



Engagement in meaningful activities during unemployment and subjective well-being: Contributions from a Portuguese study

Marta Sousa-Ribeiro¹, Magnus Sverke², & Joaquim Luís Coimbra³

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¹ Department of Psychology, Stockholm University.

E-mail: marta.s.ribeiro@psychology.su.se

² Department of Psychology, Stockholm University.

³ Faculty of Psychology and Educational Sciences, University of Porto.

Abstract

In an unstable and unpredictable labor market, older workers are in a particularly disadvantaged situation. Indeed, from the moment an individual becomes unemployed, age is the most powerful individual attribute affecting how long it will take to find a new job, and for many older individuals, job loss in fact leads to their permanent exclusion from the labor market. Nevertheless, older unemployed individuals are an understudied population in unemployment research. In the literature, unemployment has consistently been associated with reduced well-being, and research has shown that an important determinant of well-being during unemployment is an individual's involvement in personally meaningful activities. Yet, studies on the psychological mechanisms underlying the positive association between activity and well-being during unemployment seem to be relatively scarce. This study investigates to what extent engagement in meaningful activities by older unemployed people is associated with their well-being and if this relationship is mediated by the perceived quality of the psychosocial environment – operationalized as the perceived access to the latent benefits of employment and the environmental “vitamins” included, respectively, in the latent deprivation model and the vitamin model. The sample comprised 185 Portuguese unemployed individuals aged 40+, who were asked to fill in self-report questionnaires in job- and training centers located in the Porto metropolitan area. Ordinary least squares path analyses were calculated to investigate the mediational model. Results show that the activities in which participants were most engaged were passive activities at home, followed by family-related activities and domestic chores. Furthermore, results suggest that the engagement in certain activities during unemployment – social and cultural activities and work-related activities – is beneficial for well-being through the perception of greater social contacts and the perception of greater contribution to society and integration in the community. These findings may be useful for both policy-making and practitioners aiming to turn unemployment into a less psychologically harmful experience.

Keywords

Unemployment, meaningful activities, latent deprivation model, vitamin model, well-being.

Introduction

Job loss and the transition into unemployment are often unanticipated life events with the direct and immediate consequence of losing a role (that of worker) and gaining a new one (unemployed person), which may in turn have a considerable impact on other life roles. Indeed, among life events, job loss is considered one of the top 10 most traumatic experiences (Hanisch, 1999), as it threatens individuals' personal and family stability, lifestyle, and psychological well-being as a consequence of both the transition itself and the difficulty individuals may experience in adapting to and constructively resolving the new situation.

In a fluid, unstable and unpredictable labor market context, the older members of the workforce seem to be in a particularly vulnerable situation (Klehe, De Pater, Koen, & Kira, 2017). Despite of this, older adults have rarely been the focus of unemployment research, as noted by Paul, Hassel and Moser (2014) in their review of the individual consequences of job loss and unemployment. As official statistics show, long-term unemployment rates (which represent those individuals who have been unemployed for 12+ months) are substantially higher for older unemployed individuals compared to their younger counterparts. Moreover, there is a high probability that official unemployment figures do not represent the totality of those older unemployed adults who are without a job but have given up their active job search in the absence of job opportunities, eventually withdrawing from the labor market (Centeno, 2000). A considerable number of older unemployed individuals are then expected to remain out of employment for a long period, and for many of them job loss may in fact lead to their permanent exclusion from the labor market.

Literature has consistently shown that, in general, unemployment has a long-lasting detrimental impact on psychological well-being (see meta-analyses by Luhmann, Hofmann, Eid, & Lucas, 2012; McKee-Ryan, Song, Wanberg, & Kinicki, 2005; Paul & Moser, 2009). Two theoretical perspectives tend to dominate the literature in the study of the psychosocial impact of unemployment: the latent deprivation model (Jahoda, 1982) and the vitamin model (Warr, 1987). These approaches share the general assumption that unemployment predicts psychological distress and not the reverse, but propose different causes for this well-established negative impact of unemployment (Andersen, 2009).

In order to understand if there may be viable alternatives to employment, at least in psychological terms (Miles, 1983), it seems therefore of great interest for both policy-making and practitioners working with the unemployed to expand the knowledge regarding the extent to which older unemployed individuals engage in meaningful activities during unemployment and how this may affect their well-being. A number of studies have found that engagement in meaningful activities (i.e., activities that are structured and oriented towards personal, relevant goals that are distinguishable from simply *keeping busy in general*) is an important determinant of well-being during unemployment (e.g., Kamerāde & Bennett, 2015;

Waters & Moore, 2002c; Warr et al., 2004a). Yet, studies on the psychological mechanisms underlying the positive association between activity and well-being during unemployment seem to be relatively scarce.

The aim of the present study is therefore to investigate to what extent engagement in meaningful activities by older unemployed people contributes to their well-being and which processes underlie this association. We begin by investigating levels of engagement in meaningful activities in which unemployed people engage. Building on both the latent deprivation model (Jahoda, 1982) and the vitamin model (Warr, 1987, 2007), we then investigate the associations between engagement in meaningful activities during unemployment and subjective well-being among older unemployed people. We also test whether this relationship is mediated by perceived access to certain psychosocial features included in Jahoda's (1982) and Warr's (1987) approaches (i.e., the perceived quality of one's psychosocial environment).

The following sections discuss the theoretical framework and empirical literature from which the study's hypotheses derive, starting with a revision of the empirical research on the associations between engagement in meaningful activities during unemployment and subjective well-being. Subsequently, the latent deprivation model (Jahoda, 1982) and the vitamin model (Warr, 1987) are presented, and research on the relationship between the perceived quality of one's psychosocial environment (i.e., perceived access to the psychosocial features included in both models) and subjective well-being is briefly discussed. Next, the associations between engagement in meaningful activities and the perceived quality of one's psychosocial environment are discussed, and finally, the mediational hypothesis investigated in this study is presented.

Engagement in meaningful activities during unemployment and subjective well-being

Leisure is often considered an activity performed in non-employment time and is traditionally seen as a complement to employment (Fryer & Payne, 1984). Therefore, during unemployment, leisure may lose its value (Scanlan, Bundy, & Matthews, 2011) as the individual may face not only financial, but also psychological, barriers to experiencing leisure (Glyptis, 1989). Indeed, an unemployed individual is viewed as one who "should be working" (Glyptis, 1989) and therefore is "undeserved of leisure," as leisure is seen as "time out from hard work" (Scanlan et al., 2011, p. 29). Caldwell (2005) considers leisure as one of the "freest" contexts in a person's life, and claims that most people engage in leisure activities when these activities are intrinsically motivating or they serve some future purpose. Following this reasoning, it can be argued that activities such as household activities and child or elderly care should not be considered "pure leisure" as they are typically not chosen but imposed by external circumstances. That does not mean, however, that such activities are not personally meaningful, which they indeed are for many individuals. Therefore, although leisure is perhaps

the most important means for a person to perform authentic and personally meaningful activities, it is not the only context for meaningful activity to occur (Caldwell, 2005). In this view, the present paper adopts a comprehensive perspective and considers engagement in a wide range of activities during unemployment, whether the individual categorizes them as leisure or not. Throughout the text the term “leisure” is used whenever the cited authors do so.

Stebbins (1982, 2001) proposes that serious leisure (such as amateurism, hobbyist pursuits and volunteering) may serve as an alternative for people to express their abilities, fulfill their potential, and identify themselves as unique human beings out of paid employment. In Stebbins’ perspective, leisure may then be an effective unpaid substitute for work. In this line, several authors (e.g., Goodman, Geiger & Wolf, 2017; Havitz, Morden, & Samdahl, 2004; Leana & Feldman, 1990; Waters & Moore, 2002c) have indeed suggested that engagement in meaningful activities may constitute a psychologically healthy way for people to cope with unemployment.

Feather (1989), for example, conducted a study in Australia in which individuals were asked to indicate whether their involvement in each of 27 activities had increased, decreased or remained the same since the moment they became unemployed. The results show that subjective well-being (GHQ-12 and life satisfaction) was positively related to increases in activities oriented by structured goals (e.g., domestic work) and social contacts, but negatively correlated with increases in passive, less structured and aimless activities (e.g., sitting around at home, watching television, reading newspapers) and decreases in entertainment that involved financial costs. In a large sample of older British adults (aged between 50 and 74, $M_{age} = 60$ years, who were either retired, working full or part-time, or unemployed), Warr et al. (2004a) investigated the association between affective well-being and life satisfaction and the frequency with which individuals engaged in six types of activity (family and social; church and charity; home and garden; reflection and learning; music and drama; and sports). Warr et al. (2004a) found that retired individuals tended to be the most active and unemployed people the least active. After controlling for potential confounders variables (socio-demographic variables; household income; household financial position; self-rated health; and health limitations), overall activity level and the number of activities undertaken predicted both affective well-being and life satisfaction. Regarding specific activities, family/social and home/garden activities significantly predicted affective well-being, while family/social and church/charity activities significantly predicted life satisfaction. More recently, Kamerāde and Bennett (2015), using data of unemployed respondents from a large number of European countries, found a positive association between voluntary work and mental health (in countries with generous welfare benefits).

