

Children of parents with different severities of mental health conditions have higher risk of somatic morbidity: A Danish nationwide register-based cohort study.

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Supplementary

Supplementary table s1

Supplementary table s1 - Titles of overall disease category with corresponding ICD-10 codes and short description applied in Figure 3 and 4 in main manuscript

International Classification of Diseases, Tenth Revision (ICD-10)	ICD-10 codes	Short description in Figure 3 and 4
Certain infectious and parasitic diseases	A00-B99	Infectious
Neoplasms	C00-D48	Neoplasms
Diseases of the blood and blood-forming organs and certain disorders involving the immune mechanism	D50-D89	Blood
Endocrine, nutritional and metabolic diseases	E00-E90	Endocrine
Mental and behavioural disorders	F00-F99	Mental
Diseases of the nervous system	G00-G99	Nervous system
Diseases of the eye and adnexa	H00-H59	Eye
Diseases of the ear and mastoid process	H60-H95	Ear
Diseases of the circulatory system	I00-I99	Circulatory
Diseases of the respiratory system	J00-J99	Respiratory
Diseases of the digestive system	K00-K93	Digestive
Diseases of the skin and subcutaneous tissue	L00-L99	Skin
Diseases of the musculoskeletal system and connective tissue	M00-M99	Musculoskeletal
Diseases of the genitourinary system	N00-N99	Genitourinary
Certain conditions originating in the perinatal period	P00-P96	Perinatal
Congenital malformations, deformations and chromosomal abnormalities	Q00-Q99	Malformations
Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified	R00-R99	Other symptoms
Injury, poisoning and certain other consequences of external causes	S00-T98	Injury

Supplementary table s2

Supplementary table s2 - The overall number and total proportion of children diagnosed in each cohort and disease category

Disease grouping according to the ICD-10 classification and death	COHORT					
	COHORT 1		COHORT 2		COHORT 3	
	<1 year age group (N= 1.028.587)		1–5 years age group (N= 965.253)		6–16 years age group (N= 680.799)	
	Total % (95% CI)	n	Total % (95% CI)	n	Total % (95% CI)	n
Infectious and parasitic diseases	6.3 (6.2-6.3)	64,649	10.3 (10.2-10.3)	99,173	3.9 (3.8-3.9)	26,283
Neoplasms	0.6 (0.5-0.6)	5,680	0.7 (0.7-0.7)	7,026	1.0 (1.0-1.1)	6,991
Diseases of the blood and blood-forming organs and certain disorders involving the immune mechanism	0.3 (0.2-0.3)	2,576	0.8 (0.8-0.8)	7,671	0.6 (0.6-0.6)	4,208
Endocrine, nutritional and metabolic diseases	1.3 (1.2-1.3)	12,869	2.7 (2.6-2.7)	25,761	3.3 (3.2-3.3)	22,399
Mental and behavioural disorders	0.3 (0.3-0.3)	3,402	1.0 (1.0-1.0)	9,387	1.1 (1.1-1.1)	7,467
Diseases of the nervous system	0.6 (0.6-0.6)	6,289	1.5 (1.5-1.5)	14,371	2.3 (2.2-2.3)	15,449
Diseases of the eye and adnexa	0.9 (0.9-1.0)	9,616	2.5 (2.5-2.6)	24,551	2.6 (2.6-2.7)	17,982
Diseases of the ear and mastoid process	2.0 (1.9-2.0)	20,264	5.6 (5.6-5.7)	54,507	2.7 (2.7-2.7)	18,361
Diseases of the circulatory system	0.3 (0.3-0.3)	3,202	0.5 (0.5-0.5)	4,517	0.7 (0.7-0.8)	4,967
Diseases of the respiratory system	9.2 (9.2-9.3)	94,750	17.9 (17.8-18.0)	172,624	26.9 (26.8-27.0)	183,161
Diseases of the digestive system	3.2 (3.2-3.3)	33,088	5.2 (5.1-5.2)	49,922	6.1 (6.0-6.1)	41,426
Diseases of the skin and subcutaneous tissue	1.3 (1.3-1.4)	13,884	3.7 (3.7-3.8)	36,179	3.1 (3.1-3.2)	21,342
Diseases of the musculoskeletal system and connective tissue	0.8 (0.8-0.8)	8,321	3.8 (3.8-3.9)	37,002	7.1 (7.0-7.1)	48,226
Diseases of the genitourinary system	1.0 (1.0-1.1)	10,725	3.1 (3.0-3.1)	29,456	3.9 (3.9-4.0)	26,778
Certain condition originating in the perinatal period	27.2 (27.1-27.3)	279,412	-	-	-	-
Congenital malformations and chromosomal abnormalities	5.9 (5.9-6.0)	61,016	5.1 (5.0-5.1)	48,961	3.6 (3.6-3.7)	24,568
Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified	8.2 (8.1-8.2)	84,194	14.5 (14.4-14.5)	139,555	13.9 (13.9-14.0)	94,856
Injury, poisoning and certain consequences of external causes	4.0 (4.0-4.1)	41,542	41.7 (41.6-41.8)	402,574	48.0 (47.9-48.1)	326,926
Death	0.4 (0.4-0.4)	3,951	0.1 (0.1-0.1)	669	0.1 (0.0-0.1)	365

