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Links of perceived economic deprivation to adolescents' well-being six years later

Zusammenhänge zwischen wahrgenommener ökonomischer Deprivation und dem Wohlbefinden von Jugendlichen sechs Jahre danach

Abstract:

This study investigates long-lasting effects of perceived economic deprivation for adolescents' and young adults' well-being across a six-year time period. Furthermore, it is tested whether such effects differ for boys and girls, whether they can be traced back to earlier strain in well-being when deprivation was encountered, and whether maternal negativity mediates such reduced well-being. Data come from 358 adolescents who were interviewed with their mothers in 1996 and followed up until 2002. In 1996, economic deprivation was assessed as economic pressure experienced in the household economy (maternal report) and as adolescent-perceived financial hardship. Somatic complaints, self-esteem, and depressiveness were used as indicators of well-being in 1996 and 2002. Negative maternal communication was reported by adolescents in 1996. Findings from multiple regression analyses suggest weak but significant negative effects of earlier deprivation on later well-being, over and above effects of parental education and family structure. These effects were more pronounced for girls than for boys. Impaired well-being in 1996 explained much, but not all of the long-term effects of economic deprivation. Maternal negativity proved to be a stronger mediator for girls' reactions to economic stress. Overall the data suggest that economic deprivation in adolescence is a significant risk factor with long-term negative consequences particularly for girls.

Zusammenfassung:

In dieser Studie werden langanhaltende Effekte wahrgenommener ökonomischer Deprivation auf das Wohlbefinden von Jugendlichen und jungen Erwachsenen über einen Zeitraum von sechs Jahren untersucht. Darüber hinaus wurde geprüft, ob es bei diesen Effekten Unterschiede zwischen Mädchen und Jungen gibt, ob die Effekte auf frühere Belastungen im Wohlbefinden zum Zeitpunkt der ökonomischen Deprivation zurückverfolgt werden können und ob mütterliche Negativität zu einem solchen verringerten Wohlbefinden beiträgt. Die Stichprobe besteht aus 358 Jugendlichen, die 1996 zusammen mit ihren Müttern interviewt und 2002 erneut befragt wurden. Im Jahre 1996 wurde ökonomische Deprivation als wirtschaftlicher Druck auf die Finanzlage des Haushalts (Einschätzung der Mütter) und als von den Jugendlichen wahrgenommene finanzielle Notlage erhoben. Somatische Beschwerden, das Selbstwertgefühl und Niedergeschlagenheit wurden in den Jahren 1996 und 2002 als Indikatoren für das Wohlbefinden verwendet. Im Jahre 1996 gaben die Jugendlichen zudem Auskunft über negative Kommunikationsweisen der Mütter. Die Ergebnisse der multiplen Regressionsanalysen legen nahe, dass es schwache, aber signifikante negative Effekte vorausgegangener ökonomischer Deprivation auf das Wohlbefinden gibt, zusätzlich zu den Effekten des Bildungsniveaus der Eltern und der Familienformen. Diese Effekte waren bei Mädchen stärker ausgeprägt als bei Jungen. Ein eingeschränktes Wohlbefinden im Jahre 1996 trug nicht vollständig



zur Erklärung von Langzeiteffekten ökonomischer Deprivation bei. Mütterliche Negativität erwies sich als stärkerer Mediator für die Reaktion von Mädchen auf ökonomischen Stress. Insgesamt legen die Daten nahe, dass ökonomische Deprivation ein signifikanter Risikofaktor mit negativen Langzeitfolgen, insbesondere für Mädchen, ist.

Keywords: economic deprivation, poverty, adolescents, well-being, parenting

Schlagworte: Ökonomische Deprivation, Armut, Jugendliche, Wohlbefinden, Elternschaft

Introduction

Poverty and economic deprivation among children and adolescents in Germany has become an increasingly prominent issue during the last decade (Butterwegge et al. 2003; Walper 2008). As evident from the Third National Report on Poverty and Wealth (Bundesministerium für Arbeit und Soziales, 2008), the gap between rich and poor has grown, and families with children, particularly single mothers and families with three and more children are at high risk for poverty. Given the various kinds of transfer payments available to families and particularly those in need, poverty in Germany is quite different from absolute poverty seen in developing countries (Grantham-McGregor et al. 2007). However, relative poverty in industrialized countries and welfare states has also been shown to pose a risk for children's and adolescents' development: Being excluded from what is considered the minimum of a socio-culturally acceptable life style causes stress among parents and children, in the family climate, and even beyond the family in children's social relations (Duncan/Brooks-Gunn, 1997a; Klocke/Hurrelmann 2001; Seccombe 2000).

Poverty is a complex phenomenon which is not easy to grasp. Common measures of *relative income poverty* are based on the per-capita income of households (with an age-graded weighting of needs for each household member) and identify those who have less than half (50% or 60%) of the average per-capita income available (e.g. Bundesministerium für Arbeit und Soziales 2008). Using this indicator (with a 60% poverty threshold), analyses from the German Socio-Economic Panel (SOEP) suggest that the overall poverty rate in Germany has increased within the past years from 12% in 1998 to 18% in 2005. During this same time period, the poverty rate among children up to age 15 years has grown from 16% to 26%, indicating a stronger increase and an elevated risk of poverty among children than for the average population. Among adolescents and young adults age 16 to 24, the poverty rate is not lower (28%). Only in middle adulthood (25-49 years) does the risk to live in poverty drop to 17%, and it is lowest among seniors age 65 years and older (12%). Highest poverty rates are found for single parent households (36%) while two-parent households with children fare about as well and as bad as the average population (19% poverty rate; see Bundesministerium für Arbeit und Soziales 2008: 184). Although other data sets used for the Third National Report on Poverty and Wealth suggest somewhat lower poverty rates (overall 11%), the same relevant risk factors are identified. For example, two-parent families with three and more children have almost twice the poverty risk as two-parent families with one child. If we look at welfare dependence,

the difference between family types is even more accentuated: While only 2.3% of all two-parent families have to rely on welfare payments, this holds for about 3 out of 4 single parent families (26.3%) (Bundesministerium für Gesundheit und Soziale Sicherung 2004). Particularly for young children up to age 7, welfare dependency has considerably increased since 1980, yielding much stronger age-graded differences in welfare dependency by 2002 than twenty years before (Merten 2005).