Perceived quality of the psychosocial environment and subjective well-being during unemployment in the light of the latent deprivation model and the vitamin model

The latent deprivation model (Jahoda, 1982) and the vitamin model (Warr, 1987) tend to dominate the literature on the psychosocial impact of unemployment. According to the latent deprivation model (Jahoda, 1982), individuals engage in employment primarily for the regular income or salary deriving from it (its obvious or manifest function, the deliberately intended consequence of earning a living), but through employment they also gain automatic access to five categories of experience that constitute its unintended or not purposefully planned by-products (the so-called latent functions/consequences of employment): «*First, employment imposes a time structure on the waking day; second, employment implies regularly shared experiences and contacts with people outside the nuclear family; third, employment links individuals to goals and purposes that transcend their own; fourth, employment defines aspects of personal status and identity; and finally, employment enforces activity*» (Jahoda, 1979, p. 312).

Jahoda (1982) argues that these categories of experience – so-called time structure, social contact, collective purpose, status/identity and enforced activity – correspond to psychological needs and assumes that by providing the means for individuals to fulfill those five enduring human needs, employment helps to sustain subjective well-being. Moreover, Jahoda claims that after job loss, it is the resulting deprivation of the latent benefits that is particularly harmful for psychological well-being. Jahoda's (1982) model has been investigated in a large number of studies on the psychological impact of unemployment (e.g., Creed & Bartrum, 2008; Paul, Geithner, & Moser, 2009; Selenko, Batinic, & Paul, 2011; Sousa-Ribeiro et al., 2014; Zechmann & Paul, 2019). These show that unemployed people generally perceive themselves as having less access to the categories of experience proposed by Jahoda to comprise the latent benefits/consequences of employment and as having less access to the manifest consequence of employment (i.e., they perceive less money to be available) than do their employed counterparts. Furthermore, lower perceived access to the latent and manifest consequences of employment is associated with worse psychological well-being.

In his vitamin model, Warr (1987) defines nine primary features – the environmental vitamins – that can characterize any setting or environment that are fundamental for well-being. These features are the opportunity for personal control, the opportunity for skills use, externally generated goals, variety, environmental clarity, the availability of money, the opportunity for interpersonal contact, a valued social position and physical security. Notwithstanding some overlap between Warr's (1987, 2007) vitamin model and Jahoda's (1982) latent deprivation model, the first seems to offer a more comprehensive approach to investigating the quality of the psychosocial environment, particularly in employment and unemployment contexts.

The vitamin model's feature externally generated goals integrate the latent deprivation model's time structure, collective purpose and enforced activity. The vitamin model's opportunity for social contact relates to the latent deprivation model's social contact while the vitamin model's valued social position is associated with the latent deprivation model's status concept. Furthermore, availability of money corresponds to the manifest function of employment in the latent deprivation model's Jahoda's perspective.

The vitamin model's general assumption that lower levels for each of the environmental vitamins are associated with poorer psychological well-being has found support in the literature. Research evidence, however, appears to be much more extensive for employment than for unemployment settings (for comprehensive reviews, see Warr, 1987, 2007). Furthermore, most studies on the vitamin model have investigated only one or a few vitamins simultaneously. One exception is Warr et al.'s (2004b) study that, in a combined sample of employed, unemployed, and retired individuals aged 50 to 74 years (controlling for a range of demographic and personal variables), found the nine environmental vitamins to account for an additional 19% of the variance in affective well-being and 39% of the variance in life satisfaction. Among the environmental vitamins, the opportunity for personal control, variety, environmental clarity, physical security and a valued social position predicted both affective well-being and life satisfaction; externally generated goals predicted only affective well-being; and availability of money and social support acted as predictors for only life satisfaction. Two environmental vitamins – opportunity for skills use and the quantity of social contact – were not able to predict variations in well-being. Taken together, perceived access to the latent benefits of employment theorized by Jahoda (1982) and the environmental “vitamins” proposed by Warr (1987) reflect the perceived quality of one's psychosocial environment in the present study.

Engagement in meaningful activities during unemployment and the perceived quality of the psychosocial environment

Jahoda (1982) states that although some non-employment activities such as voluntary work, studying or leisure can be a positive complement to employment and may provide access to some of its latent benefits, those activities cannot be considered complete functional alternatives to employment as they are less entrenched, regular, and controlled and lack its financial rewards. Jahoda (1979) also highlights the enormous psychological effort that is required for unemployed individuals to take the initiative to continuously impose a time structure, establish social contacts outside the family and have a sense of collective purpose. However, a number of studies have shown that meaningful activities might indeed provide an alternative avenue for individuals to get some access to the latent benefits of employment.

Indirect evidence comes, for example, from Caldwell's (2005) review on leisure and well-being (not specifically conducted in unemployment settings). Caldwell found that some of the

benefits of leisure included involvement in personally meaningful and/or intrinsically interesting activity; access to social support, friendship, and social acceptance; increased feelings of competence and self-efficacy; experiences of challenge provided by the leisure activity; increased feelings of self-determination and personal control; and finally, increased feelings of relaxation, disengagement from stress and distraction from negative life events. In the same line, and specifically referring to activity during unemployment, Underlid (1996) suggests: «*A high level of activity during unemployment may [a] counteract boredom; [b] help to keep mentally alert; [c] protect against fear and doubt and help to “forget” problems and difficulties; [d] initiate new activities and relationships; [e] soften the transition to unemployment; [f] maintain old skills; [g] give a feeling of accomplishment/mastery or achievement; [h] help normalise the unemployed in own/others’ eyes; [i] be structuring; involve purposeful and meaningful activities*» (p. 278).

The study by Rothländer and Richter (2012) supports Underlid’s (1986) arguments. The findings from their study suggest that engagement in volunteering during unemployment improved individuals’ perception of their personal situation (for 90% of the participants) and amount of social contacts, and promoted a realistic and better occupational perspective and more opportunities for personal development. The authors conclude that, despite not resolving the issue of unemployment, engagement in volunteering increases individuals’ level of activity and provides a sense of purpose and direction. In a qualitative study with British volunteers, Nichols and Ralston (2011) found that volunteering contributed to social inclusion by facilitating the access to latent benefits of employment. Finally, Nordenmark (1999) found that unemployed individuals in Sweden who found a way outside of paid employment to fulfill both psychosocial and economic needs reported lower levels of psychological distress than those individuals who felt economically and psychosocially deprived.

The mediational model

The findings presented in the sections above provide evidence for the links between (1) engagement in meaningful activities during unemployment and subjective well-being, (2) perceived quality of the psychosocial environment and subjective well-being; and (3) engagement in meaningful activities during unemployment and perceived quality of the psychosocial environment. The studies reviewed make it plausible to expect the first relationship to be at least partially mediated by the perceived quality of the psychosocial environment. Nevertheless, this mediational hypothesis seems to be understudied.

Waters and Moore (2002b) assessed the frequency with which unemployed ($n = 201$; $M_{\text{age}} = 32$ years) and full-time employed ($n = 128$; $M_{\text{age}} = 35$ years) Australian individuals engaged in social leisure activities (activities with friends) and solitary leisure activities (performed alone) and the degree of internal meaning (importance, satisfaction, goal achievement and interest) and external meaning (social nature and feedback from others)

derived from each activity. Applying structural equation modeling techniques to investigate the associations between leisure activities, deprivation of the latent benefits of employment and psychological well-being, the authors found that, among the unemployed participants, the global meaning attained through both social and solitary leisure activities was indirectly related to lower levels of psychological distress (depressive affect and self-esteem) through lower levels of perceived latent deprivation. In the employed group, only social activities had an impact on latent deprivation and mental health (Waters and Moore, 2002b). In the United States, Goodman et al. (2017) found that sense of purpose, structured routine, present orientation, effective organisation and persistence fully mediated the relationship between exercise or self-focused leisure activity and depressive symptoms and partially mediated the relationship between social recreational activities and depressive symptoms in a sample of 155 unemployed people. Read, Muller and Waters (2013), in turn, have found collective purpose to partially mediate the relationship between meaningful leisure activity and perceived quality of life in a sample of 123 retirees ($M_{age} = 80$ years).