Supplementary table s3

Supplementary table s3: Risk ratio (RR) and 95% confidence interval (CI) for children exposed to different severities of parental mental health conditions with a registered diagnoses in each disease category within all three cohorts

Disease grouping according to the ICD-10 classification and mortality/death	COHORT								
	COHORT 1			COHORT 2			COHORT 3		
	<1 year age group (N=1.028.587)			1–5 years age group (N= 965.253)			6–16 years age group (N= 680.799)		
	MENTAL HEALTH CONDITON								
Minor	Moderate	Severe	Minor	Moderate	Severe	Minor	Moderate	Severe	
RR (95% CI)	RR (95% CI)	RR (95% CI)	RR (95% CI)	RR (95% CI)	RR (95% CI)	RR (95% CI)	RR (95% CI)	RR (95% CI)	
Infectious and parasitic diseases	1.21 (1.18-1.23)	1.41 (1.38-1.44)	1.47 (1.39-1.56)	1.20 (1.18-1.22)	1.39 (1.36-1.42)	1.45 (1.38-1.52)	1.17 (1.13-1.20)	1.39 (1.35-1.44)	1.30 (1.20-1.40)
Neoplasms	1.12 (1.04-1.20)	1.08 (1.00-1.18)	1.00 (0.80-1.25)	1.11 (1.04-1.19)	1.08 (1.00-1.17)	1.15 (0.95-1.39)	1.06 (1.00-1.13)	1.00 (0.93-1.07)	0.99 (0.84-1.17)
Diseases of the blood and blood-forming organs and certain disorders involving the immune mechanism	1.17 (1.05-1.30)	1.41 (1.26-1.58)	1.20 (0.87-1.64)	1.18 (1.11-1.26)	1.34 (1.26-1.44)	1.05 (0.86-1.27)	1.15 (1.07-1.24)	1.26 (1.15-1.37)	1.07 (0.86-1.31)
Endocrine, nutritional and metabolic diseases	1.23 (1.17-1.28)	1.33 (1.27-1.40)	1.50 (1.33-1.70)	1.29 (1.25-1.33)	1.43 (1.38-1.48)	1.54 (1.41-1.68)	1.28 (1.24-1.32)	1.46 (1.41-1.51)	1.46 (1.35-1.58)
Mental and behavioural disorders	1.67 (1.53-1.83)	2.16 (1.97-2.36)	2.69 (2.20-3.28)	1.51 (1.43-1.60)	2.02 (1.91-2.13)	2.50 (2.21-2.83)	1.64 (1.55-1.73)	2.26 (2.13-2.40)	2.49 (2.21-2.79)
Diseases of the nervous system	1.23 (1.15-1.32)	1.43 (1.33-1.54)	1.71 (1.44-2.03)	1.34 (1.28-1.40)	1.49 (1.42-1.56)	1.83 (1.63-2.04)	1.33 (1.28-1.38)	1.36 (1.30-1.43)	1.31 (1.19-1.46)
Diseases of the eye and adnexa	1.13 (1.07-1.19)	1.39 (1.31-1.47)	1.64 (1.43-1.88)	1.15 (1.11-1.19)	1.33 (1.28-1.38)	1.44 (1.31-1.58)	1.21 (1.17-1.25)	1.31 (1.25-1.36)	1.30 (1.19-1.43)
Diseases of the ear and mastoid process	1.12 (1.08-1.17)	1.37 (1.31-1.42)	1.42 (1.28-1.57)	1.22 (1.19-1.24)	1.39 (1.35-1.42)	1.38 (1.29-1.47)	1.11 (1.07-1.15)	1.21 (1.16-1.26)	1.11 (1.01-1.22)