The higher awareness of economic deprivation among children in Germany has led to a rise in research on child poverty, especially focusing on likely detrimental effects which poverty may have for children's and adolescents' development (e.g. Butterwegge et al. 2003; Holz/Hock 2006; Klocke 1996; Klocke/Hurrelmann 2001; Mansel/Neubauer 1998; Walper 2008). However, different from the USA, where poverty research has strongly gained from the availability of large longitudinal studies, most poverty research in Germany is cross-sectional. Notable exceptions are studies which have looked at moving in and out of welfare dependence (Buhr 2001), the AWO-ISS study following kindergarten children into elementary school age (Hock/Holz/Wüstendorfer 2000; Holz, 2002; Holz/Hock 2006), and a few other analyses which looked at short-term effects of financial strain on adolescents' development within one year (e.g. Walper/Gerhard/Schwarz/Gödde, 2001). However, very little is known about the long-term effects of earlier deprivation across a number of years. In this paper, such long-term consequences of economic deprivation will be addressed, focusing on adolescents who may be more aware of the family's financial situation than younger children and, hence, can provide their own account.

Poverty and adolescents' well-being

During the 1990s, detrimental effects of poverty and parental unemployment for children's development have become a major issue in American research (Duncan/Brooks-Gunn 1997a; Elde/Conger/Foster/Ardelt 1992; Huston 1991; McLoyd 1998). Since then, a large number of studies pointed to the negative outcomes of poverty and financial strain for children's health, well-being, cognitive development, and social integration (Secombe 2000). Health related risks of poverty seem to start even prenatally and are seen in premature birth, low birth weight, and increased neurological risks. For poor children at kindergarten age and older, increased emotional strain has been reported as indicated by anxiety, depressiveness, and feelings of helplessness, but also elevated levels of anger, aggressiveness, and hostility (Eamon 2002; Schwartz/Dodge/Pettit/Bates 1997; Walper 2005). Given such knowledge, particularly about the long-term negative consequences of growing up poor for later social and economic life, it has been estimated that the costs of childhood poverty to the U.S. economy amount to about 500 billion US-Dollar per year (Holzer/Schanzenbach/Duncan/Ludwig 2007).

Quite in line with such international studies, evidence from Germany similarly suggests that financial hardship contributes to various problems in children's development. For example, relative income poverty was found to be linked to preschool children's impaired language development, reduced physical health, and lower social integration among peers (Holz/Hock 2006). Furthermore, children's and adolescents' self-esteem and emotional well-being also seem to suffer from financial strain experienced in the family

(Walper et al. 2001). As suggested by a qualitative study on children's coping with family poverty, such internalizing reactions seem to be even more typical than externalizing problem behavior (Richter 1999).

While girls are generally more at risk for internalizing problem behavior, such reactions may even be accentuated under conditions of family hardship. One study which investigated adolescents' reactions to their fathers' unemployment found particularly high self-doubt and emotional stress among girls (Schindler/Wetzels 1985). They seemed to be more strongly concerned about their social image and felt more shame about their families' economic problems than reported by boys. Also, girls had more doubts about their friendships and felt more isolated, a finding which matches older evidence from adolescents living during the Great Depression (Elder/Nguyen/Caspi 1985). Along these lines, a Canadian study of first graders found that in schools with high levels of poverty, girls were more at risk of increasing peer victimization across their first year at school whereas girls in low-poverty schools experienced a reduction of peer-victimization across time. For boys, the risk for peer victimization did not differ by levels of school poverty (Dhimi/Hoglund/Leadbeater/Boone 2005). This suggests that girls may particularly suffer from poverty, be it due to their increased exposure to family stress or due to the negative consequences of poverty for their peer relationships.

Low self-esteem and increased depressiveness among deprived adolescents have not only been pointed out in cross-sectional analyses, but also when looking at the correspondence between short-term longitudinal changes in financial stress and changes in adolescents' well-being (Walper 2005). As similarly suggested by findings from the USA. (Bolger/Patterson/Thompson/Kupersmidt 1995; Evans/Kim 2007), children and adolescents who experienced deprivation of longer duration were more negatively affected than those who encountered only a short-term episode of financial strain. However, a quick recovery of youth whose family managed to improve their financial situation does not seem to be the rule (Walper 2005). Such evidence lends additional support to the conclusion that even time-limited experiences of poverty pose a risk to children's development when comparing these to children who were never poor (Bolger et al. 1995; National Institute of Child Health and Human Development Early Child Care Research Network 2005).

In German studies on child poverty, particular attention is paid to effects of economic deprivation on children's and adolescents' health (Klocke/Becker 2003; Mielck 2001). In general, these findings show that poor children are at higher risk for more problematic health behavior (like smoking, lack of physical exercise, unhealthy diet) and a number of health problems. For example, the Health Survey for Children and Adolescents (KiGGS) shows that parents from socio-economically disadvantaged families are less likely to rate their children's overall health status as very good (Lange et al. 2007). Furthermore, these parents report a lower health-related quality of life for their children (Ravens-Sieberer/Ellert/Erhart 2007). In adolescence, their children are more likely to smoke (Lampert/Thamm 2007) and less likely to be involved in sports (Lampert/Mensink/Romahn/Woll 2007). Although these effects are not very strong, they clearly suggest that socio-economic resources play a significant role in children's physical and mental health.

