

## Psychological consequences of unemployment: the moderating role of education

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The study aims to examine whether unemployed individuals with different educational levels experience equally severe psychological consequences of unemployment and whether these consequences are differently related to the two theoretical predictors (psychological and financial deprivation). The data were collected in 26 branch offices of the Croatian Employment Bureau, on a representative sample of the unemployed persons in Croatia. In order to examine the moderating role of education, participants were divided into the following three subgroups: primary school ( $N_1=174$ ), high school ( $N_2=762$ ) and university degree ( $N_3=196$ ). The unemployed with lower education reported a lower level of psychological health than individuals with higher education. In addition, it was confirmed that educational level has a moderating role on the relationship between psychological deprivation and psychological health.

*Key words:* unemployment, psychological health, psychological and financial deprivation, level of education

Many studies showed that unemployment has an adverse effect on the psychological well-being of the jobless individual (see Fryer & Payne, 1980; Hannish, 1999; Winnefield, 1995 for reviews of literature). The recent meta-analysis by McKee-Ryan, Song, Wanberg and Kinciki (2005) showed that unemployed persons reported lower level of mental health, life satisfaction, marital or family satisfaction, and subjective physical health than the employed. Moreover, longitudinal studies analyzed in this meta-analysis showed a significant reduction in mental health after a job loss, as well as an improvement in mental health, life satisfaction, and subjective physical health after reemployment. The results led authors to conclude that "it is appropriate to state that the evidence is strongly supportive of causal relationship because there is consistency in results across multiple kinds of studies and hundreds of data points" (p. 67). However, since the unemployed are by no means a homogeneous group, it should not be assumed that every unemployed person passes through an identical pattern of subjective experiences during the period of unemployment. Some characteristics of unemployed people and the situation in which they find themselves could moderate the effect of unemployment on well-being (Hepworth, 1980).

The educational level of the unemployed is one of potential moderator variables. It is one of the socio-economic status variables which are highly relevant to individuals' prospects for reemployment (Kanfer, Wanberg, & Kantrowitz, 2001) and cognitive appraisal of job loss (Price & Fang, 2002). Previous studies showed that socio-economic status moderated the impact of unemployment on the well-being of the unemployed, but the results were conflicting and inconclusive. Some studies found that higher socioeconomic status was related to higher levels of stress during the unemployment period (Hill, 1977), while other found the opposite, i.e., that the effects of unemployment were more negative for people with lower education (Hepworth, 1980; Kulik, 2000). Obviously, new studies are needed to test this moderating effect.

In addition, negative effects for different subgroups of the unemployed (e.g., with different level of education) could also be caused by different factors. Generally, two main theories which account for the negative impact of unemployment on psychological health are Jahoda's Latent deprivation (1982) and Fryer's Agency restriction model (1986). According to Jahoda, employment is a social attribute that provides both manifest and latent benefits. Manifest benefits are deliberate and intended and are associated with income, whereas latent benefits are unintended by-products of employment. The most important latent benefits are the following five: time structure of the waking day, regular shared experiences and contact outside the nuclear family, individuals' link to transcending goals and purposes,

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the definition of personal status and identity, and enforced activity (Jahoda, 1982). They satisfy enduring human needs and serve to maintain links with reality. According to Jahoda's account, unemployment leads to deprivation of both types of benefits, but it is the loss of latent benefits (i.e., psychological deprivation) that affects psychological health. Jahoda's propositions received moderate empirical support. Studies showed that, in comparison to the employed, unemployed people reported lower levels of some (time structure: Feather & Bond, 1983; Wanberg, Griffiths, & Gavin, 1997) or all latent benefits (Waters & Moore, 2002). Moreover, the unemployed reported less access to latent benefits than the underemployed (Creed & Machin, 2002). In addition, deprivation of latent benefits was significantly related to psychological well-being (Creed & Macintyre, 2001; Creed, Muller & Machin, 2001; Creed & Watson, 2003). All together, empirical tests of Jahoda's theory showed that unemployed people reported psychological deprivation and that those more deprived generally showed a lower level of psychological well-being.