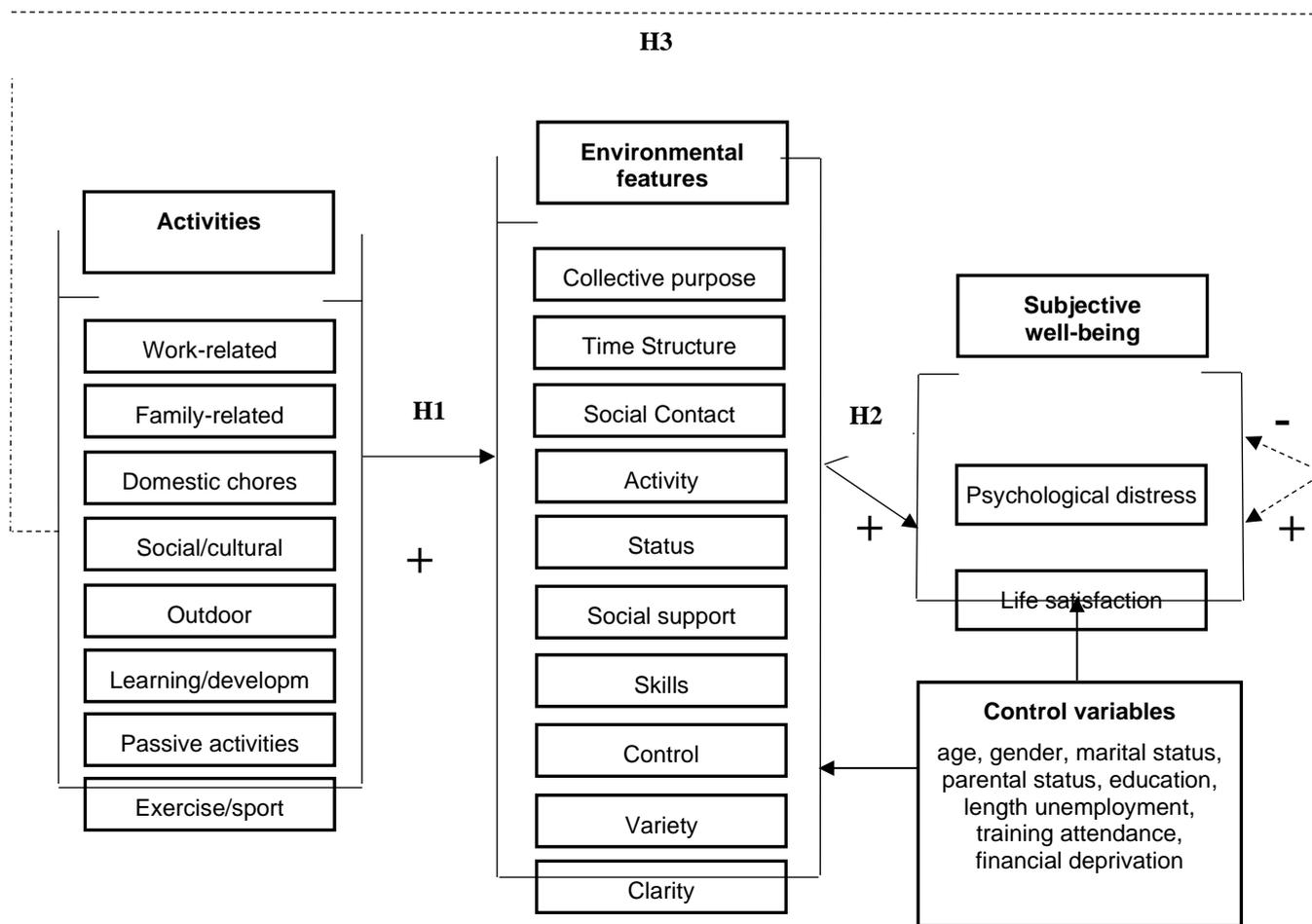


Figure 1. Parallel multiple mediator model with the hypothesized relationships.

Based on the existing research, we developed the following hypotheses (presented graphically in Figure 1):

(H1) There is a positive relationship between engagement in meaningful activities during unemployment and the perceived quality of the psychosocial environment (i.e., perceived access to certain latent benefits of employment and environmental vitamins).

(H2) There is (a) a negative relationship between the perceived quality of the psychosocial environment and psychological distress and (b) a positive relationship between the perceived quality of the psychosocial environment and life satisfaction.

(H3) (a) The negative relationship between engagement in meaningful activities during unemployment and psychological distress and (b) the positive relationship between engagement in meaningful activities during unemployment and life satisfaction are mediated by the perceived quality of the psychosocial environment.

Method

Participants and Procedure

This study has a cross-sectional design and is part of a larger research project on the psychosocial experience of unemployment among older Portuguese adults. Data were collected in the end of 2006 in the Porto metropolitan area. Unemployed participants in training programs completed the questionnaires on-site in two training centers belonging to the Instituto do Emprego e Formação Profissional (IEFP: *Institute of Employment and Vocational Training*) during visits previously arranged between the first author and the course coordinator, and six of the individuals who had been personally invited refused to participate in the study. Unemployed participants who were not participating in training at the time of the study were registered in one of the five job centers that took part in the study. They were invited to participate by the first author while attending regular information sessions at the job center and filled in the questionnaires on-site at the end of those sessions. Around 200 unemployed individuals aged 40 + had been invited to participate, 135 of whom filled out the questionnaire, which yielded an approximate response rate of 67%.

The total sample included 209 unemployed individuals aged 40 and older, of which 24 did not answer to the scale and were therefore excluded from this study. The final sample comprised 185 unemployed individuals, of which 73 were participating in a full-time vocational education and training program and 112 were not (see Table 1 for sample description). Preliminary analyses show that the two groups of unemployed participants differed significantly in terms of age, gender, marital and parental status, and education. All these variables are controlled for in the analyses.

Table 1. Characteristics of the sample.

	T	U	F/χ^2
Number of participants	73	112	
Age range	40 – 59	40 - 64	
Age (years) Mean (standard deviation)	46.4 (5.0)	53.3 (6.1)	64.20*
Gender (% woman)	77	55	18.58*
Education level (% 4 - 9 years)	56	71	4.01*
Marital status (% with partner)	63	74	4.70*
Parental status (% with dependents)	75	58	5.26*
Length of unemployment (months)	28.0	21.13	ns
Mean (standard deviation)	(26.3)	(14.53)	
Length of unemployment (range months)	1 - 110	1 - 72	
Length of unemployment (% ≥ 12 months)	74	71	ns

Note: T = Unemployed in training, U = Unemployed not in training; * $p < .05$.

Measures

Independent variables: Engagement in meaningful activities

The level of engagement in meaningful activities during unemployment was assessed with an index developed after consulting the *Meaningful Activities Questionnaire* (MLAQ; Waters & Moore, 1999). This measure comprises a list of 20 activities built on responses to an open-ended question included in a questionnaire distributed to a sample of unemployed individuals aged 40-64 years in a pilot study (first author, 2005, unpublished): “Please consider all activities you have performed during the last month, whatever their type. Which among those activities was the most meaningful to you?”. For the activities performed, participants were asked to indicate the frequency (1 = almost never to 4 = everyday) with which they have engaged in the activity, the personal importance of the activity (1 = none to 4 = great) and their personal satisfaction with the activity (1 = none to 4 = great). Activities not performed were scored “0” in all parameters. To calculate a “level of engagement” parameter for each of the 20 activities, first the personal importance and personal satisfaction of the activity were combined by calculating the mean to create a single parameter – “personal meaning” – scored with the same 4 scale-points as the other parameters. A single parameter was then created by calculating the mean of the frequency of performance for each of the 20 activities and the personal meaning attached to them. The square-root of this parameter was then calculated for each activity, creating a final parameter that was named “level of engagement.”

The 20 activities were subsequently grouped into eight categories according to their specific behavioral content, rather than on broader categorizations such as “active/passive” or “solitary/social,” following Warr et al.’s (2004a) suggestion. These categories were *work-related activities* (caregiving to family members or friends in need of assistance; doing some type of informal work; volunteering; activities related to civic participation), *family-related*

activities (socializing with family members; caregiving to children/grandchildren), *social and cultural activities* (socializing with friends; going to the café or other similar places; participating in sport, cultural or social groups; going to the cinema, theatre, museums), *domestic chores* (domestic activities; carrying out home repairs), *outdoor activities* (agriculture, fishing, gardening; going for a walk), *learning and development activities* (reading, writing, painting; studying; using the internet), *passive activities at home* (watching TV, listening to the radio/music), and *exercise/sport*. Somewhat similar categories were used for instance by Underlid (1996).

Dependent variables: Subjective well-being

Following Diener, Suh, Lucas and Smith's (1999) recommendation, the affective and cognitive components of subjective well-being were investigated separately in the present study. The affective aspect of well-being (operationalized in this study as psychological distress) was measured by the 12-item version of the General Health Questionnaire (GHQ-12; Goldberg, 1972), which is a short-term indicator of general mental health (and affectivity). This measure consists of items regarding self-esteem, anxiety, depression and cognitive processing and assesses the global affect component of "context-free" subjective well-being (Warr, 2007). Items are measured on a four-point scale from 0 to 3, with higher scores indicating more psychological distress. Items include, "*Have you recently felt able to enjoy your normal day-to-day activities?*" The reliability for this scale (Cronbach's alpha) was .91. The cognitive aspect of well-being, in turn, was assessed with an indicator of life satisfaction, in which the individual appraises their life in the long-term. Life satisfaction was assessed using the Portuguese adaptation (Neto, 1993) of the Satisfaction with Life Scale (SWLS; Diener, Emmons, Larsen, & Griffin, 1985). It is a five-item scale, and each item is scored on a seven-point Likert-type scale with higher scores indicating more life satisfaction. Items include, "*In most ways my life is close to my ideal.*" The reliability for this scale (Cronbach's alpha) was .82.

Mediating variables: Perceived quality of the psychosocial environment

The perceived quality of the psychosocial environment was captured using latent benefits of employment (Jahoda, 1982) and environmental vitamins (Warr, 1987, 2007).

Access to the latent benefits of employment was measured with five subscales (time structure, social contact, collective purpose, status and enforced activity) of the Latent and Manifest Benefits (LAMB) scales (Muller, Creed, Waters, & Machin, 2005). In the original version, each subscale contains six bipolar items measured on a seven-point response scale. An exploratory factor analysis showed a five-factor solution, and 24 items were retained (two items from the collective purpose scale, three items from the enforced activity scale and one item from the status scale were dropped due to low factor loading and/or cross-loadings).

There was the need to recode some items so that higher scores for each measure would indicate greater access to each feature. Sample items include the following (to simplify, only the positive poles are exemplified): *“There is rarely too much spare time in my day”* (time structure), *“I regularly engage in social activities with others”* (social contact), *“I often feel that I make a meaningful contribution to society”* (collective purpose), *“I am usually important to my friends”* (status) and *“I always catch up with the things I have to do”* (enforced activity). The reliability for these scales (Cronbach’s alphas) were .81, .78, .80, .67 and .80 for collective purpose (four items), time structure (six items), social contact (six items), enforced activity (three items) and status (five items), respectively.