Since poverty is frequently associated with other risk factors like parental separation and low parental school education, it is essential to disentangle the effects of financial hardship from influences of these other factors. Several studies have shown that financial

conditions play their own role irrespective of family structure and parents' educational resources (Duncan/Brooks-Gunn/Klebanov 1994; Gershoff/Aber/Raver/Lennon 2007). Furthermore, the lack of financial resources as it is frequently encountered in single parent families seems to explain at least part of the links between parental separation and children's development (McLanahan 1999). Although some findings point to a stronger role of parental separation and remarriage than income as predictors of children's difficulties exhibited in emotional disorder and aggressiveness (Kerr/Beaujot 2002), German data suggest that family structure may be a less important factor than socio-economic resources and financial hardship in this country, at least when looking at adolescents who most frequently experienced parental separation years ago (e.g. Klocke/Becker 2003; Walper 2002).

Given the evidence that economic factors do affect children's and adolescents' development, much attention has been paid to the question which processes explain such effects. While financial resources allow for better access to educational and recreational activities, to healthier food, and to status symbols which figure prominently among peers, the strain encountered in deprived families seems to play a major role. Much of the social stress which is seen in the family climate can be traced to the personal strain among parents who cannot make ends meet (Conger/Ge/Elder/Lorenz/Simons 1994; Elder et al. 1992; Gershoff et al. 2007). In particular, these latter studies suggest that income per se is a less powerful factor than the economic pressure experienced in the household economy when necessary expenditure cannot be afforded and the family has to cut back. They point out that such financial hardship in the household economy sets the stage for increased conflict and negativity among parents and between parents and adolescents which links economic hardship to children's and adolescent outcomes. In fact, low socioeconomic status (SES) and economic pressure have frequently been found to contribute to impaired parenting like more punitive control and lack of parental support (Leinonen/Solantaus/Punamaki 2003; Pinderhughes/Bates/Dodge/Pettit/Zelli 2000; Repetti/Taylor/Seeman 2002).

Our own findings from the study reported below similarly suggest that it is economic pressure reported by mothers and financial hardship experienced by adolescents which links family income to the quality of parenting and adolescents' well-being (Walper et al. 2001). In these previous analyses, which took a cross-sectional as well as a short-term longitudinal approach covering one year, our focus was on children's and adolescents' experiences of economic deprivation as mediating link between family income and economic pressure as reported by the mother and youth well-being. In the analyses presented here, both maternal report and adolescents' account of financial hardship will be compared as predictors of long-term outcomes of economic deprivation across six years.

Research questions. The major question to be addressed in this paper is: (1) Are there long-term effects of economic deprivation as perceived by adolescents and/or their mothers on offspring well-being six years later, over and above other risk factors related to parental separation and low parental education? Given the evidence from international studies we do expect to find modest long-lasting negative outcomes of earlier experiences of economic hardship. At the same time, our analyses test for long-term outcomes of parental separation and stepfamily formation. (2) Secondly, in order to investigate the origins of the expected long-term outcomes of earlier deprivation, it will be tested whether

longitudinal effects on adolescents' well-being can be explained by earlier effects of economic deprivation at the time, when deprivation was experienced. (3) Thirdly, it shall be explored whether these effects differ for boys and girls. So far, only limited evidence points to the possibility that girls may be more negatively affected, be it because they are less likely to compensate for negative experiences in their family through stronger peer group affiliation or because they are more strongly exposed to stressful family relations, or because strain in parent-adolescent relations has a stronger impact on girls. Such possible explanations will also be addressed in the fourth question: (4) To what extent can long-term effects of economic hardship be traced back to strain in parent-adolescent relationships at the time when the family was hit by deprivation? In this respect, it was expected that negativity in the mother-adolescent dyad would explain most of the effect of economic deprivation.

Method

Subjects

The study relies on data from the German longitudinal research project on "Family Development after Parental Separation" (funded by the German Research Council; main investigators: Sabine Walper and Klaus Schneewind, University of Munich; Karl Lenz, University of Dresden; and Peter Noack, University of Jena). In 1996 the study started with a sample of 743 adolescents and their parents who were recruited through a school-based screening procedure in five larger cities in East and West Germany (Munich, Essen, Dresden, Halle, Leipzig). This screening addressed over 6,000 students in secondary schools (*Hauptschule*, *Realschule*, *Gesamtschule* and *Gymnasium*) and aimed at selecting about equal shares of nuclear families, single mother families, and stepfather families each with a target child age 9 to 19 years (mean age: 14.2 years, $SD = 1.81$). Single mother as well as stepfather families were only included if they originated from parental separation or divorce. In addition to the major three comparison groups, a smaller group of nuclear families with high interparental conflict (as perceived by adolescents) was recruited for the study ($n = 36$). However, these will be excluded from the analyses reported here, since the overrepresentation of conflicted nuclear families may distort the expected effects of family structure. After further assessments in 1997 and 1998, a final wave was conducted in 2002 (T4). Of the initial 707 adolescents (without additional sample of conflicted families), 64% participated in the questionnaire assessment six years later ($n = 452$). For 358 of these youth, maternal report on economic pressure at T1 was available. Accordingly, our analyses are based on this subsample of the larger study. Due to missing values, the numbers may be slightly lower for some of the analyses.

The mean age of our target group of adolescents in 1996 was 14.21 years ($SD = 1.74$; age range: 9 to 19 years). This sample comprises 54.5% girls ($n = 195$) and 45.5% boys ($n = 163$). At the initial assessment, 64.2% of the students were in the highest track of schooling (Gymnasium $n = 230$). At that time, 37.2% of adolescents lived with both biological parents ($n = 133$), 34.4% lived with their single mother ($n = 123$), and 28.5% had a stepfather who was either married to the mother or was co-residing with her and the ado-

lescent (n = 102). Six years later, in 2002, there were 34.5 nuclear families (n = 120), 24.3% stable single mother families (n = 87), and 19.0% stable stepfather families (n = 68). Additional 20.4% of the cases had experienced a change in family structure, either due to a separation/divorce of their biological parents or (more frequently:) their mother and the stepfather or due to a new stepfather in the mother's household. However, only 64.5% of the young people were still living with their parents, while 35.2% had already moved out.

