Supplementary Figure1

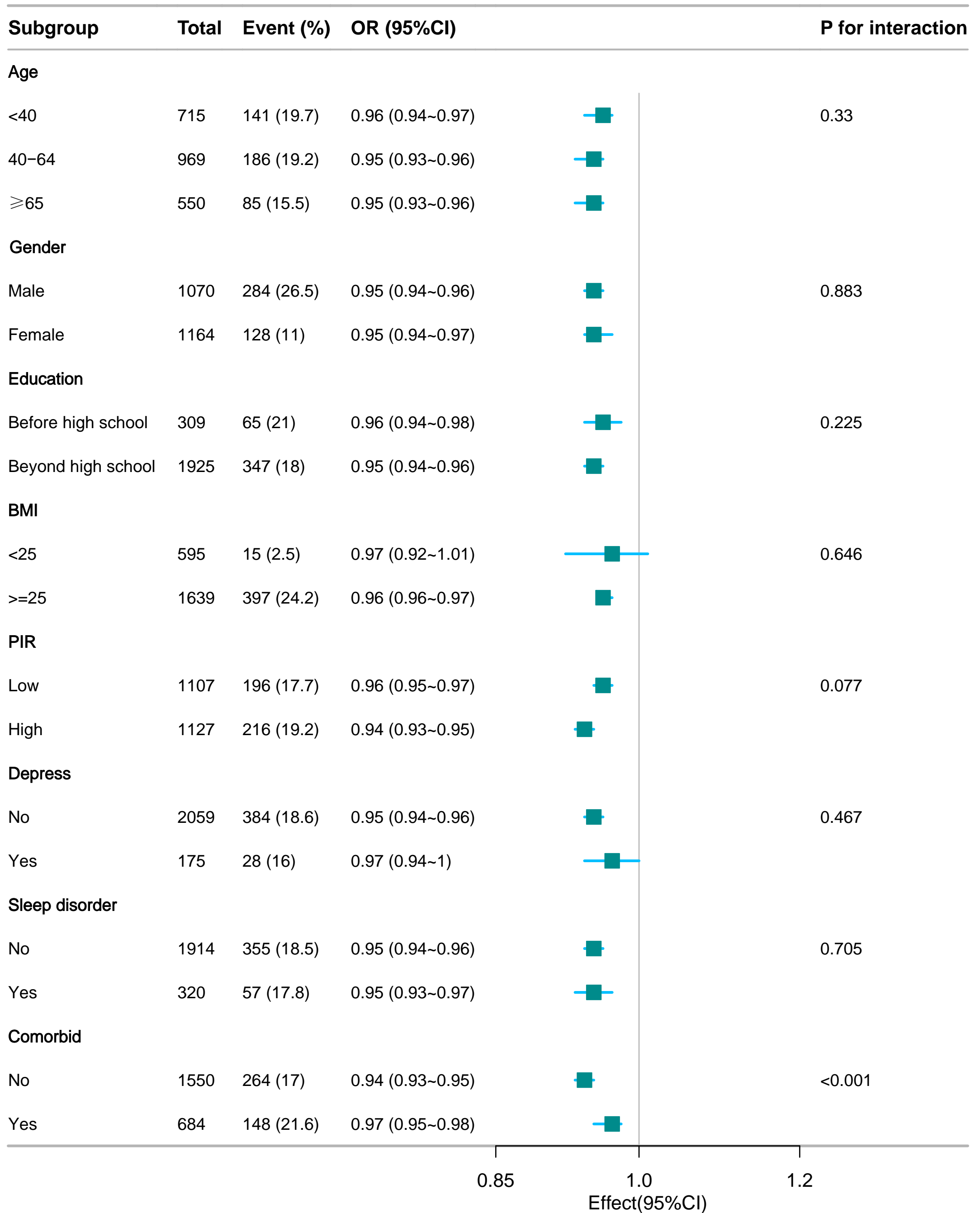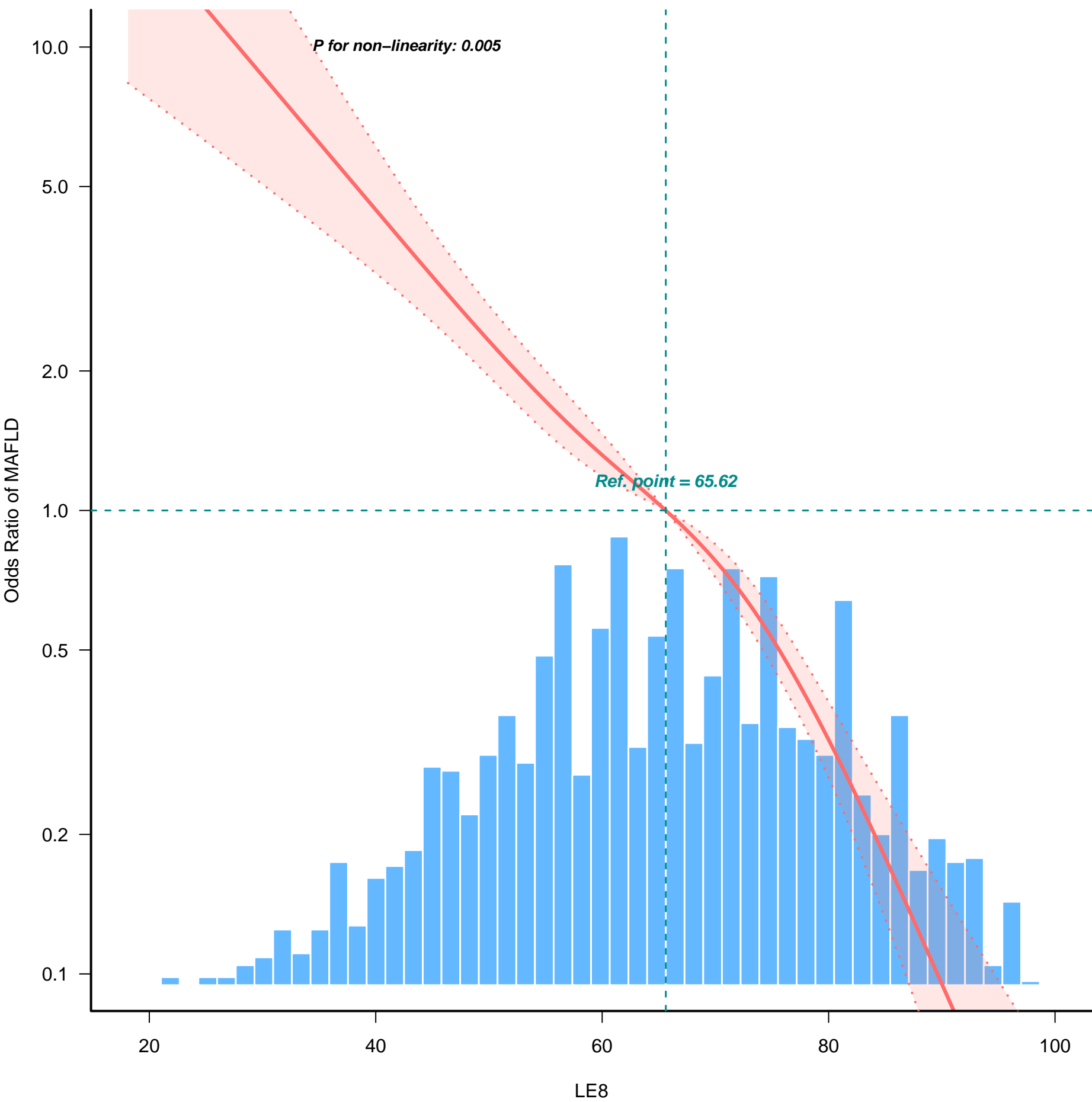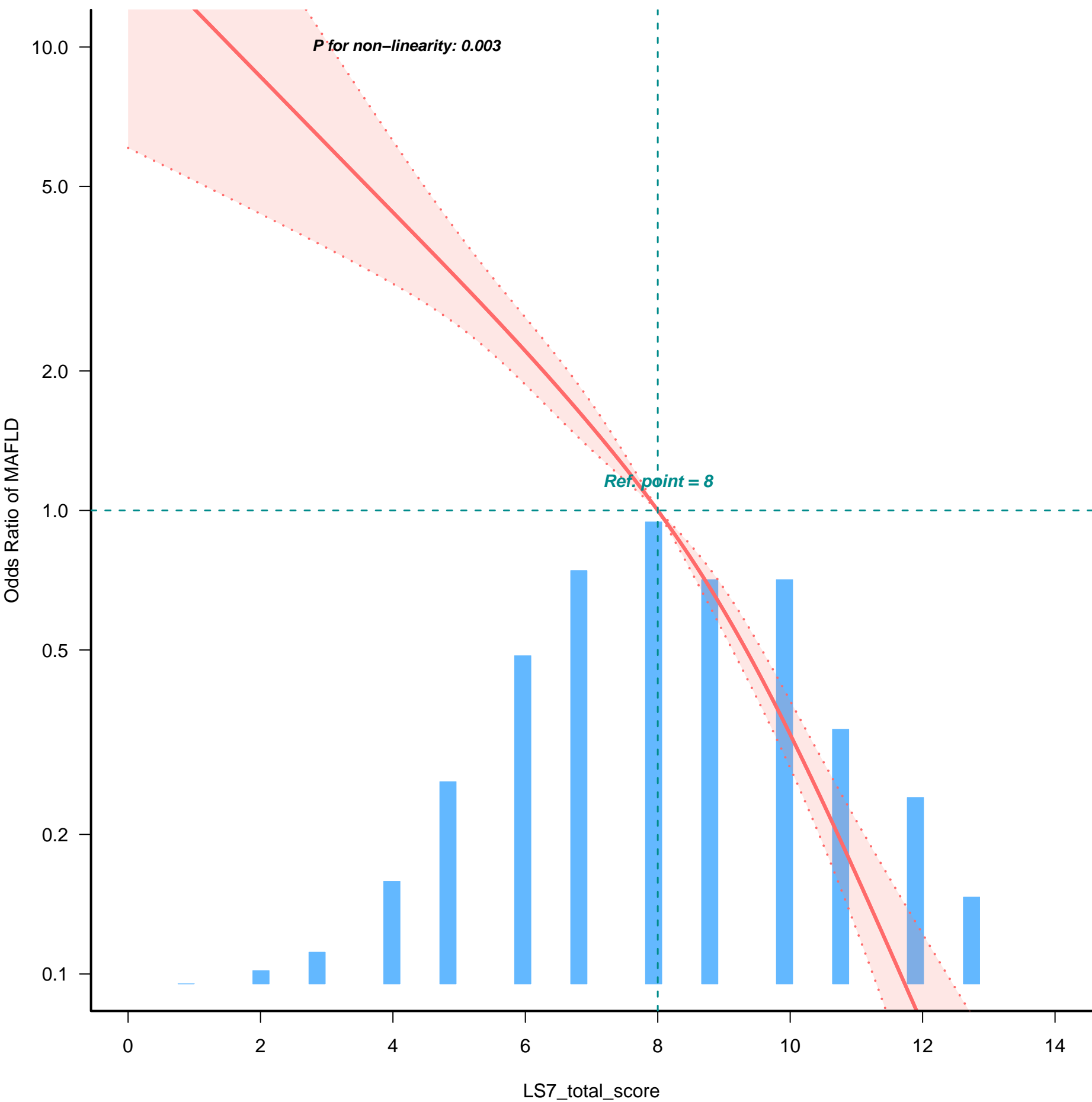| Subgroup	Total	Event (%)	OR (95%CI)		P for interaction
Age					
<40	715	141 (19.7)	0.96 (0.94~0.97)		0.33
40−64	969	186 (19.2)	0.95 (0.93~0.96)		
≥65	550	85 (15.5)	0.95 (0.93~0.96)		
Gender					
Male	1070	284 (26.5)	0.95 (0.94~0.96)		0.883
Female	1164	128 (11)	0.95 (0.94~0.97)		
Education					
Before high school	309	65 (21)	0.96 (0.94~0.98)		0.225
Beyond high school	1925	347 (18)	0.95 (0.94~0.96)		
BMI					
<25	595	15 (2.5)	0.97 (0.92~1.01)		0.646
>=25	1639	397 (24.2)	0.96 (0.96~0.97)		
PIR					
Low	1107	196 (17.7)	0.96 (0.95~0.97)		0.077
High	1127	216 (19.2)	0.94 (0.93~0.95)		
Depress					
No	2059	384 (18.6)	0.95 (0.94~0.96)		0.467
Yes	175	28 (16)	0.97 (0.94~1)		
Sleep disorder					
No	1914	355 (18.5)	0.95 (0.94~0.96)		0.705
Yes	320	57 (17.8)	0.95 (0.93~0.97)		
Comorbid					
No	1550	264 (17)	0.94 (0.93~0.95)		<0.001
Yes	684	148 (21.6)	0.97 (0.95~0.98)		