Environmental vitamins were assessed using the same type of bipolar response scales as in the LAMB scales. *Social support* was measured with a modified version of the six-item Social Support Index (Abbey, Abramis, & Caplan, 1985), which assessed three elements of social support (affect, affirmation and aid). The items were used to assess the perception of the amount of support received from “someone from the [participant’s] personal network” and were transformed into five bipolar items. Items include, *“In the past few weeks at least one person from my personal network acted several times in ways that show that he/she appreciates what I do.”* The reliability for this scale (Cronbach’s alpha) was .73. A four-item bipolar scale was developed to assess opportunity for skills use. Items include, *“I have many chances to develop new skills these days.”* The reliability for this scale (Cronbach’s alpha) was .63. In line with Warr’s (1987) definitions of *opportunity for personal control*, *variety* and *environmental clarity*, a two-item bipolar index was developed for each of these vitamins. Items include, *“Most days, I can choose the way in which I do the things I have to do”* (opportunity for personal control); *“I often have the chance to experience changes in my environment”* (variety); and *“I have a clear idea about which path my life is taking”* (environmental clarity).

Control variables

We controlled for a number of socio-demographic characteristics – age, gender, marital status, parental status, education and length of unemployment – that may relate to engagement in meaningful activities, the perceived quality of the psychosocial environment, and subjective well-being. Participants were asked about their age (in years), gender (0 = man; 1 = woman), marital status (married/co-habiting, 0 = no; 1 = yes), parental status (financially dependent children, 0 = no; 1 = yes), education (0 = 4–10 years of education; 1 = ≥ 11 years of education), and length of unemployment (scored in months) in a socio-demographic questionnaire. Age was afterwards transformed into a categorical variable (0 = 40–54; 1 = 55+), as well as length of unemployment (0 = 0–11 months; 1 = 12–23 months; 2 = 24+ months). Training course attendance interferes with the amount of spare time an unemployed person has and was thus controlled for in this study. Participants were asked about their

training course attendance at the time of the study (0 = no; 1 = yes) in the questionnaire. There is considerable evidence in the literature that availability of money (the manifest benefit in the latent deprivation model) has significant implications for unemployed people's lifestyle and that financial strain is an obstacle for individuals to be more involved in meaningful (leisure) activities (e.g., Evans & Haworth, 1991; Feather, 1989; Gowan et al., 1999; Warr et al., 2004a). Therefore, availability of money was also statistically controlled for. This variable was assessed with the six-item bipolar "Financial Strain" subscale of the LAMB Scales (Muller et al., 2005). Items were recoded so that higher scores might indicate greater availability of money. A sample item is "My income usually allows me to do the things I want." The reliability for this scale (Cronbach's alpha) was .89.

Statistical analyses

Ordinary least squares path analyses were calculated using the SPSS macro PROCESS (model 4; Hayes, 2013). This statistical tool allows for multiple mediators and covariates and investigates both direct and indirect effects using a bootstrapping approach to obtain estimates of confidence intervals (CIs). This study used a 95% bias-corrected bootstrap to estimate confidence intervals and calculated 10,000 bootstrap samples. The independent variables were the eight categories of activities (work-related activities, family-related activities, social and cultural activities, domestic chores, outdoor activities, learning and development activities, passive activities at home, and exercise/sport) and the dependent variables were psychological distress and life satisfaction. The mediators were perceived access to the latent consequences of employment (collective purpose, time structure, social contact, activity and status) and environmental vitamins (social support, the opportunity for the use of skills, the opportunity for personal control, variety and environmental clarity). These variables were simultaneously included in the model as mediators in parallel – i.e., they were allowed to correlate but not causally influence another mediator in the model. As this macro only allows for one independent variable at a time, following Hayes' (2013) guidelines for models with more than one independent variable, one category of activity was included as an independent variable at a time, with all the others being included in the model as covariates. This procedure involved calculating eight models (one for each category of activity) for each well-being indicator. In all models, the potential influence of socio-demographics (age, gender, marital status, parental status, education and length of unemployment), training attendance and the availability of money was controlled for by including these variables as covariates.

Results

Table 2 presents descriptive statistics, reliability estimates and bivariate correlations (Cronbach’s alpha) for all study variables.

Table 2. *Bivariate correlations between socio-demographic variables, engagement in personally meaningful activities, latent benefits, vitamins and well-being (N=185).*

	M	SD	α	1	2	3	4	5	6	7	8	9	10	11	12	13	14	
Socio-demographics	1. Age	50.6	6.6	----														
	2. Gender (woman)	66	----	----	-.30*													
	3. Marital status (married/cohabiting)	69	----	----	.23*	-.27*												
	4. Parental status (financially dependent children)	67	----	----	-.11	-.01	.23*											
	5 Education 4-9 years of education)	64	----	----	-.15*	.13	-.20*	-.04										
	6. Length of unemployment (months)	24.6	20.4	----	-.01	.10	.00	.07	-.03									
Engagement in meaningful activities	7. Work-related	0.70	0.63	----	.02	-.06	-.00	.00	.07	-.08								
	8. Family-related	2.88	1.14	----	-.06	.00	.23*	.50*	-.05	.02	.03							
	9. Domestic chores	2.12	1.06	----	-.08	.02	-.01	.08	-.06	.10	.23*	.27*						
	10. Social/cultural activities	1.21	0.72	----	-.08	-.01	-.12	.02	.19*	-.10	.35*	.12	-.01					
	11. Outdoor activities	1.48	1.09	----	.20*	-.17*	.04	-.06	-.01	-.01	.18*	.08	.21*	.22*				
	12. Learning/development	1.26	0.98	----	-.22*	.11	-.20*	.10	.43*	.03	.26*	.09	.23*	.27*	.13			
	13. Passive at home	3.14	1.00	----	.00	.05	-.03	-.02	.01	-.05	-.03	.18*	.11	.11	.25*	.16*		
	14. Exercise/sport	1.30	1.59	----	.23*	-.06	.05	-.03	.19*	-.07	.24*	-.01	.05	.21*	.35*	.13	.14	
Latent consequences	15. Collective purpose	4.95	1.46	.81	.09	-.15*	-.03	-.03	-.19*	-.01	.26*	-.01	.06	.23*	.18*	-.01	-.01	.18*
	16. Time Structure	4.66	1.38	.78	-.20*	.28*	.01	.19*	.25*	.15*	.22*	.14	.17*	.01	.01	.37*	-.01	.16*
	17. Social Contact	4.46	1.42	.80	.14	-.15*	.03	-.05	.01	-.11	.32*	.02	-.03	.53*	.26*	.07	.15*	.24*
	18. Activity	5.46	1.25	.67	.12	-.03	.12	-.09	-.09	-.11	-.03	.01	-.01	.14	.18*	-.09	.07	.18*
Vitamins	19. Status	5.92	0.94	.79	-.02	.01	-.07	.00	-.01	-.05	.16*	.05	-.11	.31*	.15*	.06	.07	.18*
	20. Social support	5.39	1.23	.73	-.01	-.03	-.09	.06	.10	-.02	.21*	-.04	.00	.29*	.16*	.12	.02	.22*
	21. Skills	4.17	1.41	.63	.06	.04	-.06	-.05	.04	.02	.14	.01	.08	.14	.17*	.04	.01	.25*
	22. Control	4.94	1.34	----	.08	-.14	.00	-.01	.05	-.17*	.03	-.09	-.16*	.21*	.22*	.12	.09	.23*
Well-being	23. Variety	4.08	1.47	----	.02	.06	-.04	-.10	.14	-.03	.23*	-.06	.06	.25*	.22*	.22*	.13	.21*
	24. Clarity	4.67	1.37	----	.17*	-.03	-.00	.00	-.02	-.04	.16*	.00	-.02	.19*	.23*	-.02	-.02	.25*
Con-trols	25. Psychological distress	1.08	0.62	.91	.02	-.05	-.10	-.01	.01	-.00	-.05	-.03	-.05	-.16*	-.14*	-.05	-.07	-.20*
	26. Life satisfaction	3.62	1.37	.82	.11	-.07	.17*	.18*	-.08	-.01	.10	.16*	.07	.17*	.17*	-.09	.04	.26*
Con-trols	27. Availability money	2.84	1.52	.88	.05	.06	.14	.00	.18*	-.07	.06	.03	.04	.19*	.21*	.12	.02	.30*
	28. Training attendance	----	----	----	-.50*	.33*	-.14	.18*	.16*	.12	.01	.06	.06	.01	-.17*	.31*	.15*	-.06

(continues)

Table 2. (continued)