Variables

The analyses presented here are based on data assessed during the first wave (T1 in 1996) and the last wave (T4 in 2002) of the longitudinal study. At T1, the data were collected in oral interviews and questionnaire assessments conducted with the target adolescent and his/her mother in the participants' home. At T4, telephone interviews as well as mailed questionnaire assessments were conducted with the target adolescent/young adult.

Family structure and parental education. In order to assess the impact of parental separation in late adolescence and young adulthood, it was decided to rely on family structure as measured concurrent to the outcome measures. Between T1 and T4, eleven adolescents, who were initially in nuclear families, experienced the separations of their biological parents. Since many of the young adults did no longer live in the parental household, differences between single mother and stepfather families were neglected. Accordingly, the analyses rely on a simple indicator of parental separation (yes/no) at T4, assessed during the telephone interviews with the target adolescent/young adult.

Data on *parental school education* was reported by mothers (written questionnaire assessment) at T1. Mothers were asked to indicate the highest school degree received for herself, the child's father, and – if applicable – her current partner (4 categories: “no final exam” = 1, “Hauptschulabschluss” [lowest track of schooling successfully finished] = 2, “mittlere Reife” [middle track of schooling successfully finished] = 3, “Abitur” [university entrance qualification] = 4). The indicator used here describes parents' educational resources in the adolescents' household. For single mother families, only maternal school education was included. For two-parent households (nuclear or stepfather families) both parents' education was considered relevant for their earning power. In this case, the highest degree available among parents was chosen as indicator of educational resources.

Economic deprivation. The indicators of economic deprivation rely on subjective accounts of economic pressure as perceived by mothers and adolescents at the first assessment (T1 in 1996). Maternal report on *economic pressure* were adapted from the Iowa Study by Elder, Conger and colleagues (Elder et al. 1992) by translating the original items. The overall indicator of economic pressure comprises two subscales and two single items (a total of 17 items). One subscale indicated financial strain in certain domains of expenditures (7 items, e.g. “We have sufficient money for...” “food”, “clothing”, 4-point rating from “not at all true” = 1 to “very true” = 4). Ratings for these items were inverted and averaged. A second subscale asked about economic adaptations during the last year (8 items, e.g. “delayed paying bills”, “borrowed money from friends or relatives”, “cut down on expenditure for food” “reduced leisure time activities for financial reasons”, “received

welfare payments"¹; yes/no). The number of items which were answered with "yes" was counted. An additional global item indicated difficulties in covering regular payments (4-point rating from "no difficulties" = 1 to "big difficulties" = 4; see *Table 1*), and a final single item indicator asked "How much money is usually left at the end of the month?" (three options for the answer: "Some money is left over" = 1, "We make ends meet" = 2, "The money is not enough to cover our needs" = 3). The subscales and single items were z-standardized and averaged. The internal consistency of these four indicators (2 subscales, 2 single items) was Alpha = .88. Sample items are presented in *Table 1*.

To assess *financial hardship* as perceived by adolescents, a new scale comprising the following five items was used: "My parents frequently worry whether they can pay their bills", "We have enough money for all that we need" (inverted), "Our money is frequently scarce", "When I need things for school, we sometimes lack the money for it", and "I must frequently do without something, because my family has to reduce expenses". Each item was answered with a 4-point rating ("not true" = 1, "little true" = 2, "rather true" = 3, "very true" = 4). Items were averaged. The internal consistency of this scale is good (Cronbach's Alpha = .80). Despite the differences in indicators, both – maternal and adolescent report – are quite strongly correlated ($r = .60$, $p < .001$).

Adolescent well-being. Three indicators of adolescent well-being were used from adolescents' written self-report (questionnaire assessment at T1 and T4). *Somatic complaints* were indicated by 13 items which were selected from the new version of the Giessener Complaint Questionnaire for Children and Adolescents (Brähler 1992). These items ask about the frequency (4-point rating) of different complaints (e.g. stomach ache, headache, allergies; see *Table 1*) within the past two months (rating: "never" = 1, "sometimes" = 2, "frequently" = 3, "almost always" = 4). Given the heterogeneity of these complaints, the internal consistency of this scale is satisfactory (Cronbach's Alpha = .74). *General self-esteem* was assessed by the Rosenberg-scale (Rosenberg 1965) which was slightly adapted in wording for this study to allow for a better understanding at T1 when the sample was younger. The same wording was used through all assessments in this study. The scale comprises ten items (five indicating positive self-esteem and five indicating self-derogation) which were rated on a 4-point scale ("not true" = 1, "rather not true" = 2, "rather true" = 3, "exactly true" = 4). After inverting the negative items, ratings were averaged. Adolescents' *depressiveness* was indicated by the German Adaptation of the CES-D scale by Hautzinger and Bailer (Hautzinger & Bailer 1993) using the short version which comprises 15 items (General Depression Scale ADS). This scale asks about the frequency of various symptoms during the past week (e.g. "... I was depressed"). Each item was answered with a 4-point rating ("never" = 0, "sometimes" = 1, "quite often" = 2, "most of the time" = 3). Ratings were averaged (Cronbach's Alpha = .84).

1 The original indicator of financial transactions includes two more items ("taken a credit" and "drawn from savings to make a living"). However, these proved to have low loadings on the factor (<.40) and were thus excluded from the scale.

