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Unemployment, Precarious Work and Health

Research and Policy Issues

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Unemployment and Health in East Germany: The Saxony Longitudinal Study

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Introduction

For more than 100 years, unemployment has been one of the most frequently examined social phenomena in psychology and social science. Most of the available meta-analyses and reviews covering unemployment and mental health conclude: Unemployment distinctively reduces mental health (e. g. Murphy & Athanasou, 1999; Feather, 1990; McKee-Ryan, Song, Wanberg & Kinicki, 2005, Kieselbach, Winefield, Boyd & Anderson, 2006 or Winefield, 2002). This relates to almost all aspects of the human psyche, ranging from psychological disorders as anxiety or depression to quality of life and well-being, to alcohol and drug abuse. Meta-analyses (e. g. Murphy & Athanasou, 1999) showed that psychological consequences of unemployment are often more serious than somatic ones.

In Germany, psychological research of unemployment boomed in the early 1990s due to the consequences of reunification (cf. Kieselbach & Voigt, 1994). The reorganisation of the former East German economy brought about the closing of many state enterprises, thus resulting in a massive reduction of jobs. The consequent unemployment figures are much higher than in West Germany; in spite of considerable political efforts they have remained the social reality. In May 2008, 3,283,279 people were unemployed in Germany, according to the official statistics of the German Federal Labour Office. This corresponds to a rate of 8.8%. The differences between the newly-formed German states (1,143,387 persons, 15.0%) and the old West German states (2,139,892 persons, 7.2%) are significant (<http://www.pub.arbeitsamt.de/hst/services/statistik/000000/html/start/monat/aktuell.pdf>).

Since 1990 almost all citizens of the newly-formed German states have had experience with unemployment in the form of their own unemployment or within the family circle, their circle of friends or acquaintances. Unemployment in East Germany is a mass phenomenon with serious problems (e.g. Bormann, 2006). Hence, even though the German reunification occurred twenty years ago, it is still important to examine the health-related consequences of unemployment in the newly-formed German states. For this purpose the study presents selected data from a longitudinal study.

1 Research methods

1.1 Sample

The Saxony Longitudinal Study ("Sächsische Längsschnittstudie", cf. Berth, Förster, Brähler & Stöbel-Richter, 2007; <http://www.wiedervereinigung.de/sls/>) was launched in 1987 in the former GDR. A sample ($N = 1.281$) of then 14-year-old students was selected as a representative group for the East German cohort of 1973; they were interviewed repeatedly until the spring of 1989. In the spring of 1989, the third poll ($n = 587$) of these participants consented to take part in further surveys. It has been possible to continue the study following German reunification until today. In 2006, the twentieth survey and in 2007, the twenty-first survey were conducted. The main focus of the study dealt with political and social questions; for example those relating to long-term socialization in the GDR, experiencing German reunification, and changes in living conditions. Starting in 2002, an additional focus of the study has been an examination of the consequences of unemployment (cf. e. g. Berth, Förster & Brähler, 2005; Berth, Förster, Stöbel-Richter, Balck & Brähler, 2006).

The 383 respondents of the twenty-first survey (2007) of the Saxony Longitudinal Study were aged 34 years on average. All participants who took part in the first survey in 1987 were in grade 8 at that time, i.e. the sample was homogeneous in age. Of these participants, 54% were female. The response rate, referring to 587 persons who had agreed to further participate in 1989, amounted to 65%. Most of the interviewees finished their vocational or professional education; only 2 % did not have a completed vocational training. More than 85% lived in a relationship, 45% were married, and 67% had children. More information about the participants in the last surveys of the study is provided in Table 1.

1.2 Questionnaires

A great deal of information was collected on the experiences of reunification as well as the transformation of East Germany. Additionally, the experience of unemployment ("never", "one time", "repeatedly") and cumulative unemployment (in months) have been studied since 1996. Besides some standard instruments (among others HADS-D, GBB-24, SCL-9) some scales developed by the Saxony Longitudinal Study were also employed. The D-Score, comprising four items, is used in order to measure the general psychological burden of an individual, covering, for example, feelings of despondence and dejection or fear of the future. The G-Score investigates some common somatic symptoms (stomach-aches, heart trouble, nervousness, sleeplessness). In both of these screening instruments, higher scores signify a greater burden. The study questions focused also on social and family relations, family planning and the desire to have children.