Fryer (1998) criticized Jahoda's model because of the passivity it ascribes to unemployed people. His main complaint to Jahoda's theory is directed at its basic assumption that the individual is a passive object left at the mercy of social institutions, which do or do not satisfy his or her psychological needs. Contrary to Jahoda, Fryer bases his Agency restriction model (Fryer & Payne; 1986, Fryer, 1998) on the assumption that "people are socially embedded agents actively striving for self-determination, attempting to make sense of, initiate, influence and cope with events in line with personal values, goals and expectations of the future in a context of cultural norms, traditions and past experience" (Fryer, 1998, p. 223). According to this model, unemployment is psychologically destructive because it restricts and discourages individual's agency. Fryer considers the loss of income to be the core negative consequence of unemployment. It influences the well-being of the unemployed individual through the mechanisms of future uncertainty and psychologically corrosive poverty. Psychologically destructive uncertainty arises from the unemployed person's inability to make future plans due to lack of money. Moreover, their psychological well-being is deteriorated because of relative poverty. This means that, in order to be psychologically destructive, the experienced poverty does not have to be at a certain absolute level (e.g., 60 percent of median income of similar households as in poverty research) but relative in comparison to the self-selected reference group. The model received considerable empirical support; unemployed individuals reported more financial deprivation than employed individuals or students (Bjarnason & Sigurdardottir, 2003; Jackson, 1999). Moreover, many studies showed that objective and subjective indicators of financial deprivation were strongly related to the decline in psychological health of the unemployed person (e.g., Bjarnason & Sigurdartodir, 2003; Ratakeisu & Johnsson, 2003; Ullah, 1990; Vinokur, Price, & Caplan, 1996).

Recent studies showed that the ways in which the two models explain negative psychological consequences of unemployment were complementary rather than contrary; both psychological (latent benefits) and financial (manifest benefits) deprivation independently contribute to the predicted well-being of the unemployed (Creed & Macintyre, 2001; Creed & Watson, 2003). However, we can assume that relative contribution of psychological and financial deprivation in explaining psychological health may be different for various subgroups of the unemployed. In particular, this may be true for unemployed people differing in education.

Our study, thus, had two aims. First, we wanted once again to examine whether educational level moderated the impact of unemployment on psychological well-being of the unemployed individuals. Based on the results of the meta-analysis by McKee-Ryan's et al. (2005), which found positive (albeit weak) relationship between the level of education and psychological health of unemployed people, we hypothesized that unemployed individuals with lower education would report lower level of psychological health than those with higher education (H1).

The second aim of our study was to examine the moderating role of educational level on the relationship of psychological and financial deprivation with psychological health of the unemployed. We assumed that the strength of these relationships would depend on the relative value that unemployed people attach to psychological and financial rewards. According to work values research (e.g., Šverko & Super, 1995), there are consistent differences between groups of workers differing in education; individuals with lower educational level give priority to financial rewards, while individuals with higher educational level place more emphasis on psychological benefits they get from their work. In line with these findings, we expected psychological health to be more strongly related to financial deprivation for the unemployed with lower educational levels (H2) and to psychological deprivation for the unemployed with higher education (H3).

## METHOD

### *Participants and procedure*

The participants were unemployed persons registered with the Croatian Employment Bureau. They were interviewed at the regional branch offices when making their mandatory monthly visits. Out of 1882 persons asked to participate, 744 (39.5%) refused, so the final sample consisted of 1138 unemployed persons. Considering the geographical distribution, gender (58% female) and duration of unemployment (35% unemployed for less than 6 months, 32% from 7 months to 3 years and 26% for more than 3 years) the sample corresponded to that of all the registered

unemployed persons in Croatia. However, the sample was somewhat biased towards younger and better educated persons, since older or less educated persons more frequently refused to participate.

The participants were interviewed from June to August 2003. Considering that there could be systematic differences between the unemployed making their visits at different times during a month or day, participants were interviewed on different days of the week; at the beginning, in the middle and at the end of the month; and at different times during the day. Twenty eight specially trained psychology students, who worked as interviewers, approached the participants at the corridor of the Employment Bureau building and asked them to participate in the study. The participants completed the questionnaire individually or in small groups. The interviewers helped a smaller number of respondents who had difficulties in reading and writing, by reading questions and filling in their answers. The average completion time was 30 minutes. The interviewers marked the sex and approximate age of the persons who refused to participate.

The interviewers emphasized that the study was anonymous, undertaken by an independent research institution for scientific purposes, and potentially useful for social policy-making. All interviewers wore badges denoting their affiliation to the university.