Table 1: Overview of indicators with sample items and internal consistencies

Scale	Sample items	Number of items/subscales	Cronbach's Alpha
Economic pressure (maternal report)	"We have sufficient money for ... clothing" (financial strain, 7 items, inverted) "Have you during the last year ... cut down on payments for food?" (economic adaptations, 8 items) "Regarding the payment for regular bills, we have ... difficulties" (1 item) "How much money is usually left at the end of the month?" (1 item)	4 subscales	.88
Financial hardship (adolescent report)	"Our money is frequently scarce."	5	.80
Negative communication	"My mother frequently says things which hurt me."	3	.77
Somatic complaints	"How frequently did you experience these complaints during the past two months?": "pain in the back", "problems with sleeping"	13	.74
Self-esteem	"I have many good qualities"	10	.78
Depressiveness	"During the last week..." "I felt depressed."	15	.84

Analyses

A series of multiple regression analyses were used to test whether economic deprivation at T1 (1996) predicted offspring well-being six years later at T4 (2002). All analyses control for effects of parental education, parental separation, age, and gender. In addition to these predictors, either adolescents' or mothers' report on economic deprivation was entered. In a second set of analyses, the respective outcome measure from T1 was entered, too, to control for the stability of adolescents' well-being and hereby investigate whether longitudinal effects of economic deprivation are due to immediate effects of deprivation on adolescent well-being at T1. A third set of analyses tested whether these effects differ for boys and girls. All analyses were repeated for boys and girls separately. Finally, negative maternal communication at T1 was entered as additional predictor to test whether long-term effects of economic deprivation were mediated by early strain in the parent-adolescent relationship. In these last analyses, adolescent well-being at T1 was not included as predictor, since it seemed reasonable to assume that early problems in parenting would be reflected in impaired youth well-being at T1 which in turn would mediate the long-term outcomes. Hence, the mediation effects of parenting would be difficult to estimate when including T1 well-being as additional mediator.

Since gender will be considered as factor which may moderate the effects of economic deprivation and/or maternal parenting (research question 3), mean levels and variances of all indicators were tested for effects of gender, using t-Tests. As can be seen in *Table 2*, significant differences in variances were not found for maternal report on economic pressure, but for adolescents' view on financial hardship, for negative maternal communication, and all three indicators of well-being at T1 (although the variances for

depressiveness differed only marginally by gender). In all cases, variances were larger for girls than for boys, indicating less homogeneous experiences among girls. However, quite importantly, the variance of outcomes measure at T4 did no longer differ by gender. Hence, any differences in long-term effects of economic deprivation cannot be due to higher variance in outcome measure for either gender.

With respect to mean differences, four indicators showed higher mean levels for girls than for boys: negative maternal communication and depressiveness at T1 as well as somatic complaints at T1 and T4. These differences are in line with previous findings from other studies. Note that the level of economic deprivation did not differ for boys and girls.

Table 2: Comparison of indicators by gender

		Boys	Girls	Difference in variance	Mean level difference
Economic deprivation (maternal report)	M	-.03	-.04	n.s.	n.s.
	(SD)	(.88)	(.83)		
Financial hardship (adolescent report)	M	1.58	1.65	$p < .01$	n.s.
	(SD)	(.50)	(.61)		
Negative maternal communication	M	1.55	1.78	$p < .05$	$p = .001$
	(SD)	(.54)	(.68)		
Somatic complaints T1	M	1.50	1.64	$p < .05$	$p < .001$
	(SD)	(.31)	(.36)		
Self-esteem T1	M	3.39	3.33	$p < .05$	n.s.
	(SD)	(.37)	(.42)		
Depressiveness T1	M	1.46	1.57	$p < .10$	$P < .01$
	(SD)	(.35)	(.47)		
Somatic complaints T4	M	1.47	1.73	n.s.	$p < .001$
	(SD)	(.32)	(.36)		
Self-esteem T4	M	3.45	3.48	n.s.	n.s.
	(SD)	(.45)	(.44)		
Depressiveness T4	M	1.63	1.69	n.s.	n.s.
	(SD)	(.47)	(.50)		

Results

Long-term effects of perceived economic deprivation

In the following, findings will be reported for each indicator of well-being separately. As noted above, the first series of multiple regressions tested whether economic deprivation at T1 predicted offspring well-being at T4. Predictors were (1) maximum parental school education (for parents in adolescents' household), (2) family type contrasting separated versus stable nuclear families, (3) adolescents' age, (4) adolescents' gender and (5) either adolescent or mother report on economic deprivation. *Table 3* shows standardized regression coefficients for predictors of somatic complaints, including adolescents' report on financial hardship which proved to be slightly more predictive of later well-being than maternal report on economic pressure.

Table 3: Effects of economic deprivation on offspring somatic complaints six years later

Predictor:	All		Boys		Girls	
	(1)	(2)	(1)	(2)	(1)	(2)
Parental education	-.03	.00	-.03	.02	-.05	-.03
Separated family	.08	.11*	.17*	.18*	.01	.07
Age	-.01	-.08	.06	-.00	-.06	-.14*
Gender	.34***	.26***	--	--	--	--
Economic deprivation (adolescent report)	.14**	.04	.05	.02	.21**	.05
Somatic complaints T1	--	.36***	--	.23**	--	.46***
Adj. R2	.15	.24	.02	.06	.03	.21
(n)	(345)	(334)	(155)	(148)	(190)	(186)

Significance: *** $p < .001$, ** $p < .01$, * $p < .05$

As can be seen in column (1), financial hardship as perceived by adolescents contributes to elevated levels of somatic complaints six years later even when controlling for parental education and family type as well as age and gender. For the overall sample, this effect is rather weak ($\beta = .14$, $p < .01$). When using maternal report on economic pressure, an almost equally strong effect was found ($\beta = .12$, $p < .05$) suggesting that it is not only adolescents' subjective perspective which accounts for later well-being. The analysis depicted in column (2) suggests that the effect of economic deprivation (adolescents' report) on later somatic complaints is due to previous impairments of adolescents' well-being at T1 and has stabilized across time until T4. In this analysis which controls for somatic complaints at T1, the effect of economic deprivation is reduced to insignificance ($\beta = .04$, n.s.).