The HADS-D (Hospital Anxiety and Depression Scale, Herrmann, Buss & Snaith, 1995) is an internationally-employed self-rating questionnaire for anxiety and depression in adults. It comprises 14 items. Its validity was demonstrated through several studies; current, representative reference values are available. The GBB-24, a short version of the "Giessener Beschwerdebogen" GBB (Brähler & Scheer, 1995), is one of

Table 1. Selected characteristics of the participants of the Saxony Longitudinal Study from 2002 until 2007

Survey (year)	16 (2002)	17 (2003)	18 (2004)	19 (2005)	20 (2006)	21 (2007)
Participants (N =)	423	419	414	385	387	383
Response rate (%)	72.1	71.4	70.5	65.5	65.9	65.2
Age (M)	29.0	30.1	31.1	32.1	33.2	34.2
Sex (female, N =, %)	221 (52.6)	227 (54.2)	222 (53.6)	205 (53.4)	211 (54.5)	207 (54.2)
Occupation (N =, %)						
In training	17 (4.0)	12 (2.9)	8 (1.9)	7 (1.8)	4 (1.0)	4 (1.0)
Worker	96 (22.9)	87 (20.8)	77 (18.6)	79 (20.6)	70 (18.1)	75 (19.8)
Employee	181 (43.1)	167 (40.0)	178 (43.0)	150 (39.1)	164 (42.5)	172 (45.5)
Self-employed	25 (6.0)	28 (6.7)	36 (8.7)	36 (9.4)	40 (10.4)	40 (10.6)
At home	50 (11.9)	53 (12.7)	44 (10.6)	42 (10.9)	37 (9.6)	28 (7.4)
Unemployed	22 (5.2)	38 (9.1)	40 (9.7)	42 (10.9)	42 (10.9)	22 (5.8)
Other	29 (6.9)	32 (7.7)	31 (7.5)	28 (7.3)	19 (7.5)	37 (9.8)
Marital status (N =, %)						
single	279 (66.0)	261 (65.3)	239 (57.7)	209 (54.3)	193 (49.9)	192 (50.1)
married	129 (30.7)	149 (35.6)	162 (39.2)	161 (41.9)	174 (45.8)	170 (45.1)
divorced	12 (2.9)	8 (1.9)	12 (2.9)	14 (3.6)	19 (5.0)	15 (4.0)
Children (N =, %)						
yes	182 (43.3)	211 (50.4)	235 (57.0)	235 (61.4)	244 (64.6)	252 (67.2)
no	238 (56.7)	207 (49.5)	177 (43.0)	148 (38.6)	134 (35.4)	123 (32.8)

Note: missing to 100 %: no statement

the most frequently used instruments in Germany for studying subjective physical complaints. Its 24 items cover such physical complaints as "feeling of weakness" or "pain in nape or shoulder". The questions can be grouped into four scales: exhaustion, gastric complaints, pain in the limbs, and heart trouble. All items are used in order to compile a global score ("feeling of discomfort"). The SCL-9 (Klaghofer & Brähler, 2001) is a short version of the internationally employed Symptom-Checklist-90-R. From each of the

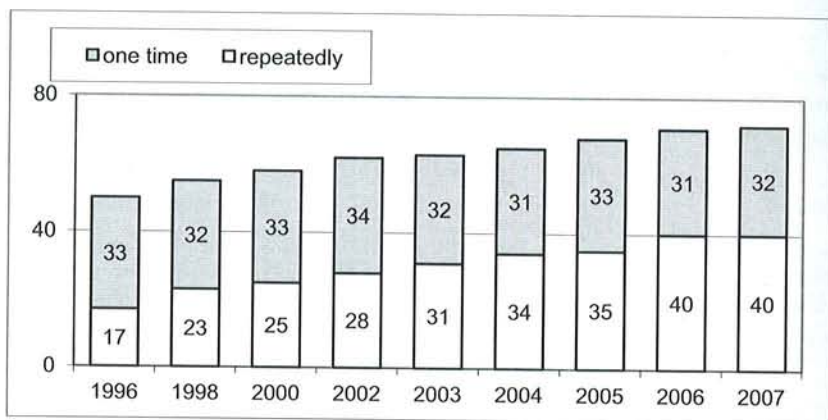
nine scales of the SCL-90-R, one item is used. Applying this efficient instrument, the psychological feeling of discomfort or the global distress of a person can be quantified.