	16	17	18	19	20	21	22	23	24	25	26	27	28	29
Socio-demographics	1. Age (years)													
	2. Gender (woman)													
	3. Marital status (married/cohabiting)													
	4. Parental status (financially dependent children)													
	5 Education 4-9 years of education)													
	6. Length of unemployment (months)													
Engagement in meaningful activities	7. Work-related													
	8. Family-related													
	9. Domestic chores													
	10. Social/cultural activities													
	11. Outdoor activities													
	12. Learning /development													
	13. Passive at home													
	14. Exercise/sport													
	15. Overall level of activity													
Latent consequences	16. Collective purpose													
	17. Time Structure	.20*												
	18. Social Contact	.50*	-.02											
Vitamins	19. Activity	.33*	-.12	.36*										
	20. Status	.53*	.10	.48*	.40*									
	21. Social support	.26*	.26*	.35*	.16*	.28*								
	22. Skills	.47*	.39*	.25*	.22*	.22*	.31*							
	23. Control	.27+	-.09	.36*	.43*	.33*	.25*	.24*						
	24. Variety	.38*	.27*	.42*	.32*	.23*	.28*	.46*	.30*					
	25. Clarity	.50*	.07	.37*	.23*	.34*	.20*	.40*	.21*	.27*				
Well-being	26. Psychological distress	-.50*	-.22*	-.39*	-.36*	-.36*	-.16*	-.45*	-.25*	-.32*	-.34*			
	27. Life satisfaction	.36*	.09	.34*	.31*	.20*	.17*	.40*	.19*	.23*	.38*	-.31*		
Cont-rols	28. Availability money	.17*	.11	.24*	.24*	.02	.08	.33*	.10	.35*	.23*	-.29*	.37*	
	29. Training attendance	.00	.40*	-.10	-.14	.01	.13	.11	-.10	.16*	-.10	-.14	.01	.01

Note: ---- not applicable; * p<.05

Levels of engagement in meaningful activities

The activities with higher levels of engagement were *passive activities at home* (watching TV, listening to the radio/music), followed by *family-related activities* (socializing with family members, caregiving to children/grandchildren) and *domestic chores* (domestic activities, carrying out home repairs). *Learning and development activities* (reading, writing, painting; studying; using the internet), *social and cultural activities* (socializing with friends at home or outside the home; visiting a café or other similar places; participating in sport, cultural or social groups; going to the cinema, theatre, museums) and *work-related activities* (caregiving to family members or friends in need of assistance, doing some type of informal work, volunteering, activities related to civic participation) were the three categories of activities in which the participants were least engaged.

Table 3. Summary of the results¹ for the direct and indirect effects of the engagement in non-employment activities on well-being (*N* = 185).

		<i>B</i>	<i>SEB</i>	95% CI [LL; UL]
Significant <i>a</i> paths (activity → psychosocial features)²				
	Work-related → social contact	0.37	.16	[0.07; 0.68]
	Work-related → collective purpose	0.40	.18	[0.05; 0.76]
	Work-related → time structure	0.36	.15	[0.06; 0.66]
	Domestic chores → status	-0.15	.07	[-0.29; -0.01]
	Domestic chores → opportunity for personal control	-0.04	.03	[-0.12; -0.04]
	Social and cultural activities → status	0.32	.11	[0.11; 0.54]
	Social and cultural activities → social contact	0.88	.14	[0.61; 1.15]
	Social and cultural activities → collective purpose	0.33	.16	[0.01; 0.64]
	Social and cultural activities → social support	0.42	.14	[0.15; 0.70]
	Learning and development activities → time structure	0.27	.11	[0.06; 0.49]
Significant <i>b</i> paths (psychosocial features → well-being)³				
Distress	Social contact → psychological distress	-0.09	.04	[-0.17; -0.02]
	Collective purpose → psychological distress	-0.11	.04	[-0.19; -0.03]
	Opportunity for skills use → psychological distress	-0.10	.04	[-0.17; -0.02]
Life satisfaction	Opportunity for skills use → life satisfaction	.19	.08	[0.03; 0.36]
	Clarity → life satisfaction	.16	.08	[0.01; 0.31]
Direct effects (<i>c</i> paths) and specific indirect effects (<i>c'</i> paths) between engagement in meaningful activities and psychological distress⁴				
Psychological Distress	Direct effect of work-related activities	0.13	.07	[-0.01; 0.27]
	Specific indirect effects of work-related activities			
	Work-related activities → collective purpose → psychological distress	-0.04	.02	[-0.09; -0.01]
	Work-related activities → social contact → psychological distress	-0.04	.03	[-0.12; -0.01]
	Direct effect of social and cultural activities	0.02	.07	[-0.12; 0.15]
	Specific indirect effects of social and cultural activities			
	Social and cultural activities → collective purpose → psychological distress	-0.03	.02	[-0.10; -0.01]
Social and cultural activities → social contact → psychological distress	-0.08	.04	[-0.16; -0.02]	
Direct effects (<i>c</i> paths) and indirect effects (<i>c'</i> paths) between engagement in meaningful activities and life satisfaction				
(no significant direct or indirect effects were found)				

Note: ¹A complete description of results is available upon request to the first author; ^{2,3} Only significant paths are reported; ⁴ only activities with significant paths are shown; control variables in all models: age (0=40-54; 1= 55+), gender (male = 0; female = 1), marital status (married/cohabiting, 0 = no; 1 = yes), parental status (financially dependent children, 0 = no; 1 = yes), education (0 = 4–10 years of education; 1 = ≥ 11 years of education), length of unemployment (dummy variables, baseline 24+ months), training attendance (0= no; 1= yes) and availability of money; CI=confidence intervals; LL=lower level, UL=upper level.

Mediational model – Engagement in meaningful activities during unemployment, perceived quality of psychosocial environment and subjective well-being

A summary of the results regarding the mediational models are presented in Table 3. Considering the number of variables in the model and relationships tested, the table only shows the significant paths. A complete description of the results is provided upon request to the first author.

Engagement in meaningful activities during unemployment and the perceived quality of the psychosocial environment

In line with Hypothesis 1, this study found engagement in a number of activities to be significantly associated with perceived access to some environmental features. Specifically, work-related activities were positively associated with social contact ($B = .37$, $CI = [0.07; 0.68]$), collective purpose ($B = .40$, $CI = [0.05; 0.76]$) and time structure ($B = .36$, $CI = [0.06; 0.66]$); social and cultural activities were positively related to status ($B = .32$, $CI = [0.11; 0.54]$), social contact ($B = .88$, $CI = [0.61; 1.15]$), collective purpose ($B = .33$, $CI = [0.01; 0.64]$) and social support ($B = .42$, $CI = [0.15; 0.70]$); and learning and development activities were positively associated with time structure ($B = .27$, $CI = [0.06; 0.49]$). Contrary to what is postulated in Hypothesis 1, however, the greater the engagement in domestic chores, the poorer the perceived access to status ($B = -.15$, $CI = [-0.29; -0.01]$) and opportunity for personal control ($B = -.04$, $CI = [-0.12; -0.04]$). There were no significant associations between family-related activities, outdoor activities, passive activities or exercise/sport and any of the environmental features in the model.

Perceived quality of the psychosocial environment and subjective well-being

With respect to associations between the latent benefits of employment and subjective well-being, results showed negative associations with social contact ($B = -.09$, $CI = [-0.17; -0.02]$) and collective purpose ($B = -.11$, $CI = [-0.19; -0.03]$), whereas no significant associations were found between these features and life satisfaction. Contrary to Hypothesis 2, time structure, activity and status showed no significant associations with psychological distress or life satisfaction. Regarding the environmental vitamins, opportunity for skills use was negatively related to psychological distress ($B = -.10$, $CI = [-0.17; -0.02]$), while both opportunity for skills use ($B = .19$, $CI = [0.03; 0.36]$) and clarity ($B = .16$, $CI = [0.01; 0.31]$) evidenced positive associations with life satisfaction, providing partial support to Hypothesis 2. None of the other environmental vitamins included in this study (social support, control and variety) were significantly related to well-being.

Mediational model

Regarding *psychological distress*, the results did not show any significant direct relationships between engagement in any category of activity and this well-being indicator. In line with Hypothesis 3, an indirect relationship was found between engagement in work-related activities and in social/cultural activities and psychological distress, suggesting a mediated relationship. More specifically, there was an indirect negative relationship between work-related activities and psychological distress through collective purpose ($B = -.04$, $CI = [-0.09; -0.01]$) and social contact ($B = -.04$, $CI = [-0.12; -0.01]$), and between social and cultural activities and psychological distress through collective purpose ($B = -.03$, $CI = [-0.10; -0.01]$) and social contact ($B = .16$, $CI = [-0.16; -0.02]$). There were, however, no significant indirect associations between any of the other categories of activities (family-related, domestic chores, outdoor, learning/development, passive activities and exercise/sport), environmental features and psychological distress. In terms of *life satisfaction*, there were no direct or indirect effects of engagement in any of the eight categories of activities through the perceived access to latent benefits of employment or environmental vitamins.

Discussion

The aim of the present study was to contribute to a better understanding of the role that engagement in meaningful activities during unemployment may have in promoting well-being during unemployment. More specifically, this study investigated the relationship between engagement in eight categories of meaningful activities and well-being through the perceived quality of the psychosocial environment, in the light of two well-established theoretical frameworks in the unemployment literature: the latent deprivation model (Jahoda, 1982) and the vitamin model (Warr, 1987).

Whilst presenting employment as the only social institution that can combine all its latent consequences and the means of earning one's living, Jahoda (1982) acknowledges that some activities can function as a positive complement to employment and may provide access to one or more of its latent consequences. In line with what has been found in the literature (e.g., Evans & Haworth, 1991; Miles, 1983; Rothländer & Richter, 2012), this study's findings suggest that unemployed people may indeed gain access to some of the latent benefits of employment and environmental vitamins through engagement in certain activities.