Looking at boys and girls separately, no effect of economic deprivation was found for boys (see boys column 1: $\beta = .05$), while girls' well-being was negatively affected by previous economic deprivation ($\beta = .21$, $p < .01$). In this case, girls' report of economic deprivation proved more strongly linked to their somatic complaints than their mothers' report on economic pressure which was only marginally linked to later somatic complaints (separate analysis not shown in *Table 3*: $\beta = .15$, $p < .10$). In line with the findings for the overall sample, the analyses reported in column (2) for girls suggest that effects of economic deprivation on their later somatic complaints are mediated by their immediate reaction at T1. Interestingly, girls' somatic complaints proved to be more stable across the six year time period ($\beta = .46$, $p < .001$) than boys' ($\beta = .23$, $p < .01$).

Table 4 shows the findings for self-esteem as second indicator of well-being. Again, adolescents' report on financial hardship was slightly more strongly linked to their self-esteem at T4 than maternal report on economic pressure (separate analyses not shown in *Table 4*: $\beta = -.14$, $p < .01$). With $\beta = -.17$, the effect of financial hardship proved highly significant ($p < .01$), but weak. Interestingly, this effect was not entirely reduced when controlling for adolescents' self-esteem at T1, but remained marginally significant ($\beta = -.10$, $p < .10$). This suggests that long-term effects of economic deprivation on self-esteem do not get weaker across time but even increase slightly. With respect to the other predictors included in these analyses, parental education had no independent effect

on offspring self-esteem. However, experiencing parental separation undermined offspring self-esteem at T4, even when controlling for previous self-esteem at T1. Hence, disadvantages of youth from separated families grew larger across time from T1 to T4.

Table 4: Effects of economic deprivation on offspring self-esteem six years later

Predictor:	All		Boys		Girls	
	(1)	(2)	(1)	(2)	(1)	(2)
Parental education	.02	.03	-.01	-.01	.04	.06
Separated family	-.14**	-.15**	-.15+	-.17*	-.13+	-.12
Age	.03	.02	-.06	-.07	.10	.08
Gender	.06	.08	--	--	--	--
Economic deprivation (adolescent report)	-.17**	-.10+	-.19*	-.18*	-.17*	-.03
Self-esteem T1	--	.27***	--	.19*	--	.36***
Adj. R2	.05	.12	.05	.08	.04	.15
(n)	(344)	(340)	(154)	(153)	(190)	(187)

Significance: *** $p < .001$, ** $p < .01$, * $p < .05$, + $p < .10$

Comparing boys and girls, the long-term links of earlier economic deprivation to later self-esteem proved quite similar and significant for males ($\beta = -.19$) as well as females ($-.17$, both $p < .05$). Nevertheless, these links seem to have different trajectories. For males, economic deprivation at T1 predicted their later self-esteem at T4 even when controlling for previous self-esteem at T1. This suggests that the long-term negative outcome of earlier deprivation for boys is not due to impaired self-esteem at T1 but rather emerges across time. For females, however, the long-term link between earlier economic deprivation and later self-esteem is strongly reduced (to $\beta = -.03$, n.s.) when controlling for their previous self-esteem. Hence, the later lack of self-esteem among previously deprived females can well be explained by their lower self-esteem at T1 which seems to have stabilized across time.

Turning to depressiveness, the analyses reported in *Table 5* again suggest weak but significant effects of economic deprivation across time (entire sample: $\beta = .13$, $p < .05$). As in the previous analyses, adolescents' report of economic deprivation proved to be slightly stronger linked to later outcome (depressiveness) than mothers' report on economic pressure (separate analysis: $\beta = .12$, $p < .05$). However, it should be noted that both coefficients are highly similar. Youth who experienced parental separation reported higher depressiveness than adolescents and young adults who grew up in an intact nuclear family over and above the economic strain related to parental separation. Neither parental education nor age or gender were significant predictors of later depressiveness. When controlling for previous depressiveness (at T1), the effect of economic deprivation was reduced and no longer significant ($\beta = .07$, n.s.). Hence, the long-term links of earlier deprivation to later depressiveness seem to be due to previously elevated levels of depressiveness which remained visible in this sample across time. Note that effects of parental separation were not reduced when controlling for previous depressiveness. As was the case for (boys') self-esteem, we see a growing gap between offspring from separated and nuclear families.

Table 5: Effects of economic deprivation on offspring depressiveness six years later

Predictor:	All		Boys		Girls	
	(1)	(2)	(1)	(2)	(1)	(2)
Parental education	-.02	-.03	.04	.03	-.07	-.06
Separated family	.18***	.20***	.23**	.24**	.15*	.16*
Age	-.03	-.06	.01	-.01	-.03	-.07
Gender	.04	.01	--	--	--	--
Economic deprivation (adolescent)	.13*	.07	--	--	--	--
Economic deprivation (mother)	--	--	.04	.02	.19*	.14*
Depressiveness T1	--	.25***	--	.22**	--	.27***
Adj. R2	.05	.11	.06	.07	.08	.12
(n)	(344)	(342)	(154)	(154)	(190)	(188)

Significance: *** $p < .001$, ** $p < .01$, * $p < .05$, + $p < .10$

When these analyses were repeated for boys and girls separately, no effect of previous economic deprivation on boys' later depressiveness was found, neither for their own previous report (beta = .12, n.s.) nor for their mothers' report on economic pressure (beta = .04, n.s.). For girls, however, mothers' report was significantly linked to later depressiveness (beta = .19, $p < .05$), even slightly more strongly than girls' own previous perception of economic deprivation which proved only marginally significant (beta = .14, $p < .10$). Accordingly, maternal report was used as indicator of previous deprivation. As can be seen in *Table 5*, this effect is not entirely reduced when controlling for girls' previous depressiveness at T1, suggesting that this long-term link has slightly increased across time. Furthermore, it should be noted that the effect of parental separation on offspring depressiveness remained significant for males and females and was not reduced when controlling for offspring previous depressiveness (see *Table 5*).

Maternal negative communication as mediator

A final set of regression analyses was conducted to investigate the long-term effects of negative maternal parenting on offspring well-being six years later. In particular, it was tested whether effects of earlier deprivation were mediated by their effects on parent-adolescent relationships when deprivation occurred. It was expected that economic deprivation causes stress among parents which contributes to increased negative communication with children. Such negative communication of mothers in relation with their children was assumed to carry on and undermine adolescents' well-being even years later.