Effect(95%CI): 0.85   1.0   1.2

Supplementary Figure2

Supplementary Figure3

Supplementary Table S1 Association of Life's Essential 8 and Life's Simple 7 with MAFLD(unweighted)

Variable		Model 0		Model 1		Model 2		Model 3	
		OR (95%CI)	P value	OR (95%CI)	P value	OR (95%CI)	P value	OR (95%CI)	P value
LE8_per10	Continuous	0.53 (0.49~0.57)	<0.001	0.55 (0.51~0.59)	<0.001	0.51 (0.47~0.55)	<0.001	0.5 (0.47~0.54)	<0.001
LE8_group									
	Low	Ref						Ref	
	Moderate	0.31 (0.24~0.4)	<0.001	0.32 (0.25~0.42)	<0.001	0.28 (0.22~0.37)	<0.001	0.28 (0.21~0.36)	<0.001
	High	0.06 (0.04~0.08)	<0.001	0.07 (0.05~0.1)	<0.001	0.06(0.04~0.08)	<0.001	0.05 (0.04~0.08)	<0.001
	P for trend		<0.001		<0.001		<0.001		<0.001
Ls7	Continuous	0.65 (0.62~0.68)	<0.001	0.65 (0.61~0.68)	<0.001	0.62 (0.59~0.65)	<0.001	0.62 (0.58~0.65)	<0.001
Ls7 group									
	Inadequate	1(Ref)						1(Ref)	
	Average	0.32 (0.26~0.39)	<0.001	0.32 (0.26~0.39)	<0.001	0.28 (0.23~0.35)	<0.001	0.28 (0.23~0.35)	<0.001
	Optimal	0.07 (0.05~0.1)	<0.001	0.07 (0.05~0.11)	<0.001	0.06 (0.04~0.09)	<0.001	0.06 (0.04~0.08)	<0.001
	P for trend		<0.001		<0.001		<0.001		<0.001

