.65(17.88-11.66)	14.09(17.56-10.89)	14.92(17.09-13.10)	12.88(14.26-11.50)	18.43(23.52-14.48)	12.03(14.37-9.96)	10.43(12.90-8.04)	11.61(13.42-10.19)
2019	both	17.32(19.33-15.57)	15.81(18.93-12.70)	10.35(10.86-9.83)	14.84(18.70-11.72)	15.02(18.28-11.89)	14.93(16.90-13.12)	13.11(14.64-11.66)	18.42(23.71-14.61)	12.02(14.37-9.79)	10.39(13.00-7.88)	11.63(13.47-10.16)

Supplementary Table S6. Included countries (n=204) according to the five level socio-demographic index (SDI) in 2019

Low=0<SDI≤0.454743, Low-Middle= 0.454743<SDI≤0.607679, Middle=0.607679<SDI≤0.689504, High-Middle=0.689504<SDI≤0.805129, High=0.805129<SDI≤1)

Low(n=33)	Low-Middle (n=42)	Middle (n=41)	High-Middle (n=47)		High (n=41)
Pakistan	Mongolia	Thailand	Israel	Uruguay	Switzerland
Haiti	Belize	Panama	Poland	Moldova	Norway
Rwanda	Kyrgyzstan	China	Italy	Sri Lanka	Monaco
Tanzania	Dominican Republic	Equatorial Guinea	Malta	Armenia	Germany
Nepal	Tuvalu	Jamaica	Virgin Islands		Luxembourg
Togo	Palestine	Azerbaijan	The Bahamas		Andorra
Yemen	Federated States of Micronesia	Albania	Croatia		Denmark
Côte d'Ivoire	eSwatini	Costa Rica	Greece		San Marino
Solomon Islands	El Salvador	South Africa	Hungary		Netherlands
Uganda	Congo (Brazzaville)	Tunisia	Montenegro		United Arab Emirates
The Gambia	Bolivia	Iraq	Oman		South Korea
Eritrea	India	Turkmenistan	Northern Mariana Islands		Canada
Madagascar	Maldives	Saint Lucia	Serbia		Sweden
Papua New Guinea	North Korea	Iran	Spain		Japan
Senegal	Ghana	Grenada	Bulgaria		Iceland
Malawi	Morocco	Cuba	Cook Islands		Taiwan (province of China)
DR Congo	Marshall Islands	Fiji	Greenland		Ireland
Liberia	Tajikistan	Indonesia	Romania		Singapore
South Sudan	Kiribati	Egypt	Chile		USA
Guinea-Bissau	Guatemala	Gabon	Trinidad and Tobago		Finland
Benin	Cape Verde	Algeria	Bahrain		Belgium
Sierra Leone	Myanmar	Mexico	Turkey		Kuwait
Afghanistan	Nicaragua	Peru	Saint Kitts and Nevis		Austria
Ethiopia	Sudan	Samoa	Belarus		UK
Guinea	Nigeria	Ecuador	North Macedonia		Lithuania
Mozambique	Timor-Leste	Brazil	Portugal		Cyprus
Burundi	Kenya	Paraguay	Antigua and Barbuda		Slovenia
Central African Republic	Lesotho	Suriname	Barbados		New Zealand
Mali	Zambia	Tonga	Palau		Australia
Burkina Faso	São Tomé and Príncipe	Botswana	Malaysia		Estonia
Chad	Honduras	Colombia	Ukraine		France
Niger	Mauritania	Uzbekistan	Jordan		Qatar
Somalia	Laos	Saint Vincent and the Grenadines	Dominica		Czech Republic
	Cameroon	Tokelau	Seychelles		Brunei
	Vanuatu	Philippines	Kazakhstan		Latvia
	Bangladesh	Syria	Bosnia and Herzegovina		Puerto Rico
	Zimbabwe	Guyana	American Samoa		Bermuda
	Angola	Nauru	Niue		Guam
	Cambodia	Vietnam	Libya		Slovakia
	Djibouti	Namibia	Argentina		Russia
	Bhutan	Venezuela	Lebanon		Saudi Arabia
	Comoros		Mauritius		
			Georgia		