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The impact of childhood trauma on depression: Does resilience matter? Population-based results from the Study of Health in Pomerania

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ABSTRACT

Objective: Data suggests that traumatic experiences at early age contribute to the onset of major depressive disorder (MDD) in later life. This study aims at investigating the influence of dispositional resilience on this relationship.
Methods: Two thousand and forty-six subjects aged 29–89 (SD = 13.9) from a community based sample who were free of MDD during the last 12 months prior to data collection were diagnosed for Lifetime diagnosis of MDD by the Munich-Composite International Diagnostic Interview (M-CIDI) according to DSM-IV criteria. Childhood maltreatment (CM) and resilience were assessed with the Childhood Trauma Questionnaire (CTQ) and the Resilience-Scale (RS-25).
Results: Both CM (OR = 1.03, 95% CI [1.02, 1.04], $P < .000$) and resilience (OR = 0.98, 95% CI [0.98, 0.99], $P < .000$) were associated with MDD later in life. The detrimental effects of low resilience on MDD were not only especially prominent in subjects with a history of CM (OR = 3.18, 95% CI [1.84, 5.50], $P < .000$), but also effective in subjects without CM (OR = 2.62, 95% CI [1.41, 4.88], $P = .002$).
Conclusions: The findings support the clinical assumption that resilient subjects may be partly protected against the detrimental long-term effects of child abuse and neglect.

Introduction

Depressive disorders are a major mental health problem and widely recognized as most prevalent cause of morbidity, disability and impaired quality of life [1]. In particular intense early stress and traumatic experiences like childhood maltreatment (CM) were consistently associated with adult psychopathology, especially with major depression (MDD) [2–5]. In this regard CM not only increases the risk of life-time MDD [6–11], but it also aggravates its course [12,13] in terms of a dose–response relationship as numerous studies have indicated [9,10,14–16].

Maerker et al. [17] found a higher probability of developing MDD compared to Posttraumatic Stress Disorder if a trauma occurred in early developmental stages rather than in adolescence which they explained by premature neurobiological mechanisms of memory and emotion regulation. This is in line with studies that linked intense early stress to greater sensitivity of the hypothalamic-pituitary-adrenal axis in adulthood, which in turn was associated with greater vulnerability to MD [8]. Besides the impact of early trauma on neurobiology and neurochemistry, psychological and cognitive dimensions are also affected by early traumatization.

According to the attachment theory by Bowlby [18], a secure attachment to primary caregivers promotes successful emotional development and is a protective factor against psychopathology [19]. For this reason traumatic and violent experiences, especially caused by caregivers, are highly detrimental to a child's system of beliefs, expectations, emotions, and behaviors about the self and others [20] and may result in the development of learned helplessness an external locus of control [7],

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inappropriate coping styles [21] and therefore in higher vulnerability to stress and stress disorders.

Resilience as a protective factor

Although a great deal of research investigating the immediate and delayed pathogenic effects of CM has been conducted, only a small body of literature has focused on adaptive outcomes in the aftermath of CM [22–24]. Yet it seems that besides trauma-related factors like frequency and intrusiveness, individual biological and psychological factors modify the risk for long-term consequences of CM [5]. As research has consistently shown a considerable number of CM victims show little or no psychological long-term damage [22,25]. Over the years the vague term "resilience" was established to describe this phenomenon.

As there is no definition of "resilience" generally agreed on, one can assign the attempted definitions to (at least) two main streams (cf. [26]). First: the end of a complex adaptation process to adversity (cf. [27]) and second: the dispositional ability to access and use resources in the face of traumatic events [28,29]. An integrated conceptualization of the term "resilience" was provided by Wagnild et al. [29,30]. They defined resilience as a "dynamic personality trait that comprises the individual's ability to react resiliently in the aftermath of adversity". Hereby they acknowledged the existence of certain inherent resources which are however fluid and alterable rather than determined and inflexible.

To our knowledge, there is only one other cross-sectional study that assessed the moderating effects of dispositional resilience on depressive symptoms following childhood trauma. Wingo et al. [22] found an effect of resilience on depression severity after CM, but no interaction between CM and resilience in depression in a predominantly African American sample.