2 Results

2.1 Experiences of unemployment in young East Germans 1996 - 2007

Figure 1 displays the participants' experiences with unemployment from 1996 to 2007. In 1996, the participants, then 23 years old, were asked about unemployment for the first time. Even at that time 50% of the sample was affected by unemployment. Until 2007 a total of 32% of the remaining sample had been unemployed once and 40% had been repeatedly unemployed. On average the respondents were unemployed for a total of 17.3 months until 2007. Distinct statistically significant differences were found by gender: the cumulative unemployment of women (20.7 months) was longer than that of men (13.5 months).

Figure 1. Proportion of participants with one-time or repeated unemployment, 1996 - 2007 (%)



2.2 Unemployment and physical complaints

Table 2 on the next page summarizes the results of the GBB-24 from 2002 until 2006.

Table 2. Frequency of unemployment and physical complaints, 2002 - 2006 (GBB-24, *M*, *SD*, Oneway Anova)

Experiences of unemployment									
2002			2004			2006			
Scale	never	once	re-pea- tedly	never	once	re-pea- tedly	never	once	re-pea- tedly
Exhaustion	5.64 (4.52)	5.88 (4.12)	6.85 (4.80)	5.08 (4.24)	5.53 (4.36)	6.31 (4.61)	5.06 (4.35)	4.79 (4.54)	6.03 (5.04)
	$F=2.64. p>0.05$			$F=2.81. p>0.05$			$F=2.66. p>0.05$		
Stomach-ache	2.68 (3.08)	2.65 (6.88)	3.32 (3.24)	2.60 (2.91)	3.08 (3.42)	3.36 (3.19)	2.64 (3.40)	2.32 (2.95)	3.14 (3.08)
	$F=2.03. p>0.05$			$F=2.04. p>0.05$			$F=2.36. p>0.05$		
Pain in the limbs	6.60 (4.23)	6.88 (4.27)	7.66 (4.35)	6.07 (4.29)	6.23 (4.40)	7.78 (5.15)	6.29 (4.76)	6.04 (4.69)	7.64 (4.95)
	$F=2.13. p>0.05$			$F=5.72. p<0.05$			$F=4.36. p<0.05$		
Heart trouble	1.89 (2.52)	2.19 (2.95)	2.57 (3.31)	1.63 (2.29)	1.81 (2.79)	2.59 (3.45)	1.54 (2.28)	1.62 (2.36)	2.18 (3.27)
	$F=1.84. p>0.05$			$F=4.26. p<0.05$			$F=2.29. p>0.05$		
Feeling of discomfort	16.81 (11.74)	17.61 (11.28)	20.39 (11.9)	15.38 (11.16)	16.65 (11.82)	20.04 (13.15)	15.54 (12.03)	14.77 (11.89)	19.00 (13.22)
	$F=3.46. p<0.05$			$F=5.52. p<0.05$			$F=4.47. p<0.05$		

In the 2002 data, there was only one significant difference for the global score of "feeling of discomfort"; it was typical of cumulatively unemployed respondents. In the data for 2004 and 2006, "feeling of discomfort" and "pain in the limbs" were in addition higher for these participants compared to the sample who were never unemployed or unemployed only once. A further difference can be found for "heart trouble" in 2004. For all surveys, this exemplifies an overall higher nonspecific burden for participants who had repeatedly been unemployed, whereas interviewees who had never been unemployed or unemployed only once did not differ with regard to their physical complaints.

The G-Score (data not shown, see Berth et al., 2007) records the degree of burden through physical/psychosomatic complaints, and it was applied for the first time in 1996. The data shows a homogenous pattern: Those who were repeatedly unemployed suffered from physical problems in all surveys employing this instrument. According to the results in the GBB-24, there were no differences with respect to physical burden among those participants who were unemployed only once or never at all.

2.3 Unemployment and mental health

Mental health was studied by anxiety and depression scores (HADS-D), the global score of psychological distress (SCL-9, see Table 3) as well as the value of the short questionnaire D-Score.