Contrary to our expectations, maternal report on economic pressure was not related to adolescents' perception of negative communication on their mothers' side ($r = .07$, n.s.). However, economic deprivation as reported by adolescents correlated significantly with maternal negative communication at T1 ($r = .30$, $p < .001$, $n = 324$) which in turn was linked to adolescents' later somatic complaints ($r = .24$, $p < .001$), self esteem ($r = -.13$, $p < .05$), and depressiveness ($r = .12$, $p < .05$) at T4. As may be expected, negative maternal communication was more strongly linked to adolescent well-being at T1 (somatic com-

plaints: $r = .28$; self-esteem: $r = -.25$; depressiveness: $r = .31$, all $p < .001$). In order to be able to estimate the overall long-term outcomes of earlier negative communication, these immediate effects were not included in the analyses.

Given that long-term effects of earlier deprivation on youth well-being differed for boys and girls, these analyses were carried out separately for males and females. Again, the analyses control for effects of parental education, family structure (separated versus nuclear families), and age. In addition to perceived economic deprivation, negative maternal communication was included as predictor of later well-being at T4. *Table 6* shows the standardised regression coefficients for boys and girls separately. In line with the assumption that girls are more likely to be affected by strain in relation to mother, negative maternal communication was found to be more closely linked to girls' later somatic complaints and self-esteem than boys'. While these effects were significant for girls, no such long-term links were evident for boys. With respect to depressiveness, maternal negative communication proved insignificant for females as well as males (although the effect reached marginal significance in this latter case).

Table 6: Negative maternal communication as mediator of long-term effects of economic deprivation

Predictor:	Somatic Complaints		Self-Esteem		Depressiveness	
	Boys	Girls	Boys	Girls	Boys	Girls
Parental education	-.02	-.03	-.01	.01	.06	-.06
Separated family	.13	.02	-.12	-.14*	.18*	.14*
Age	.06	-.08	-.07	.12	.02	-.02
Economic deprivation	-.02 ^{a)}	.15* ^{a)}	-.16* ^{a)}	-.09 ^{a)}	.02 ^{b)}	.18* ^{b)}
Negative communication T1	.12	.20**	-.01	-.22**	.14*	.09
Adj. R2	.01	.06	.02	.08	.03	.06
(n)	(147)	(188)	(146)	(188)	(146)	(188)

Significance: *** $p < .001$, ** $p < .01$, * $p < .05$, + $p < .10$

Note: ^{a)} adolescent report, ^{b)} mothers' report

Including maternal negative communication reduced the effect of economic deprivation on girls' later somatic complaints (from $\beta = .21$, $p < .01$ to $.15$, $p < .10$) and self-esteem (from $\beta = -.16^2$, $p < .05$ to $\beta = -.09$, n.s.). For girls' depressiveness at T4, previous economic deprivation remained a significant predictor, irrespective of negative maternal communication which did not affect depressiveness across time. Hence, girls' impaired well-being at T4 could at least partially be explained by earlier strain in relation to mother. Only the findings for depressiveness did not correspond to the hypothesis outlined above.

2 The effect of economic deprivation on girls' self-esteem prior to including maternal negative communication was slightly weaker in this smaller sample that reported in *Table 4* ($\beta = -.17$, $p < .05$; see above), but similarly significant.

Discussion

This study sought to explore possible long-term risks of economic deprivation as experienced in the family context for offspring health and well-being across a six-year time span in adolescence, ranging up to young adulthood for a large share of the sample studied here. When outcome measures of well-being were obtained, the youngest participant was 14.9 years of age, while the oldest was 25.7 years old. Six years ago, information on perceived economic deprivation was assessed by maternal as well as adolescent report. The findings clearly suggest that earlier experiences of financial hardship show negative outcomes for physical well-being, self-esteem, and depressiveness even many years later, over and above other risk factors like low parental education and parental separation. In fact, having to cope with economic hardship proved more predictive of later well-being than other risk factors like parental separation and low parental educational resources. Hence, this study adds to the evidence that economic deprivation is a risk factor not only for young children's development (Duncan/Brooks-Gunn 1997b; Gershoff et al. 2007), but also for adolescents' well-being (Bolger et al. 1995; Conger/Conger/Elder 1997; Klocke/Becker 2003; Seccombe 2000) with enduring consequences for later health.

The analyses reported here build on earlier evidence from this study which suggested that economic hardship is a more proximal factor for family climate and adolescents' well-being than relative income poverty (Walper 2001; Walper et al. 2001). Gershoff et al. (2007) similarly argued that information about income is not enough to understand the effects of economic conditions on family life and children's development. They followed the line of research instigated by Glen Elder, Rand Conger and colleagues who carefully assessed economic pressure in the household to understand the power of financial factors in family life. Such information from mothers' report may be considered the most competent source for evaluating financial problems in the household economy. In this study, however, we also included adolescents' account of financial hardship. It is long known that stressors are more closely linked to children's outcomes when assessed through the children's eyes (Compas 1987). Our findings are in line with this assumption, since adolescents' view on financial hardship was somewhat more closely linked to their later well-being than mothers' report on economic pressure. However, at the same time it should be noted, that these differences turned out to be largely negligible. In fact, when looking at predictors for depressiveness, it was rather mothers' account of economic pressure, which predicted girls' later well-being than their own previous view on the family's financial resources.

This latter finding seems particularly noteworthy since it lends more objective support to the significance of earlier hardship. Given the considerable stability of depressiveness among girls, one might be inclined to argue that earlier tendencies for emotional problems could have led to a more negative evaluation of financial resources among depressed girls. In this reasoning, financial pressure as perceived by youth would not necessarily play a causal role for later well-being, but may rather be seen as a concomitant of a negative outlook on life. However, maternal accounts of economic pressure are very unlikely to be biased by adolescents' earlier emotional problems.