Among the three categories of activities in which the participants of the present study were more engaged (i.e., passive activities at home, family-related activities and domestic chores), only domestic chores significantly predicted perceived access to some psychosocial features, and in a negative fashion – i.e., the greater the engagement in domestic chores, the lower the reported perception of status and opportunity for personal control. The negative

association between domestic chores and status and opportunity for personal control found in the present study appears to be in line with Araújo (2006) and Teixeira (2009), who – assuming the traditional family model and the related gender division of domestic work still prevalent in Portugal (e.g., Távora, 2012) – suggest that women’s return to the domestic and private sphere following job loss has the risk of increasing their own marginalization in the labor market. Some of the unemployed women interviewed in Teixeira’s (2009) study actually reported changes in the perception of their utility, as they felt domestic work was invisible to others and had neither (symbolic) recognition nor monetary compensation. Teixeira (2009) also found that domestic work did not replace the social contacts provided by employment. Women valued the availability of time to take care of their children, but on the other hand questioned their future, feared losing their autonomy and feared the subsequent increase of feelings of uselessness.

Social and cultural activities, learning and development activities and work-related activities were the three types of activities in which the participants were less engaged. These activities were precisely those that were significantly and positively associated with the perceived quality of the psychosocial environment, indicating that the greater the engagement in these three types of activities, the greater the perceived access to certain environmental features, namely social contact, collective purpose, time structure, status and social support. Engagement in family-related activities (socializing with family members; caregiving to children/grandchildren), passive activities at home (watching TV, listening to the radio/music), outdoor activities and exercise/sport were unrelated to the participants’ perceived quality of the psychosocial environment, suggesting that the non-employment activities in which unemployed people engage vary in the degree to which they provide access to latent benefits of employment and environmental “vitamins” and contribute to well-being.

Findings with respect to the associations between latent benefits of employment and environmental vitamins and subjective well-being only partially supported the latent deprivation model (Jahoda, 1982) and the vitamin model (Warr, 1987). While collective purpose and social contact were significantly negatively related to psychological distress, in line with what has been found in the literature (e.g., Zechmann & Paul, 2019), no significant associations were found between these features and life satisfaction, and none of the other latent benefits were related to subjective well-being. Among the “vitamins”, opportunity for skills use was only found to be related to psychological distress, and it was also significantly associated with life satisfaction. Environmental clarity also predicted this latter well-being indicator. These results suggest that when the latent deprivation model and the vitamin model are combined, the first may to a greater extent account for the prediction of psychological distress, whereas, in line with Warr et al.’s (2004) findings, the complementary features proposed in the vitamin model may be better predictors of life satisfaction (Sousa-Ribeiro et al., 2014).

The absence of significant associations between some of the environmental features and well-being may be discussed in the light of Warr's remarks (1987, 2007). Warr notes that environmental features may to a certain extent overlap and are not completely independent from each other. This study simultaneously investigated five latent benefits of employment and five environmental vitamins and it may well be that certain features combine together in an interactive way, modifying the impact of the others on well-being (Warr, 2007). As a result, the association between one variable and well-being may be removed and become non-significant by the inclusion of a second feature which itself remains significant (Warr, 2007). Furthermore, as discussed later in this section, the sample size may be insufficient to detect small effects sizes. Future research with larger samples could therefore explore additive and interactive patterns of associations between environmental features and their relation to subjective well-being (Warr, 2007).

The level of engagement in meaningful activities was not found to have direct effects on subjective well-being, but rather indirect or mediated effects. Results suggest an association between older unemployed people's engagement in meaningful activities (work-related activities and social and cultural activities) and psychological distress that was mediated by perceived access to certain psychosocial features, namely social contact and a greater perception of contributing to society and feeling integrated in the community (collective purpose). Nevertheless, no direct or indirect associations were found between engagement in meaningful activities and life satisfaction. This suggests that the associations between engagement in meaningful activities, perceived quality of the psychosocial environment and well-being are different for the affective aspect of subjective well-being (operationalized as psychological distress) and for the cognitive aspect of well-being (operationalized as life satisfaction). Engaging in meaningful activities during unemployment seems to have a greater effect on short-term affective changes in mental health than on appraisals of one's life in the long-term.

Little is known about the role that work-role centrality (or employment commitment) plays in the relationship between engagement in meaningful activities, perceived quality of the psychosocial environment and subjective well-being. It might well be that the mediational process is moderated by employment commitment in that the associations between engagement in personally meaningful activities during unemployment and the perceived quality of the psychosocial environment and between engagement in personally meaningful activities during unemployment and subjective well-being are weaker for higher levels of employment commitment. Future studies could investigate this hypothesis. Some indirect evidence comes from Nordenmark's (1999) study. In a sample of 3500 unemployed Swedish people, Nordenmark (1999) found that those individuals for whom engagement in meaningful activities (such as hobbies, housework, etc.) was associated with the perception of less psychosocial deprivation (i.e., higher access to the latent benefits of employment) reported

lower levels of employment commitment than those participants who perceived more psychosocial deprivation.

Limitations of the study

This study has a number of shortcomings that future research can overcome. The first limitation is its cross-sectional nature. This type of design does not allow for causal inferences from the results and limits the possibilities for refuting reverse-causation interpretations of the findings. Regarding, for example, the relationship between the perceived quality of the psychosocial environment and well-being, although it is plausible that environmental features have a causal influence on subjective well-being (Warr et al., 2004b), it is unclear if the inverse is also true; that is, it is unclear whether worse psychological health leads to perceptions of reduced access to the latent benefits of employment and environmental vitamins (e.g., Paul & Batinic, 2010). Furthermore, as suggested by Warr et al. (2004b), an individual's level of subjective well-being might have an impact on the environments the individual chooses to be in and the perceptions they have of such environments. There is likely such a reciprocal influence on the association between activity levels, environmental features and well-being (Warr et al., 2004b). Whilst the literature has provided considerable empirical support to the hypothesis that certain types of activity and overall activity levels are positively associated with well-being, one cannot discard the potential impact of overall activity levels on psychological well-being functioning in a reverse causal direction (Scanlan et al., 2011; Warr et al., 2004a; Underlid, 1996). For instance, individuals reporting better well-being tend to be more active. Kilpatrick and Trew (1985) propose the causal pattern to be a cyclical one. A longitudinal design, with each step of the mediational chain being assessed in consecutive time points, might help to solve this causal ambiguity.

Another potential limitation of this research derives from the exclusive reliance on self-reported data, which may bring common method variance into question (Podsakoff et al., 2003; Spector, 2006). Common method variance is the "variance [between two variables] that is attributable to the measurement method [e.g., questionnaires, scale format, response type] rather than to the constructs the measures represent" (Podsakoff et al., 2003, p. 879). Nonetheless, some procedural strategies were employed in the development of the questionnaires in an attempt to minimize the potential effects of common method variance. For example, items of different constructs (with the same type of response-scale) were intermeshed in the questionnaire, following Kline, Sulsky and Rever-Moriyam's (2000) suggestions. This technique may attenuate the recall of responses to previous items of the scale and the associated risk of influencing responses to current items, particularly in shorter scales (Harrison, McLaughlin, & Coalter, 1996). On the other hand, the use of self-reported data is well established in this type of research. For example, environmental features have mostly been measured through the individuals' perceptions of their access to each feature,

which has clear theoretical advantages over third-person ratings (Warr, 1987). Furthermore, the literature has consistently shown that self-reported data surpass a number of validation tests (Budría, 2012).

Data were collected back in 2006 and this may be considered a further limitation of the study. Nevertheless, it is highly plausible that the relationships between the variables observed in this study remain significant in the present. According to data from the Eurostat (EU Labour Force Survey yearly data, retrieved online), the unemployment rate in Portugal in 2018 (last data year available at this time) was at similar levels as in 2006 (7.1% and 7.8%, respectively). Furthermore, as shown in a meta-analysis on the psychological impact of unemployment (Paul & Moser, 2009), the year in which a study's data were collected had no influence on the effect size of the negative relationship between unemployment and mental health. However, the type of meaningful activities in which unemployed people engaged in at the time of the data collection might have changed to a certain extent. Future studies would therefore benefit from an update of the index of activities used in this study.

Additionally, the results should be interpreted with caution because their generalizability to the older unemployed population in general may be hampered by the use of a convenience sample. The small sample size put further limitations on the present study, such as insufficient power for the analyses to detect small effects sizes and the impossibility of carrying out other analyses such as structural equation modeling. Furthermore, it is important to examine the generalizability of some of the findings to younger samples. As suggested by Warr (2007), "confidence in interpretation becomes increased through the accumulation of similar studies in different settings" (p. 222). Future research could thus benefit from making use of nationally representative and larger samples. Future studies could also adopt a multi-method approach, supplementing quantitative findings with qualitative data. As argued by Jahoda in one of her conversations with David Fryer, "One just has more confidence in a finding if it is broadly confirmed through a variety of approaches to the same problem" (Fryer, 1986, p. 109).

Implications for practice

Despite the aforementioned limitations, the findings of the present study may have important implications both for practitioners working with the unemployed and for policy-making. A great number of older unemployed individuals may experience long unemployment spells, and therefore it is important that career guidance counselors working with unemployed individuals help them to gain a more holistic perspective of their career that surpasses paid employment, to view life in a wider sense, and to attribute value and meaning to personal achievements in domains other than work (Waters & Moore, 2002a). Career guidance counselors may encourage the unemployed person in exploring, identifying and investing their energy into meaningful activities (Waters & Muller, 2003) that may offer an alternative avenue

of access to certain psychosocial features in the absence of paid work filling this function. The study indeed identified some factors that may contribute to a better experience of the psychosocial environment for unemployed individuals.