Diseases of the circulatory system	1.11 (1.00-1.22)	1.28 (1.15-1.42)	1.30 (0.99-1.70)	1.12 (1.03-1.21)	1.32 (1.21-1.44)	1.13 (0.89-1.45)	1.21 (1.13-1.30)	1.27 (1.17-1.37)	1.34 (1.13-1.60)
Diseases of the respiratory system	1.16 (1.14-1.18)	1.38 (1.35-1.40)	1.46 (1.40-1.53)	1.19 (1.17-1.20)	1.34 (1.32-1.36)	1.37 (1.32-1.42)	1.18 (1.17-1.19)	1.34 (1.32-1.35)	1.32 (1.29-1.36)
Diseases of the digestive system	1.36 (1.33-1.40)	1.61 (1.56-1.66)	1.87 (1.74-2.00)	1.27 (1.24-1.30)	1.39 (1.36-1.43)	1.46 (1.37-1.56)	1.19 (1.16-1.21)	1.33 (1.30-1.37)	1.35 (1.27-1.43)
Diseases of the skin and subcutaneous tissue	1.10 (1.05-1.15)	1.27 (1.21-1.34)	1.38 (1.21-1.56)	1.10 (1.07-1.13)	1.29 (1.26-1.34)	1.29 (1.19-1.39)	1.16 (1.12-1.20)	1.32 (1.27-1.37)	1.26 (1.15-1.37)
Diseases of the musculoskeletal system and connective tissue	1.08 (1.02-1.15)	1.17 (1.09-1.25)	1.17 (0.98-1.39)	1.13 (1.10-1.17)	1.19 (1.16-1.23)	1.19 (1.10-1.29)	1.18 (1.16-1.21)	1.20 (1.17-1.24)	1.16 (1.09-1.23)
Diseases of the genitourinary system	1.19 (1.13-1.26)	1.21 (1.15-1.29)	1.13 (0.96-1.32)	1.18 (1.14-1.22)	1.25 (1.20-1.29)	1.22 (1.11-1.33)	1.16 (1.13-1.20)	1.32 (1.28-1.37)	1.24 (1.15-1.34)
Certain condition originating in the perinatal period	1.12 (1.10-1.13)	1.17 (1.16-1.19)	1.27 (1.24-1.31)	-	-	-	-	-	-
Congenital malformations and chromosomal abnormalities	1.11 (1.08-1.13)	1.16 (1.14-1.19)	1.18 (1.11-1.26)	1.14 (1.11-1.17)	1.20 (1.17-1.23)	1.36 (1.27-1.45)	1.23 (1.19-1.27)	1.24 (1.20-1.29)	1.28 (1.18-1.39)
Symptoms, signs and abnormal clinical and laboratory findings. not elsewhere classified	1.18 (1.16-1.20)	1.39 (1.36-1.42)	1.50 (1.42-1.57)	1.18 (1.17-1.20)	1.33 (1.31-1.35)	1.44 (1.38-1.49)	1.21 (1.19-1.23)	1.36 (1.33-1.38)	1.35 (1.30-1.41)
Injury, poisoning and certain consequences of external causes	1.14 (1.11-1.17)	1.46 (1.42-1.51)	1.46 (1.36-1.57)	1.06 (1.05-1.07)	1.16 (1.15-1.17)	1.15 (1.13-1.18)	1.06 (1.05-1.07)	1.10 (1.09-1.12)	1.08 (1.06-1.11)
Death	1.28 (1.17-1.40)	1.32 (1.20-1.46)	1.46 (1.15-1.85)	1.44 (1.18-1.76)	1.29 (1.01-1.63)	1.75 (1.03-2.98)	1.22 (0.95-1.57)	1.34 (1.00-1.80)	1.70 (0.95-3.05)