#### Instruments

*Psychological deprivation*: six *ad hoc* questions were devised for measuring Jahoda's latent functions. The participants were asked to indicate the degree to which

- *their typical day was filled with content or activity* (regular activity)
- *their life was temporally organized and structured* (time structure)
- *they were meeting people and socializing* (shared experience)
- *they felt as useful members of society* (collective purpose)
- *they were appreciated by other people* (status)
- *were confident and felt self-respect* (personal identity).

Responses were expressed on a four-point scale, where 1 implied little or no deprivation and 4 implied considerable deprivation. There were substantial correlations between the items and conducted factor analysis supported that one dimension underlined the answers to the six questions. The composite scores, obtained by summing the responses over the six items, had acceptable internal consistency ( $\alpha = .72$ ).

*Financial deprivation* was expressed as a composite score of 9 questions considering the experienced financial deprivation. One question inquired about general financial strain experienced during the previous month (Thinking

back over the past month, how often have you had serious financial worries?) and other eight questions inquired whether respondents had enough money to satisfy their various specific needs (e.g., food, accommodation, medication) to a satisfactory level. Factor analysis also showed one underlying latent dimension. The scale had high internal consistency ( $\alpha = .90$ ).

*Psychological health* was measured with the Croatian version of SF-36 questionnaire (Ware & Shebourne, 1992; Jureša, Ivanković, & Vuletić, 2000). It is a well known instrument often used in various studies of subjective health. SF-36 represents theoretically based and empirically verified operationalization of two general health concepts – physical and psychological health and their two general manifestations – functioning and well-being. Only the measure of general psychological health was used in this study. Cronbach's alpha coefficient in our study indicated satisfactory level of reliability ( $\alpha = .90$ ).

*Control variables* used in this study were gender (coded as 1=male, 2= female), age, and unemployment duration (in months).

## RESULTS

#### *Unemployed persons with different educational levels: demographic characteristics*

The participants were divided into the following three subgroups according to their education: primary school or lower ( $N_1=174$ ), high school ( $N_2=762$ ), and university degree ( $N_3=196$ ). Demographic characteristics of the participants are summarized in Table 1.

In all groups, there were more women than men (university degree group was dominated by women the most). Significant differences were found on all other variables, too.

Table 1  
Description of the unemployed with different levels of education

	Level of education					
	Primary school		High school		University degree	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Age	39.6	10.84	31.3	15.57	34.0	11.71
Unemployment duration (months)	60.2	63.70	31.5	42.21	33.9	46.35
Gender (% males)	43.3		43.8		35.6	
<i>N</i>	174		762		196	

Participants with high school education were the youngest, those with primary school the oldest and university degree participants were in the middle (all differences were significant at  $p < .05$ ). Considering the duration of unemployment, participants with primary school education were unemployed significantly longer than participants with high school and university degree education ( $p < .05$ ).

*Unemployed persons with different educational levels: differences in responses to unemployment*

In order to examine whether there are differences in the effects of unemployment between the groups of participants with different educational levels, univariate ANCOVAs were performed. Firstly, we compared the psychological health of the three groups. Age, gender, and duration of unemployment were used as covariates.

In addition, the same analysis was repeated for psychological and financial deprivation as dependent variables in order to better explain psychological differences between the groups. The results are shown in Table 2.

Table 2 shows the comparison between the unemployed with different educational levels on the following three measures: psychological health, psychological deprivation and financial deprivation. When psychological health served as the dependent variable, ANCOVA showed a significant effect of the group ( $F(2,1028) = 6.62; p < .01$ ). *Post hoc* comparison with Bonferroni procedure revealed that university degree participants had significantly higher level of psychological health than the other two groups (there was no significant difference between primary and high school participants). When psychological deprivation served as the dependent variable, there was no main effect ( $F(2,1102) =$

$2.37; p > .05$ ). Groups of the unemployed with different educational levels did not differ in the level of psychological deprivation. When financial deprivation was the dependent variable, ANCOVA revealed significant effect of the group ( $F(2,1068) = 25.81; p < .01$ ). Bonferroni *post-hoc* comparison showed that all group comparisons were significant ( $p < .05$ ). Participants with primary school education were the most financially deprived, those with university degree the least. Therefore, Hypothesis 1 was supported.