One aim of these analyses was to explore gender differences in adolescents' reactions to economic hardship. Earlier evidence had suggested that adolescent girls may be more

vulnerable to emotional stress when confronted with family hardship (Schindler/Wetzels 1985). Although the differences in effects of financial hardship on boys' and girls' well-being were not very pronounced in the current study, the general pattern is in line with this assumption, showing more detrimental long-term outcomes for females than males. For two of the three indicators investigated here, significant effects of earlier hardship were only found for girls, not for boys. This holds for somatic complaints as well as depressiveness, but not for self-esteem. Since depressiveness entails an important somatic component, these findings seem to suggest that girls are more susceptible than boys to somatic reactions when having to cope with economic stress in the family. Self-esteem as a more cognitive-evaluative aspect of well-being was similarly undermined by financial problems for boys as for girls.

In seeking to understand the origins of long-term links between earlier deprivation and later well-being, two likely (and related) explanations were investigated. The overall assumption was that earlier deprivation sets the stage for family stress and conflict as expressed in negative parenting which, in turn, should contribute to adolescents' reduced well-being at the time of economic hardship. Indeed, reduced earlier well-being at T1 mediated much of the long-term effects of deprivation. With respect to boys' self-esteem and girls' depressiveness, however, earlier well-being could not explain the effects of economic hardship across time. Here, it seemed as if economic hardship showed a "sleeping effect" which increased across time. Similarly, negative maternal communication did not emerge as significant mediator of males' self-esteem and females' depressiveness.

Although girls' depressiveness seemed unexpectedly "immune" to maternal negativity, the findings for self-esteem and somatic complaints lend additional support to gender differences in adolescents' vulnerability to family stress (Elder et al. 1985): As expected, it was found that girls are more strongly affected by negative maternal communication than boys. However, it should be noted that girls reported higher levels of negative communication and also provided more heterogeneous reports with higher variance than boys did. Hence, we cannot rule out that the stronger variation and higher level of maternal negativity accounts for the stronger effects among girls. While such differences in measures may to some degree be at random, it could also well be that girls monitor and evaluate their relationship with the mother more intensively and thus are more sensitive to mothers' criticism.

Finally, it should be noted that throughout our analyses, parental education proved rather unimportant for youth well-being. Parental separation, however, was a weak but significant predictor. In general, youth from separated families fared less well than their age-mates who grew up in nuclear families. Interestingly, such effects were not seen in earlier analyses of these data (Walper 2002). In fact, particularly our findings for depressiveness and for males' self-esteem as well as physical well-being suggest long-term negative outcomes of parental separation which even increase across time. Some other studies, too, found even more marked differences between nuclear and divorced families across time when offspring reached young adulthood (Chase-Lansdale/Cherlin/Kiernan 1995; Cherlin/Chase-Lansdale/McRae 1998). Although more studies support the notion of adaptation to changed family conditions by showing a decrease of problem behavior and other symptoms across time following parental divorce (Hetherington 1993; Schmidt-Denter 2000), the evidence is mixed. As pointed out by Chase-Lansdale et al. (1995), the

developmental challenges of adolescence and young adulthood may re-invoke certain vulnerabilities for the divorced group and thus contribute to stronger deleterious effects of parental divorce than seen at younger age.

The study presented here clearly calls for further research, some of which may even be achieved with available data from this study. First, it would be of major interest to see whether economic conditions prove stable and to what extent they change across time. Much of the long-term negative outcomes may be due to enduring financial strain encountered by youth. Secondly, the gender differences reported here should be tested for and replicated in other studies. Last not least, long-term effects should also be investigated for other outcome variables like anger and aggressiveness, social integration, and educational achievement. Along these lines, special attention should be paid to the school careers of deprived youth and their implications for occupational development. It seems more than likely that more devastating effects of earlier economic deprivation on adolescents' and young adults' health are to be found among those who got trapped in lower track schooling or dropped out of school without a suitable school certificate for occupational training. Such risks of the highly selective German school system have repeatedly been pointed out (Edelstein 2006).

In general, the findings reported here highlight the importance of paying attention to the social ecology of developmental contexts which adolescents encounter. While issues of social inequality have long been neglected in socialization research and particularly in research on adolescence, the increasing economic disparities in this country and the high number of children and youth who grow up in poverty render them highly salient. Quite obviously, adolescents are sensitive to their family's economic standing and suffer from their experiences of financial shortage and the unfavourable social comparison with more advantaged others. Focusing on such economic issues seems to provide a better way to identify salient features of social status as they influence children's and adolescents' developmental options than could be achieved with earlier more global approaches. Nonetheless, putting finances back in the larger context of ecological conditions encountered in family and peer relations, neighbourhoods, and school conditions would seem necessary to provide a better understanding of their functioning and consequences.

Given the long-term negative consequences of economic deprivation found here, there is a strong demand not only for monitoring the social costs of poverty among families but also for efficient prevention. With respect to practical implications, the findings reported here point to several conclusions. Firstly, social policy needs to acknowledge the risks for chronic strain and health problems among children and adolescents resulting from family poverty and it should be highly invested in developing measures to avoid family poverty or at least to counteract its detrimental effects. Secondly, the health sector needs to be alerted to the significance of economic hardship as a structural problem which is likely to affect many children's and adolescents' health. Focusing on the prevention of problem behaviour will not sufficiently meet the needs of those who are hit by the current economic crisis. Last not least, adolescence is a significant phase in life which calls for coping with developmental tasks in many domains and opens the arena for increasing social awareness and self-reflection (Hurrelmann 2007; Silbereisen/Hasselhorn 2007). As adolescents seek to establish their place among peers and in the world of work, financial problems are a significant stressor which puts them at risk for eroded resources in coping

with these demands. At present, much effort is being invested in preventing early childhood problems, while there is a considerable risk for neglecting older age groups and adolescents in particular. Accordingly, more attention should be paid to adolescents' needs, and more programs should target them seeking to strengthen their personal, social, and economic resources.

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