Table 3. Frequency of unemployment and anxiety, depression (HADS-D) as well as psychological distress (SCL-9), 2002 - 2006 (*M*, *SD*, Oneway Anova)

Scale	Experiences of unemployment								
	2002			2004			2006		
	never	once	re-pea- tedly	never	once	re-pea- tedly	never	once	re-pea- tedly
HADS-D Anxiety	6.24 (3.16)	6.13 (3.00)	7.44 (3.32)	5.53 (3.57)	5.67 (3.10)	6.30 (3.74)	5.36 (2.29)	5.16 (3.50)	5.81 (3.52)
	<i>F</i> =6.74. <i>p</i> <0.01			<i>F</i> =1.93. <i>p</i> >0.05			<i>F</i> =1.28. <i>p</i> >0.05		
HADS-D Depression	3.47 (2.86)	3.67 (2.69)	4.98 (3.00)	3.75 (3.10)	4.21 (3.16)	5.58 (3.66)	3.61 (2.89)	3.83 (3.49)	4.69 (3.62)
	<i>F</i> =10.68. <i>p</i> <0.001			<i>F</i> =11.38. <i>p</i> <0.01			<i>F</i> =42.8. <i>p</i> <0.05		
SCL-9 psychologi- cal distress	6.91 (6.67)	6.27 (5.39)	8.26 (6.89)	6.32 (5.62)	6.62 (5.18)	7.73 (6.20)	5.92 (5.17)	6.82 (6.86)	7.57 (6.08)
	<i>F</i> =3.29. <i>p</i> <0.05			<i>F</i> =2.37. <i>p</i> <0.1			<i>F</i> =2.38. <i>p</i> <0.1		

Concerning the HADS-D-scale for anxiety, in 2002 there was a statistically significant difference depending on the experience of unemployment, but there was no such difference in 2004 and 2006. Participants with cumulative unemployment reported more symptoms of anxiety in 2002. The scores for depression (HADS-D) showed a variable pattern in the survey years 2002, 2004 and 2006. Participants who had repeatedly been unemployed were, however, more depressive in each survey, and respondents who had never been affected by unemployment reported the lowest depression scores in all surveys.

The highest scores of general psychological distress (SCL-9) were always reported by participants who had repeatedly experienced unemployment. We see that their psychological distress was most distinct. However, these differences reach the level of significance ($p < 0.05$) only in 2002. In 2004 and 2006 there are only marginal differences ($p < 0.1$).

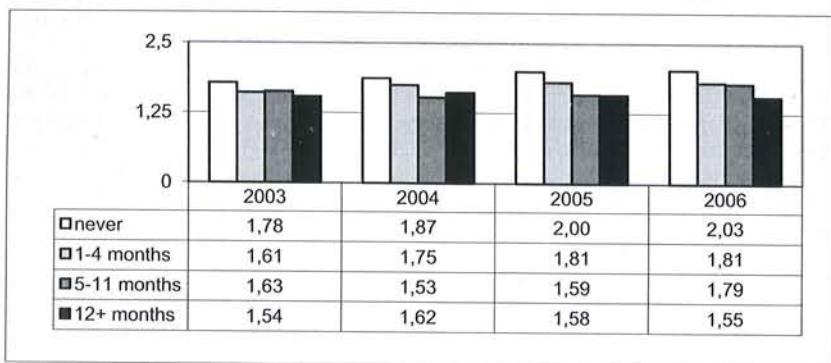
There was a considerably clearer pattern in all surveys by D-Score (data not shown, see Berth et al., 2007). From 1996 (12th survey) until 2007 (21st survey) for the SCL-9 the general psychological distress for each point in time was significantly related to the experience of unemployment. The highest psychological distress was, again, shown by participants who repeatedly experienced unemployment, followed by respondents who were unemployed only once. Participants who were never affected by unemployment always reported the lowest scores for psychological burden.

3.4 Unemployment and family planning

Significant delays in family formation exist for persons who have experienced unemployment. The participants with cumulative unemployment were less often married than those without any experience of unemployment. Thus, the share of married men differs according to whether they were affected by unemployment. Of all cases included in the surveys since 1998, 37% of the men and 58% of the women were married by the age of 33. Ten percent of the married men were unemployed several times and 14 % never or only once. Of the married women, 19% were unemployed on several occasions, 15% once and 24% never. The persons who reported cumulative unemployment appeared to marry later in life than those who were never unemployed. With respect to the number of children until 2006, no significant correlation with unemployment could be found. However, respondents who had never been unemployed tended to have more children than others.