First, the present results suggest an indirect negative association between engagement in social and cultural activities during unemployment and psychological distress through the perception of greater access to collective purpose and social contact. In line with this, peer support groups for the unemployed (outside the context of a job center) and similar groups may be extremely positive. Having the possibility to stay in contact with people in similar situations may diminish self-blame and personal failure feelings, facilitating emotional acceptance of the job loss (Eby & Buch, 1994) and feelings of contribution to others' well-being through providing social support. The enlargement of the unemployed people's social networks may also contribute for their activation and increase their reemployment prospects.

The present study also found work-related activities to have an indirect negative association with psychological distress through greater access to collective purpose and social contact. Caregiving is an example of such a work-related activity, although it carries with it the risk of excluding the unemployed caregiver permanently from the labor market. Recognizing and compensating the social and financial value of caregiving is a measure that could enhance the well-being of unemployed individuals who dedicate their time to helping others (usually parents or parents-in-law) in need of assistance. The development of an effective and structured national plan for senior volunteering (another work-related activity) could facilitate opportunities for unemployed people to find a sense of collective purpose and connection to society, to find a routine for their days or weeks, to extend their social contacts outside the family, and to use their current skills and acquire new ones. Results from the European Flash Eurobarometer 247, under the theme "Family life and the needs of an ageing population" (European Commission, 2008), show that 80% of the European people considered it very or fairly important to implement policy actions to encourage older people to get involved in senior volunteering (in Portugal this percentage was 94%). Examples of these actions are the facilitation of mobility (through an adequate and affordable public transport network) and the provision of volunteer centers. In fact, results from the European Flash Eurobarometer 269 under the theme "Intergenerational solidarity" (European Commission, 2009) show that 78% of European people strongly agreed or somewhat agreed with the statement, "[O]lder people would contribute much more to society if it was easier for them to move around" (p. 25; the percentage for Portugal was 93%). Moreover, 90% of European people strongly agreed or somewhat agreed with the statement, "[T]here should be public centers where older volunteers are helped to find opportunities for volunteering which match their skills and wishes" (p. 30; the percentage for Portugal was 95%). These considerations regarding the value and importance of promoting opportunities for volunteering may well also apply to younger unemployed people.

Leisure is an important life domain and therefore cost-free leisure facilities for unemployed people should also be provided. Indeed, financial losses resulting from job loss not only restrain engagement in new interests and leisure activities as a way to absorb the free time that results from job loss, but also limit the individual's ability to continue being active in leisure interests they pursued prior to unemployment (Glyptis, 1989). Providing cost-free opportunities for unemployed people to find important psychosocial features may activate and protect them to a certain extent against some of the negative psychosocial consequences of unemployment (e.g., Waters & Moore, 2002b).

The aforementioned measures may facilitate the experience of "good unemployment" (Warr, 1987, 2007) in that they can enhance the psychological well-being of unemployed people. The measures derive from recognition of the need for the social reconstruction of unemployment (Warr, 1987) given that unemployment rates are expected to remain high in the future, particularly for those who have weaker chances of getting a new job, such as older and less educated unemployed individuals. Nevertheless, this position is controversial, as recognizing the need to support unemployed people with measures such as those suggested above may be interpreted as an admission of failure in reducing the unemployment rate itself (Warr, 1987) and a stimulus for the unemployed to "live 'comfortable enough' on benefits" (Fryer, 1992, p. 119). However, there is no reason that fighting unemployment would be incompatible with measures aimed at turning it into a less psychologically harmful experience.

Concluding remarks

Paid work offers the most direct avenue to "access to the power structure and to greater equality in opportunities" (Blustein, 2006, p. 26), and non-employment activities have a limited capacity to completely replace employment due to the vital financial role that paid work plays in individuals' lives (e.g., Jackson, Arnold, Nicholson, & Watts, 1996). Research on the type of associations between engagement in meaningful activities during unemployment, perceived quality of the psychosocial environment and subjective well-being during unemployment may contribute to find functional alternative activities outside employment that may protect unemployed people's psychological well-being. This is timely and important, particularly among older unemployed people, who in general have more difficulties becoming reemployed after job loss. However, this remains understudied in the literature. The present study therefore aimed at investigating the extent to which engagement in meaningful activities by older unemployed people contributed to their well-being and which processes may underlie this association. The study investigated a mediational model which proposes a positive relationship between engagement in meaningful activities during unemployment and subjective well-being that is mediated by the perceived quality of the psychosocial environment – operationalized as the perceived access to the latent benefits of employment

and the environmental “vitamins” included, respectively, in the latent deprivation model (Jahoda, 1982) and the vitamin model (Warr, 1987, 2007).

The results from the present study partially support the mediational hypotheses and suggest that engagement in meaningful activities during unemployment can in part contribute for subjective well-being during unemployment. Specifically, this study found that engagement in work-related activities (such as volunteering or caregiving to family members or friends in need of assistance) and social and cultural activities (such as socializing with friends and participating in sport, cultural or social groups) during unemployment was associated with subjective well-being through the perception of greater social contacts and the perception of greater contribution to society and integration in the community. Facilitating access to peer-support groups, volunteer opportunities and leisure facilities for unemployed people, and recognizing and financially compensating caregiving provided to family members in need of assistance, among other measures, could therefore contribute to turning unemployment into a less psychologically harmful experience.

Acknowledgements

This study is part of a larger research project that was partially supported by the Fundação para a Ciência e Tecnologia/MES.

References

- Abbey, A., Abramis, D. J., & Caplan, R. D. (1985). Effects of different sources of social support and social conflict on emotional well-being. *Basic and Applied Social Psychology*, 6, 111-129. https://doi.org/10.1207/s15324834basp0602_2
- Andersen, S. H. (2009). Unemployment and subjective well-being: A question of class? *Work and Occupations*, 36, 3-25. <https://doi.org/10.1177/0730888408327131>
- Araújo, P. (2006). Desemprego de meia-idade e mediadores de compensação: O estado social como último reduto. *Centro de Estudos Sociais, Oficina do CES n.º 260*.
- Blustein, D.L. (2006). *The psychology of working: A new perspective for counseling, career development, and public policy*. New York: Routledge.
- Budría, S. (2012). The shadow value of employer-provided training. *Journal of Economic Psychology* 33, 494–514. <https://doi.org/10.1016/j.joep.2012.01.001>
- Caldwell, D. F. (2005). Leisure and health: Why is leisure therapeutic? *British Journal of Guidance and Counselling*, 33, 7-26. <https://doi.org/10.1080/03069880412331335939>
- Centeno, L.G. (Coord.) (2000). *Os trabalhadores de meia-idade face às reestruturações e políticas de gestão de recursos humanos*. Lisboa: Observatório do Emprego e Formação Profissional. Coleção “Estudos e Análises”, No. 30.
- Creed, P. A., & Bartrum, D. (2008). Personal control as a mediator and moderator between life strains and psychological well-being in the unemployed. *Journal of Applied Social Psychology*, 38, 460–481. <https://doi.org/10.1111/j.1559-1816.2007.00313.x>
- Diener, E., Emmons, R., Larsen, R., & Griffin, S. (1985). The Satisfaction with Life Scale. *Journal of Personality Assessment* 49, 71-75. https://doi.org/10.1207/s15327752_jpa4901_13
- Diener, E., Suh, E. M., Lucas, R. E., & Smith, H. L. (1999). Subjective Well-Being: Three decades of progress. *Psychological Bulletin*, 125, 276-302. <https://doi.org/10.1037/0033-2909.125.2.276>
- Eby, L., & Buch, K. (1994). The effect of job search method, sex, activity level and emotional acceptance on new job characteristics: Implications for counseling unemployed professionals. *Journal of Employment Counseling*, 31, 69-82. <https://doi.org/10.1002/j.2161-1920.1994.tb00416.x>
- European Commission (2008). *Flash Eurobarometer 247: Family life and the needs of an ageing population. Analytical report*. Available at: http://ec.europa.eu/public_opinion/flash/fl_247_en.pdf (retrieved 10 June 2012).
- European Commission (2009). *Intergenerational solidarity: Analytical report. Flash Eurobarometer 269*. Available at: http://ec.europa.eu/public_opinion/flash/fl_269_en.pdf (retrieved 10 June 2012).
- Evans, S. T., & Haworth, J. T. (1991). Variations in personal activity, access to categories of experience and psychological well-being in unemployed young adults. *Leisure Studies*, 10, 249- 264. <https://doi.org/10.1080/02614369100390231>
- Feather, N.T. (1989). Reported changes in behavior after job loss in a sample of older unemployed men. *Australian Journal of Psychology*, 41, 175-185.
- Fryer, D. (1986). The social psychology of the invisible: An interview with Marie Jahoda. *New ideas in Psychology*, 4, 107-118. [https://doi.org/10.1016/0732-118X\(86\)90063-2](https://doi.org/10.1016/0732-118X(86)90063-2)
- Fryer, D. (1992). Psychological or material deprivation: Why does unemployment have mental health consequences? In E. McLaughlin (Ed.), *Understanding unemployment* (pp. 103-125). London: Routledge.
- Fryer, D., & Payne, R. (1984). Proactive behaviour in unemployment: Findings and implications. *Leisure Studies*, 3, 273-295. <https://doi.org/10.1080/02614368400390231>
- Glyptis, S. (1989). *Leisure and unemployment*. Milton Keynes, Philadelphia: Open University Press.
- Goldberg, D. (1972). *The detection of psychiatric illness by questionnaire*. London: Oxford University Press.
- Goodman, W.K., Geiger, A.M., & Wolf, J.M. (2017). Leisure activities are linked to mental health benefits by providing time structure: comparing employed, unemployed and homemakers. *Journal of Epidemiology and Community Health*, 71, 4–11. doi:10.1136/jech-2016-207260
- Gowan, M., Riordan, C., & Gatewood, R. (1999). Test of a model of coping with involuntary job loss following a company closing. *Journal of Applied Psychology*, 84, 75-86. <http://dx.doi.org/10.1037/0021-9010.84.1.75>