Footnote:

Model 0: unadjusted;

Model 1: adjusted for age, sex;

Model 2: further adjusted for ethnicity, and education,marital status, poverty-income ratio, and alcohol status;

Model 3: further adjusted for Comorbid(diabetes, kidney failure,kidney stones,heart failure,stroke, hepatopathy, rheumatoid arthritis,and cancer)

Supplementary Table S2 Analysis of the LE8 and MAFLD Threshold Effects: A Non-Weighted Approach

Le8 per10	OR (95%CI)	P value
Inflection point		
<8.056	0.541 (0.493~0.593)	<0.001
>=8.056	0.173 (0.074~0.404)	<0.001
Likelihood Ratio test		0.004

Supplementary Table S3 Analysis of the Ls7 and MAFLD Threshold Effects: A Non-Weighted Approach

Ls7	OR (95%CI)	P value
Inflection point		
<6.496	0.751 (0.615~0.917)	0.005
>=6.496	0.584 (0.539~0.633)	<0.001
Likelihood Ratio test		0.015

Supplementary Table S4 Weighted Method Analysis of the Association between LE8, LS7, and Different Definitions of Non-Alcoholic Fatty Liver Disease

Outcome	Variable		Crude Model		Full Adjusted Model	
			OR (95%CI)	P value	OR (95%CI)	P value
SLD	LE8_per10	Continuous	0.49 (0.42, 0.58)	<0.001	0.5 (0.41,0.61)	<0.001
	LE8 group					
		Low	Ref			
		Moderate	0.22(0.15, 0.30)	<0.001	0.23 (0.14, 0.36)	0.002
		High	0.04(0.02,0.06)	<0.001	0.04 (0.02, 0.10)	0.001
		P for trend		<0.001		<0.001
	Ls7	Continuous	0.61(0.55, 0.69)	<0.001	0.61 (0.52,0.72)	<0.001
	Ls7 group					
		Inadequate	Ref			
		Average	0.31(0.21,0.45)	<0.001	0.32(0.18,0.57)	0.008
		Optimal	0.05(0.02,0.11)	<0.001	0.06(0.02,0.17)	0.004
		P for trend		<0.001		<0.001
MeSLD	LE8(per10)	Continuous	0.43 (0.38,0.50)	<0.001	0.44 (0.35,0.55)	<0.001
	LE8group					
		Low	Ref			
		Moderate	0.18(0.13,0.25)	<0.001	0.19(0.09,0.37)	0.009
		High	0.02(0.01,0.03)	<0.001	0.02(0.01,0.08)	0.006
		P for trend		<0.001		<0.001
	Ls7	Continuous	0.56(0.51, 0.63)	<0.001	0.55 (0.46, 0.66)	0.002
	Ls7 group					
		Inadequate	Ref			
		Average	0.23(0.16, 0.31)	<0.001	0.22(0.12,0.41)	0.009
		Optimal	0.03 (0.01,0.07)	<0.001	0.03(0.01,0.15)	0.012
		P for trend		<0.001		0.002
NAFLD	LE8(per10)	Continuous	0.52(0.46, 0.59)	<0.001	0.51 (0.42, 0.63)	<0.001
	LE8 group					
		Low	Ref			
		Moderate	0.25(0.16, 0.39)	<0.001	0.24(0.10, 0.59)	0.021
		High	0.05(0.03, 0.08)	<0.001	0.05 (0.02, 0.15)	0.007
		P for trend		<0.001		<0.001
	Ls7	Continuous	0.65(0.60, 0.71)	<0.001	0.64 (0.56, 0.74)	0.002
	Ls7 group					
		Inadequate	Ref			
		Average	0.35(0.25, 0.47)	<0.001	0.33(0.17, 0.64)	0.019
		Optimal	0.06(0.03, 0.13)	<0.001	0.06 (0.02,0.26)	0.014
		P for trend		<0.001		0.003

Crude Model: unadjusted;

Full Adjusted Model : adjusted for age, sex,ethnicity, and education,marital status, poverty-income ratio, and alcohol status, Comorbid(diabetes, kidney failure,kidney stones,heart failure,stroke, hepatopathy, rheumatoid arthritis,and cancer)