*Unemployed persons with different educational levels: moderating influence of educational level in explaining psychological health*

Bivariate correlations among variables are reported in Tables 3 and 4. Taken together, in primary and high school participants financial and psychological deprivation were meaningfully related to psychological health in a way that psychologically and financially more deprived participants reported lower level of psychological health ( $r > .32$ ; Tabachnik & Fidell, 1996). In the university degree subgroup, only psychological deprivation was meaningfully related to psychological health – those more deprived psychologically reported lower level of psychological health. Correlation between financial deprivation and psychological health for the university degree group was just below the threshold defined by Tabachnik and Fidell (.26,  $p < .01$ ). Although we did not find a meaningful relationship between control variables and psychological health ( $r > .32$ ), psychological health significantly correlated with gender in the primary school group, age in the high school and university level group, and duration of unemployment in the high school group. In the total sample, all control variables correlated with psychological health.

Table 2  
ANCOVA results for psychological health, psychological and financial deprivation

Dependent variable	Education			<i>F</i>	Covariates ( <i>F</i> )		
	adj. $M_A$ ( $SD_A$ )	adj. $M_B$ ( $SD_B$ )	adj. $M_C$ ( $SD_C$ )		Gender <sup>a</sup>	Age	Unemployment duration
Psychological health	64.0 (23.66)	67.8 (22.96)	72.9 (22.35)	6.62**	5.30*	39.80**	3.83*
Psychological deprivation	12.3 (3.59)	12.3 (3.21)	11.7 (2.98)	2.37	0.79	27.54**	1.08
Financial deprivation	28.8 (6.23)	24.8 (6.32)	22.3 (5.83)	25.81**	11.71**	87.46**	3.28

Note. \* $p < .05$ , \*\* $p < .01$ . <sup>a</sup>1=male, 2=female.



Table 3

Bivariate correlations among the used variables for the Total (*above* diagonal;  $N=1138$ ) and primary school group (*below* diagonal;  $N=174$ )

Variable	1	2	3	4	5	6
1. Gender <sup>a</sup>	-	.01	.02	.04	.08**	-.06**
2. Age	.16*	-	.36**	.18**	.34**	-.25**
3. Unemployment duration (in months)	.10	.41**	-	.10**	.22**	-.16**
4. Financial deprivation	.09	.23**	.13	-	.33**	-.47**
5. Psychological deprivation	-.09	.17**	-.06	.34**	-	-.40**
6. Psychological health	-.18**	-.16	-.13	-.36**	-.38**	-

Note. <sup>a</sup>1=male, 2=female.

Table 4

Bivariate correlations among the used variables for the High school group (*above* diagonal;  $N=762$ ) and university degree participants (*below* diagonal;  $N=196$ )

Variable	1	2	3	4	5	6
1. Gender <sup>a</sup>	-	.00	-.03	.12**	-.01	-.05
2. Age	-.21**	-	.41**	.35**	.19**	-.27**
3. Unemployment duration (in months)	-.12	.47**	-	.20**	.14**	-.18**
4. Financial deprivation	-.08	.15*	.19**	-	.35**	-.41**
5. Psychological deprivation	-.04	.25**	.20**	.21**	-	-.47**
6. Psychological health	-.06	-.17**	.03	-.26**	-.54**	-

Note. <sup>a</sup>1=male, 2=female.

To test the contribution of psychological and financial deprivation in predicting psychological health for groups of the unemployed with different levels of education, hierarchical regression analyses were performed for each educational group. In all analyses psychological health was used as a dependent variable, gender, age, and duration of unemployment as controls, and psychological and financial deprivation as predictors. In order to determine unique contribution of each of the two theoretical predictors we performed two sets of hierarchical regression analyses. In the first three (Table 5), psychological deprivation was entered in the second and financial deprivation in the third step. In other three (Table 6) the order of predictors was reversed. This kind of analysis was necessary because these two theoretical predictors were correlated in all subsamples, and our goal was to determine unique contribution of each of them in explaining psychological health.

The summary results of regression equations are shown in Tables 5 and 6. As it can be seen in Table 5, with sociodemographic variable being controlled, psychological deprivation significantly predicted psychological health for all three groups (Step 2, all  $p < .01$ ). Entered in Step 3, financial deprivation adds significant proportion of explained variance in the three subsamples ( $p < .01$ ). Moreover, psychological deprivation remained a significant predictor even after financial deprivation was entered in equation for all of the groups. As expected, the results were the same for reversed order of predictors (Table 6): financial deprivation significantly predicted psychological health over control variables and remained significant after psychological deprivation was entered in the equation. Psychological deprivation, entered in Step 3, significantly predicted additional variance of psychological health after controlling for sociodemographic variables and psychological deprivation. In total, the percentages of variance in psychological health explained with our predictors were 22.3% in primary school, 30.5% in high school and 32.0% in university degree group. Apart from that, percentage explained by both predictors over and above control variables was 18.7% in primary school group, 23% in high school, and 31.9% in university degree group.