Clustering the sample according to the cumulated duration of unemployment, we found that those who had not been unemployed more often stated 3+ children as an ideal. In contrast, participants who were among the long-term unemployed (12+ months) considered "no children" as an ideal. There was a statistically significant difference in the optimal number of children by unemployment. Figure 2 shows the changes regarding the ideal number of children for women between 2003 and 2006. Even though the results are not significant for each combination, there seems to be a relationship between the two factors in the longer term among female respondents. Nevertheless, as there was no statistical significance by current employment vs. unemployment, the impact is caused by cumulative unemployment.

Figure 2. Ideal number of children in relationship to the cumulated time of unemployment for women, from 2003 until 2006 (M)



2.5 Predictors of unemployment

As shown above, the Saxony Longitudinal Study also shows cumulative unemployment to be linked with higher physical and psychological burden but the causal direction of this correlation remains unaccounted for. Does unemployment make you sick or do the sick become unemployed more easily? Either hypothesis (shift and drift) can be proven by research (e. g. Kivimäki, Elovainio, Kokko, Pulkkinen, Kortteinen & Tuomikoski, 2003).

Since prevention becomes increasingly important in work life, the study of factors making people vulnerable for unemployment and its consequences takes on greater significance. Twenty-one years ago the goal of the Saxony Longitudinal Study was not to focus on unemployment and health. Thus a systematic test of various models on the basis of the given data is not possible. Nevertheless, some data from earlier surveys can be utilized.

An analysis of the predictive value of the respondents' school performance (cf. Berth, Förster, Balck, Brähler & Stöbel-Richter, 2008) may illustrate the importance of education for one's professional career and risk of unemployment. In the former GDR, most students went to a uniform kind of comprehensive school until grade 10. Only few students continued up to grade 12, which provided qualifications for higher education, while other students continued with vocational training. A statistically significant correlation of the tenth grade performance (1989) with the subsequent experience of unemployment was found. Seventeen years later, the former weak students suffered from unemployment more often and for longer periods of time than the others. The dependency is similar to that between further education and unemployment: If the person did not have a university degree the chance of becoming unemployed increased by 77 %. Even though women were unemployed for longer periods of time than men, gender was not a significant predictor for unemployment. The same applied to several other potential predictors such as having children or civil status.

Concerning psychological burden earlier in life and unemployment, a link was found (Figure 3, see also Berth et al., 2006).

Figure 3. Experiences of unemployment 2007 and psychological burden (D-Score, *M*) 1991, 1996 and 2007 (*n* = 169)

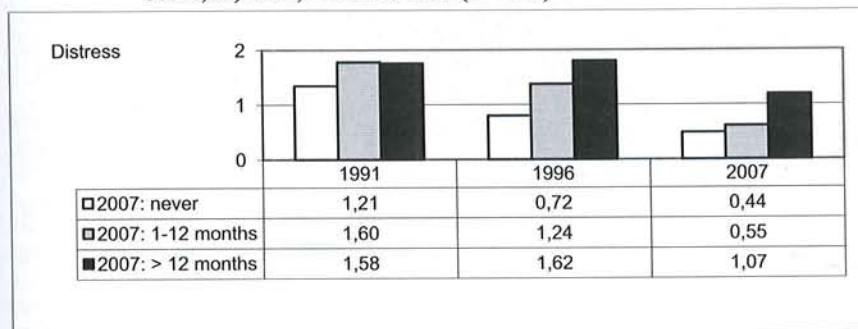


Figure 3 shows that the psychological burden depended on cumulative unemployment 2007 (three categories: never, 1-12 months, > 12 months) for all participants (*n* = 169) who took part in the Saxony Longitudinal Study in 1991, 1996 and 2007. Firstly, the figure illustrates the already described relation: Respondents who had been cumulatively unemployed until 2007 were psychologically more burdened than others. Yet, it also shows that those who were unemployed longer in 2007 (at the age of approx. 34) already had been more psychologically burdened in 1996 and in 1991. In 1991, the participants were about 18 years old. None of them had been unemployed previously. Those who demonstrated higher psychological burden in 1991 (by D-Score) had a risk of becoming unemployed in 2007 which was higher by a factor of 2.79 (sex-adjusted odds ratio).