Supplementary table s4

Supplementary table s4: Risk ratio for infectious diseases according to combined severity of paternal and maternal mental health conditions cohort 1

Cohort 1		Father		
Infectious diseases (ICD-10: A00-B99)				
Mother	MENTAL HEALTH CONDITION	No	Minor	Moderate/Severe
	No	1 (ref)	1.10 (1.06-1.14)	1.26 (1.21-1.31)
	Minor	1.24 (1.21-1.27)	1.29 (1.21-1.36)	1.32 (1.23-1.43)
	Moderate/Severe	1.46 (1.42-1.50)	1.54 (1.44-1.65)	1.56 (1.47-1.66)

Supplementary table s5

Supplementary table s5: Risk ratio for respiratory diseases according to combined severity of paternal and maternal mental health conditions cohort 1

Cohort 1		Father		
Respiratory diseases (ICD-10: J00-J99)				
Mother	MENTAL HEALTH CONDITION	No	Minor	Moderate/Severe
	No	1 (ref)	1.08 (1.04-1.11)	1.26 (1.22-1.31)
	Minor	1.19 (1.16-1.21)	1.20 (1.14-1.26)	1.39 (1.30-1.48)
	Moderate/Severe	1.41 (1.37-1.44)	1.49 (1.40-1.58)	1.54 (1.47-1.62)

Supplementary table s6

Supplementary table s6: Risk ratio for infectious diseases according to combined severity of paternal and maternal mental health conditions cohort 2

Cohort 2		Father		
Infectious diseases (ICD-10: A00-B99)				
Mother	MENTAL HEALTH CONDITION	No	Minor	Moderate/Severe
	No	1 (ref)	1.09 (1.05-1.12)	1.27 (1.23-1.31)
	Minor	1.23 (1.20-1.25)	1.33 (1.28-1.39)	1.38 (1.30-1.47)
	Moderate/Severe	1.44 (1.40-1.47)	1.47 (1.39-1.55)	1.49 (1.42-1.57)

Supplementary table s7

Supplementary table s7: Risk ratio for respiratory diseases according to combined severity of paternal and maternal mental health conditions cohort 2

Cohort 2		Father		
Respiratory diseases (ICD-10: J00-J99)				
Mother	MENTAL HEALTH CONDITION	No	Minor	Moderate/Severe
	No	1 (ref)	1.10 (1.07-1.13)	1.23 (1.19-1.26)
	Minor	1.21 (1.20-1.23)	1.29 (1.24-1.33)	1.37 (1.31-1.44)
	Moderate/Severe	1.37 (1.34-1.39)	1.44 (1.38-1.50)	1.43 (1.38-1.49)

Supplementary table s8

Supplementary table s8: Risk ratio for infectious diseases according to combined severity of paternal and maternal mental health conditions cohort 3

Cohort 3		Father		
Infectious diseases (ICD-10: A00-B99)				
Mother	MENTAL HEALTH CONDITION	No	Minor	Moderate/Severe
	No	1 (ref)	1.02 (0.97-1.08)	1.31 (1.23-1.39)
	Minor	1.20 (1.16-1.24)	1.27 (1.19-1.36)	1.30 (1.19-1.41)
	Moderate/Severe	1.38 (1.32-1.44)	1.39 (1.27-1.52)	1.62 (1.49-1.75)

Supplementary table s9

Supplementary table s9: Risk ratio for respiratory diseases according to combined severity of paternal and maternal mental health conditions cohort 3

Cohort 3		Father		
Respiratory diseases (ICD-10: J00-J99)				
Mother	MENTAL HEALTH CONDITION	No	Minor	Moderate/Severe
	No	1 (ref)	1.09 (1.07-1.11)	1.21 (1.18-1.24)
	Minor	1.20 (1.18-1.21)	1.28 (1.24-1.31)	1.34 (1.30-1.39)
	Moderate/Severe	1.35 (1.33-1.37)	1.41 (1.36-1.46)	1.44 (1.40-1.49)