In order to examine whether the level of education moderates the relationship between financial and psychological deprivation and psychological health, we compared last step  $\beta$ -coefficients for these predictors among our three subgroups. Note that last step betas are equal for both sets of regressions since they are consisted of same predictors. As can be seen in Tables 5 and 6, both variables were significant predictors in all three regression equations (all  $p < .01$ , except financial deprivation in the university degree group which is still significant at .05 level). Standardized partial regression coefficients for financial deprivation were almost identical for the groups with primary and high school education (-.258 and -.246, respectively) and somewhat smaller for the university degree group (-.141).  $\beta$ -coefficients for psychological deprivation were -.303 (primary school), -

Table 5

Summary data for three Hierarchical Multiple Regression Analyses in predicting psychological health for the primary school, high school and university degree groups: contribution of financial deprivation after controlling for psychological deprivation

Predictors	Primary school			High school			University degree		
	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3
Gender <sup>a</sup>	-.148	-.169*	-.133	-.041	-.051	-.020	-.080	-.121	-.118
Age	-.095	.000	.042	-.232**	-.156**	-.089*	-.214*	-.152*	-.125
Unemployment duration	-.101	-.145	-.131	-.084*	-.052	-.036	.059	.086	.095
Psychological deprivation		-.383**	-.303**		-.440**	-.368**		-.540**	-.514**
Financial deprivation			-.258**			-.246**			-.146*
Model summary									
R	.238	.442	.501	.281	.514	.557	.193	.566	.582
R <sup>2</sup> change	.056*	.139**	.055**	.079**	.185**	.047**	.037	.282**	.019**
Adjusted R <sup>2</sup>	.036*	.172**	.223**	.075**	.259**	.305**	.021	.304**	.320**

Note. \* $p < .05$ , \*\* $p < .01$ ; <sup>a</sup>1=male, 2=female.

Table 6

Summary data for three Hierarchical Multiple Regression Analyses in predicting psychological health for the primary school, high school and university degree groups: contribution of psychological deprivation after controlling for financial deprivation

Predictors	Primary school			High school			University degree		
	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3
Gender <sup>a</sup>	-.148	-.103	-.133	-.041	.002	-.020	-.080	-.078	-.118
Age	-.095	-.010	.042	-.232**	-.114**	-.089*	-.214*	-.165	-.125
Unemployment duration	-.101	-.095	-.131	-.084*	-.052	-.036	.059	.076	-.095
Financial deprivation		-.356**	-.258**		-.367**	-.246**		-.239**	-.146*
Psychological deprivation			-.303**			-.368**			-.514**
Model summary									
R	.238	.415	.501	.281	.440	.557	.193	.302	.582
R <sup>2</sup> change	.056*	.116**	.078**	.079**	.115**	.116**	.037	.054**	.248**
Adjusted R <sup>2</sup>	.036*	.148**	.223**	.075**	.189**	.305**	.021	.070**	.320**

Note. \* $p < .05$ , \*\* $p < .01$ ; <sup>a</sup>1=male, 2=female.

.368 (high school), and -.514 (university degree) suggesting the moderating effect of the educational level on the relationship between psychological deprivation and psychological health.

In addition, we compared the percentage of each predictor's unique contribution in explaining psychological health variance. This unique contribution was calculated as a change in percentage of explained variance when other variables are controlled, i.e. last step  $R^2$  change for financial deprivation seen in Table 5, and psychological deprivation seen in Table 6. Percentages of variance in psychological health explained uniquely by financial deprivation were the following: 5.5% for the primary school group, 4.7% for the

high school group, and 1.9% for the university degree group. In accordance with the suggested moderated effect, the percentages explained by psychological deprivation were 7.8% in the primary school, 11.6% in the high school, and 24.8% variance in the university degree group.