3 Discussion

Labour markets in many European countries have changed crucially during recent years. Jobs requiring high education as well as service-related jobs are increasing. Nevertheless, unemployment remains a social, political and health-related topic, especially in many East European countries in transition as well as in the former GDR, presently Eastern Germany.

Unemployment is related to several physical complaints for many people concerned, such as higher risks of chronic bronchitis, back pain, vertigo, hypertension or bronchial asthma (Lange & Lampert, 2005), but there is still relatively little research on the somatic consequences of unemployment (Jin, Shah & Svoboda, 1995). One reason for this may be that psychological distress in unemployed people is often more serious than physical distress. Psychological impact mostly relates to such problems as depression, symptoms of anxiety, psychological distress, psychosomatic symptoms, satisfaction with life, and emotional well-being. The results of this study indicate that unemployment leads to a higher degree of physical complaints, anxiety, depression and a

generally increased level of distress. In the course of this, those with cumulative unemployment often described several conditions. In contrast, those who had been unemployed only once or for a short period of time, respectively, did not differ significantly from those who had never been unemployed. These (in-) group differences were consistently found in all surveys of the study. The study proved that increased psychological burden at the age of about 18 was associated with a significantly higher risk of unemployment 16 years later. Further analyses demonstrated, for example, a negative impact of unemployment on the quality of life (Berth, Förster & Brähler, 2005).

The consequence of unemployment on the psyche varies depending on several characteristics. Meta-analyses (e.g. Paul, Hassel & Moser, 2006) show that men, younger persons, persons with lower social or professional status, and people affected by long-term unemployment suffer more from unemployment. However, these consequences are also mediated by personality traits such as self-efficacy (e.g. Berth, Förster, Balck, Brähler & Stöbel-Richter, 2005) or coping (e.g. Christensen, Schmidt, Kriegbaum, Hougaard & Holstein, 2006).

In Germany, unemployment has decreased significantly during the last two years (2006-07). However, as already stated, considerable differences between East and West Germany continue to exist since German reunification. In the former GDR, unemployment rates are still twice as high as in West Germany. The present study could ascertain that the majority of East German respondents (70 %) had experienced unemployment once or repeatedly by the age of 34. On average, women were unemployed for longer periods of time. Well-qualified persons - only 2% of the respondents had not completed vocational training - also have a hard time finding a job. Due to the better economic situation, 25 % of the current study participants are now living in West Germany (see Berth, Förster & Brähler, 2004).

Due to the fact that the participants have reached their middle age, sociological and social-psychological aspects of family planning were one of the focuses of the Saxony Longitudinal Study. We were able to show that unemployment also has effects on civil status and parenthood: There was a time lag for starting a family as well as reduced wishes concerning the number of children as well as a reduced number of children actually born.

Our participants were socialized until the age of 16/17 in the former GDR and completed their schooling there. They witnessed the social changes following German reunification during their vocational training, and they could profit from the advantages of the new social system. Nevertheless, they also often had to face disadvantages in terms of unemployment. We should emphasise that the sample consists of a young, age-homogenous, well-educated and mobile cohort. We are planning to continue the panel study with a special focus on unemployment because there is a risk that the experience of unemployment may have psychologically negative consequences many years after re-employment (Lucas, Clark, Georgellis & Diener, 2004).

Since the Saxony Longitudinal Study was initially not designed to measure the impact of unemployment on health, data was not always gathered for all of those indicators which would have been interesting and important to explore. In unemployment research it is important to consider many indicators because the relation between unemployment and health is multifactorially conditioned (cf. e.g. Beland, Birch & Stoddart, 2002). Furthermore, the sample sizes of the single surveys vary considerably, which limits the possibility of longitudinal analyses.

Policy and decision makers are not sufficiently aware of the negative consequences of unemployment on health (Hammarström & Janlert, 2005). The results of the Saxony Longitudinal Study emphasize that unemployment should be seen as a passing, normal phenomenon which can be part of each person's professional biography, especially in the currently transforming markets, with their requirements of constantly changing professional biographies as well as high mobility and flexibility. Accordingly, society should change its way of dealing with unemployment. The data of the Saxony Longitudinal Study, for instance, emphasizes the importance of adequate health care for unemployed people. Despite the enormous bulk of research on the topic of unemployment and health, there is still a lack of studies examining interventions in health promotion for the unemployed.

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