In our study, we first aimed to determine relations between childhood maltreatment, resilience, and depression in later life in a representative population based sample using a standardized and broadly validated self-report instrument for childhood maltreatment and a diagnostic interview for major depressive disorder according to DSM-IV. Secondly, we analyzed the putative moderating effect of resilience on the association of childhood maltreatment and depression. We assumed that a considerable number of study participants with a history of childhood maltreatment adapted well and developed resilience that counteracted the risk of depression in later life.

Methods

Sample and sample recruitment

Data from the Study of Health in Pomerania (SHIP) were used [31]. SHIP is a population-based cohort study conducted in West Pomerania [32–34] which comprises a net sample of 6267 eligible adults, out of which 4308 Caucasian subjects participated in the baseline of SHIP (SHIP-0) 1997–2001. Between 2007 and 2010, the "Life-Events and Gene-Environment Interaction in Depression" (LEGEND) study comprised a profound psychometric assessment of the SHIP-0 participants. Until then, 639 participations from SHIP-0 were either deceased (n = 383) or refused further participation on SHIP (n = 256). In total, 3669 subjects of the baseline sample were invited to LEGEND, 92 of these deceased during study conduction and 1011 refused participation in LEGEND. 132 subjects did not respond to repeated efforts of contact (at least three written invitations, 10 telephone calls and five home visits). Thirty-four subjects agreed to participate, but did not show up on several arranged dates or were not able to arrange an appointment. Among the 2400 subjects who participated in LEGEND, 134 were excluded from the analyses because of unreliable information or inconsistencies in the interview according to a judgment of the interviewer or supervisor that included the performance on a verbal memory test (VLMT) at the beginning of the interview [35]. The criterion for exclusion based on the VLMT was less than four recalled words at the first trial. We further excluded 131 subjects with a diagnosis of MDD in the previous 12 months to the LEGEND interview to reduce any cognitive bias in the response of the questionnaires that can be ascribed to current major depressive symptoms. Furthermore, subjects with missing data for lifetime diagnosis of MDD (n = 5) or CM (n = 84) were excluded (overlap exists), resulting in a final study population of 2046 participants. All participants had given written informed consent. SHIP and LEGEND were approved by the local Institutional Review Board and conformed to the principles of the Declaration of Helsinki. A sample description is provided in Table 1.

Table 1
Sociodemographic and clinical characteristics of SHIP-LEGEND participants.

		n	%
Total sample		2046	100
School education[a]	<10 years	611	29.9
	=10 years	1014	49.7
	>10 years	416	20.4
Marital status[a]	Married/living with partner	1661	81.4
	Single/living separated/ divorced/widowed	380	18.6
Childhood trauma positive[b]		1167	57.0
Childhood trauma subtypes			
Emotional abuse	None	1807	88.9
	Positive[b]	226	11.0
Physical abuse	None	1860	91.3
	Positive[b]	178	8.7
Sexual abuse	None	1896	93.2
	Positive[b]	138	6.7
Emotional neglect	None	1266	62.5
	Positive[b]	760	37.1
Physical neglect	None	1255	61.7
	Positive[b]	778	38.0
Major depressive disorder[c]		262	12.8
		Median	Range
Age		56.0	29–89
Resilience[d]		148	25–175
	Quartile I[e]	127	25–140
	Quartile II	143	130–154
	Quartile III	153	144–166
	Quartile IV	166	155–175

[a] School education, marital status: 0.6% missing.
[b] Categorical, combined CTQ severity categories: mild/moderate/severe (=positive).
[c] Diagnosis lifetime by M-CIDI.
[d] Resilience-Scale 25 (RS-25) by Wagnild & Young [29].
[e] Age (10 year increments) and sex specific quartiles of the RS score.

Instruments

Childhood maltreatment

Recognizing a lack of a comprehensive standard definition of childhood maltreatment, the WHO Consultation on Child Abuse Prevention drafted a comprehensive definition in 1999:

> "Child abuse or maltreatment constitutes all forms of physical and/or emotional ill-treatment, sexual abuse, neglect or negligent treatment or commercial or other exploitation, resulting in actual or potential harm to the child's health, survival, development or dignity in the context of a relationship of responsibility, trust or power."

We applied the German version of the 28-item Childhood Trauma Questionnaire (CTQ) whose items reflect common definitions of child abuse and neglect as found in the childhood trauma literature [36]. "Emotional abuse (EA) refers to verbal assaults on a child's sense of worth or well-being, or any humiliating, demeaning, or threatening behavior directed toward a child by an older person. Physical abuse (PA) refers to bodily assaults on a child by an older person that pose the