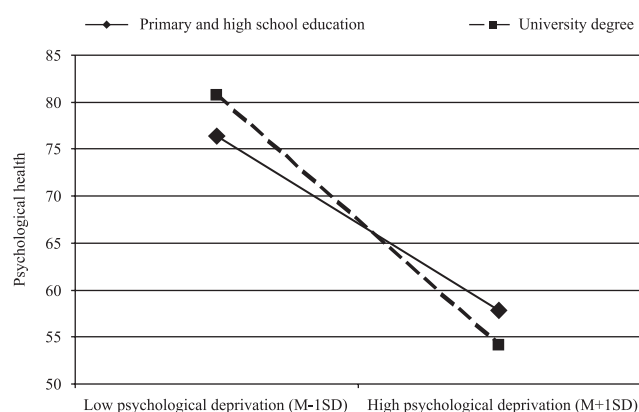
In order to test whether these differences are statistically significant, we performed one more hierarchical regression analysis. This time, the analysis was performed in two steps on the total sample. In the first step, gender, age, duration of unemployment, level of education, psychological, and financial deprivation were entered as predictors. Because educational level is coded as a categorical variable, two dummy variables were created – one for the primary school and the other for university degree group (high school participants were used as the reference group). In order to test the moderating role of educational level on the relationship between financial/psychological deprivation and psychological health, interaction terms between dummy variables and financial/psychological deprivation were created. Before creating multiplication terms, in order to avoid multicollinearity problems, results on psychological/financial deprivation were centered around their respective means. The results of regression analysis are shown in Table 7.

Table 7 shows that the contribution of interaction terms in explaining psychological health is only marginally significant ( $R^2$  change = .006;  $p = .07$ ). However, the interaction term between university degree and psychological deprivation was significant at 5% percent level. Direction of moderation effect is shown in Figure 1. As can be seen, in the university degree group, the relationship between psychological deprivation and psychological health was stronger than for the unemployed with lower education. Therefore, our results supported only the third, but not the second hypothesis.

*Table 7*  
Results of hierarchical multiple regression testing the moderating role of the level of education on the relationship between psychological/financial deprivation and psychological health

Predictors	Standardized partial regression coefficients ( $\beta$ )	
	Step 1	Step 2
Gender <sup>a</sup>	-.054*	-.053*
Age	-.074*	-.074*
Unemployment duration	-.035	-.031
Primary school <sup>b</sup>	-.038	-.036
University degree <sup>c</sup>	-.027	.030
Financial deprivation	-.232**	-.250**
Psychological deprivation	-.378**	-.369**
Primary <sup>b</sup> X financial deprivation		.009
Primary <sup>b</sup> X psychological deprivation		-.044
University <sup>c</sup> X financial deprivation		-.045
University <sup>c</sup> X psychological deprivation		.062*
Model Summary		
R	.557	.562
Adjusted R <sup>2</sup>	.305	.308
R <sup>2</sup> change	.305**	.006

Note. \* $p < .05$ , \*\* $p < .01$ ; <sup>a</sup>1=male, 2=female; <sup>b</sup>1=primary school, 0= high school/university degree; <sup>c</sup>1=university degree, 0=primary school/high school.



*Figure 1.* Moderation effect of the educational level on the relationship between psychological deprivation and psychological health

## DISCUSSION

This study explored how the unemployed with different educational levels responded to unemployment and whether the contribution of two theoretical predictors (psychological and financial deprivation) in explaining psychological health differed among them. Based on previous studies and theoretical explanations, we expected the unemployed with lower education to suffer more severe psychological consequences of unemployment (H1). Considering the explanation of psychological health, we expected that the financial deprivation would be more strongly related to psychological health in participants with lower education (H2) and psychological deprivation in participants with higher education (H3).

Our Hypothesis 1 was supported. Results showed that the unemployed with primary and high school education reported significantly lower levels of psychological health than university degree group, even after we controlled for differences in gender, age, and unemployment duration. In addition, the unemployed with lower educational level showed significantly higher financial deprivation. There are at least two sets of explanations for these results. The first is related to financial circumstances in which the unemployed with different educational level live, while the second is related to the expectations of future employment.

Unemployment represents a great threat to the financial situation of the people who are exposed to it. Educational level is usually correlated with other indicators of socioeconomic status, i.e. people with higher education have easier access to financial and social resources (Kulik, 2000). Our analyses supported this finding by showing significant differences in the indicators of financial situation between the unemployed with different levels of education, i.e. people with lower education experienced higher levels of financial deprivation. Furthermore, many studies found that depleted financial resources aggravated reactions to job loss, while possessing financial resources can cushion the stresses of unemployment (e.g., Bjarnason & Sigurdartodir, 2003; McKee-Ryan et al., 2005; Ratakeisu & Johnsson, 2003; Ullah, 1990; Vinokur, Price, & Caplan, 1996). Therefore, a possible explanation for lower levels of psychological health found in unemployed with lower education in our study could be in their unfavorable financial situation, which in turn leads to lower psychological health.

Another explanation for this result can be the situation on the labor market to which the unemployed with different educational levels are exposed. The labor market in Croatia, as in other transitional countries, is characterized by the loss of job security, which was in the past provided by state-owned companies but which is nowadays replaced by high uncertainty of the competitive job market. The transformation of economy made education and related skills to be the crucial human capital, highly influencing the probability of reemployment, job security, and upward mobility. Therefore, it

is understandable that workers with little human capital in the form of education may respond to unemployment with more resignation and show lower levels of psychological health. To put it simply, the unemployed with primary and high school education are less competitive and for them the prospects of reemployment are lower than for those with a university degree. These results are in accordance with the results of a study conducted on a comparable labor market (transformation of labor market in China, Price, & Fang, 2002).

In order to examine whether psychological and financial situation contribute differently to the prediction of psychological health of the unemployed with different levels of education, we performed hierarchical regression analyses. Our results showed several things. First, both psychological and financial deprivation explained a significant proportion of psychological health of the unemployed in all three groups. The fact that both variables were significant predictors of psychological health suggests that both financial deprivation and unmet psychological needs associated with employment contribute to psychological distress caused by unemployment. These results are in accordance with the literature (Creed & Macintyre, 2001; Creed & Watson, 2003) and once again prove that Jahoda's Latent Deprivation Model and Fryer's Agency Restriction Model stand in a complementary rather than a contrary relation. Secondly, in all three groups psychological deprivation accounted for a larger proportion of psychological health than financial deprivation, giving somewhat stronger support to the Latent Deprivation Model. It seems that unsatisfied psychological needs have stronger effect on decline in psychological health during unemployment than does experienced financial strain. Third, in accordance with the hypothesis 3, differences in regression coefficients for psychological deprivation between the three groups suggest that the level of education moderates the relationship between psychological deprivation and psychological health; the proportion of variance in psychological health accounted by psychological deprivation was larger for the people with higher education (7.8% in primary school, 11.6% in high school and 24.8% variance in the university degree group). The moderation effect is further supported by significance of interaction term between university dummy variable and psychological deprivation.

We did not find support for the expected moderation effect of educational level on the relationship between financial deprivation and psychological health (H2). Percentages of variance explained are relatively low (5.5%, 4.7%, and 1.9% for primary school, high school and university degree group, respectively) but are in accordance with the literature (e.g., Creed & Watson, 2003). It seems that financial deprivation contributes equally to psychological health, regardless of the educational level.

The fact that the strength of the relationship between psychological deprivation and psychological health differs



for subgroups with different educational levels, suggests that psychological effects of unemployment on health could have different causes. These results are in accordance with the discrepancy hypothesis for explaining unemployment effects. According to this hypothesis, discrepancies between desirable and attained outcomes are associated with negative outcomes, such as psychological distress or dissatisfaction (Paul & Moser, 2006). In the studies of work values, it has been consistently shown that subjects with higher educational levels express a higher degree of orientation to self-fulfillment, whereas subjects with lower occupational levels are more often extrinsically oriented, stressing the importance of material rewards and security (Šverko & Vizek-Vidović, 1995). These results were confirmed by a study of work values in Croatia during the eighties. This study found that professional and managerial subjects place the greatest emphasis on self-actualization whereas semiskilled and unskilled workers give priority to utilitarian and social values (Šverko, Jerneiĉ, Kulenović, & Vizek-Vidović, 1995). If we analyze our measure of psychological deprivation, we can see that it is highly saturated with self-actualization needs (i.e., personal identity, collective purpose). The fact that people with higher educational level value these needs more could, due to discrepancy caused by unemployment situation, bring about greater decline in their psychological health.

Finally, there are a number of issues in relation to future research and limitations of our results. Two of them are the most serious. First, cross-sectional nature of our research design does not allow us to identify the direction of causality in any of the observed relationships. It could be that low levels of psychological health cause unemployed people to perceive themselves as psychologically and financially deprived. Only carefully designed longitudinal studies could resolve this problem (Menard, 2002). Secondly, our results are based on self-report data and the method variance is a concern. We could assume that correlations are somewhat inflated because of the method variance. Future research should attempt to include data from multiple sources and be augmented with non-survey designs (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003).

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