- Hanisch, K. (1999). Job loss and unemployment research from 1994 to 1998: A review and recommendations for research and intervention. *Journal of Vocational Behaviour*, 55, 188-220. <https://doi.org/10.1006/jvbe.1999.1722>
- Harrison, D. A., McLaughlin, M. E., & Coalter, T. M. (1996). Context, cognition, and common method variance: Psychometric and verbal protocol evidence. *Organisational Behavior and Human Decision Processes*, 68, 246–261. <https://doi.org/10.1006/obhd.1996.0103>
- Havitz, M. E., Morden, P. A., & Samdahl, D. M. (2004). *Diverse worlds of unemployed adults: Consequences of leisure, lifestyles and well-being*. Waterloo, Ontario, Canada: Wilfrid Laurier University Press.
- Hayes, A. F. (2013). *Introduction to mediation, moderation, and conditional process analysis*. New York: The Guilford Press.
- Jackson, C., Arnold, J., Nicholson, N., & Watts, A. (1996). *Managing careers in 2000 and beyond*. Brighton: Institute for Employment Studies.
- Jahoda, M. (1979). The psychological meanings of unemployment. *New Society*, 6, September 492-495.
- Jahoda, M. (1982). *Employment and unemployment: A socio-psychological analysis*. Cambridge University Press.
- Kameråde, D., & Bennett, M. (2015) *Unemployment, volunteering, subjective well-being and mental health*. TSI Working Paper Series No. 8. Seventh Framework Programme (grant agreement 613034), European Union. Brussels: Third Sector Impact. Available at: https://thirdsectorimpact.eu/site/assets/uploads/documentations/tsi-working-paper-no-7-unemployment-volunteering-subjective-well-being-and-mental-health/TSI_WP8_Unemployment-Volunteering.pdf (retrieved 10 May 2017).
- Kilpatrick, R., & Trew, K. (1985). Life styles and psychological well-being among unemployed men in Northern Ireland. *Journal of Occupational Psychology*, 58, 207-216. DOI: 10.1111/j.2044-8325.1985.tb00196.x
- Klehe, U.C., De Pater, I.E., Koen, J., & Kira, M. (2017, August). Too old to tango? Job loss and job search among older workers. In U.C. Klehe & van Hooft, E. (Eds.), *The Oxford Handbook of Job Loss and Job Search*. Online publication. DOI: 10.1093/oxfordhb/9780199764921.013.35
- Kline, T. J. B., Sulsky, L. M., & Rever-Moriyama, S. D. (2000). Common method variance and specification errors: A practical approach to detection. *The Journal of Psychology*, 134, 401–421. <https://doi.org/10.1080/00223980009598225>
- Leana, C., & Feldman, D. (1990). Individual responses to job loss: Empirical findings from two field studies. *Human Relations*, 43, 1155-1181. <https://doi.org/10.1177/001872679004301107>
- Luhmann, M., Hofmann, W., Eid, M., & Lucas, R. E. (2012). Subjective well-being and adaptation to life events: A meta-analysis. *Journal of Personality and Social Psychology*, 3, 592-616. <https://doi.org/10.1037/a0025948>
- McKee-Ryan, F., Song, Z., Wanberg, C., & Kinicki, A. (2005). Psychological well-being during unemployment: A meta-analytic study. *Journal of Applied Psychology*, 90, 53-76. <https://doi.org/10.1037/0021-9010.90.1.53>
- Miles, I. (1983). *Adaptation to unemployment*. Science Policy Research Unit. Brighton: University of Sussex.
- Muller, J., Creed, P.A., Waters, L., & Machin, M. (2005). The development and preliminary testing of a scale to measure the latent and manifest benefits of employment. *European Journal of Psychological Assessment*, 21, 191-198. <https://doi.org/10.1027/1015-5759.21.3.191>
- Neto, F. (1993). The Satisfaction with Life Scale: Psychometrics properties in an adolescent sample. *Journal of Youth and Adolescence*, 22, 125-134.
- Nichols, G., & Ralston, R. (2011). Social Inclusion through Volunteering: The legacy potential of the 2012 Olympic Games. *Sociology – the Journal of the British Sociological Association*, 45, 900-914. <https://doi.org/10.1177/0038038511413413>
- Nordenmark, M. (1999). Employment commitment and psychological well-being among unemployed men and women. *Acta Sociologica*, 42, 135-146. <https://doi.org/10.1177/000169939904200203>
- Paul, K., & Batinic, B. (2010). The need for work: Jahoda's latent functions of employment in a representative sample of the German population. *Journal of Organisational Behavior*, 31, 45–64. <https://doi.org/10.1002/job.622>
- Paul, K.I., Hassel, A., & Moser, K. (2014, August). Individual consequences of job loss and unemployment. In U.C. Klehe & van Hooft, E. (Eds.), *The Oxford Handbook of Job Loss and Job Search*. Online publication. DOI: 10.1093/oxfordhb/9780199764921.013.028

- Paul, K.I., & Moser, K. (2009). Unemployment impairs mental health: Meta-analyses. *Journal of Vocational Behavior, 74*, 264–282. <https://doi.org/10.1016/j.jvb.2009.01.001>
- Paul, K.I., Geithner, E., & Moser, K. (2009). Latent deprivation among people who are employed, unemployed, or out of the labor force. *The Journal of Psychology, 143*, 477–491. <https://doi.org/10.3200/JRL.143.5.477-491>
- Podsakoff, P. M., MacKenzie, S.B., Lee, J. Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology, 88*, 879–903. DOI: 10.1037/0021-9010.88.5.879
- Read, J. M., Muller, J. J., & Waters, L. (2013). The importance of latent benefits and meaningful leisure activity in predicting quality of life in Australian retirees. *Australian Journal of Career Development, 22*, 63–71. <https://doi.org/10.1177/1038416213486773>
- Rothländer, K., & Richter, P. (2012). Social support and organisational integration of long-term unemployed in the volunteering sector. In T. Kieselbach, & S. Mannila (Eds.), *Precarious work and persistent unemployment: Research and policy issues* (pp.447-457). Wiesbaden: VS Verlag.
- Scanlan, J. N., Bundy, A. C., & Matthews, L. R. (2011). Health and meaningfulness of time use for unemployed individuals: associations with involvement in education. *Leisure Studies, 30*, 21-31. <https://doi.org/10.1080/02614367.2010.506646>
- Selenko, E., Batinic, B., & Paul, K. (2011). Does latent deprivation lead to psychological distress? Investigating Jahoda's model in a four-wave study. *Journal of Occupational and Organisational Psychology, 84*, 723-740. <https://doi.org/10.1348/096317910X519360>
- Sousa-Ribeiro, M., Sverke, M., & Coimbra, J. L. (2014). Perceived quality of the psychosocial environment and well-being in employed and unemployed older adults: The importance of latent benefits and environmental vitamins. *Economic and Industrial Democracy, 35*, 629-652. <https://doi.org/10.1177/0143831X13491840>
- Spector, P. E. (2006). Method variance in organisational research: Truth or urban legend? *Organisational Research Methods, 9*, 221-232. <https://doi.org/10.1177/1094428105284955>
- Stebbins, R. A. (1982). Serious leisure: A conceptual statement. *The Pacific Sociological Review, 25*, 251-272. <https://doi.org/10.2307/1388726>
- Stebbins, R. A. (2001). Serious leisure. *Society, May / June 2001*, 53-57.
- Távora, I. (2012). Understanding the high rates of employment among low educated women in Portugal: A comparatively oriented case study. *Gender, Work and Organisation, 19*, 93-118. <https://doi.org/10.1111/j.1468-0432.2010.00489.x>
- Teixeira, A. I. (2009). *Quando desemprego se escreve no feminino: Estudo de caso em Vila Nova de Gaia*. Dissertação apresentada ao programa de Mestrado em Sociologia, As Sociedades Nacionais Perante os Processos de Globalização, para a obtenção do grau de Mestre em Sociologia do Desenvolvimento e da Transformação Social. Faculdade de Economia da Universidade de Coimbra.
- Underlid, K. (1996). Activity during unemployment and mental health. *Scandinavian Journal of Psychology, 37*, 269-281. <https://doi.org/10.1111/j.1467-9450.1996.tb00659.x>
- Warr, P. (1987). *Work, unemployment and mental health*. Oxford: Clarendon Press.
- Warr, P. (2007). *Work, happiness and unhappiness*. New York: Lawrence Erlbaum Associates.
- Warr, P., Butcher, V., & Robertson, I. (2004a). Activity and psychological well-being in older people. *Aging & Mental Health, 8*, 172–183. <https://doi.org/10.1080/13607860410001649662>
- Warr, P., Butcher, V., Robertson, I., & Callinan, M. (2004b). Older people's well-being as a function of employment, retirement, environmental characteristics and role preference. *British Journal of Psychology, 95*, 297-324. <https://doi.org/10.1348/0007126041528095>
- Waters, L., & Moore, K. (1999). *Measuring the subjective meaning of leisure activities*. Unpublished manuscript.
- Waters, L., & Moore, K. (2002a). Predicting self-esteem during unemployment: The effect of gender, financial deprivation, alternate roles and social support. *Journal of Employment Counselling, 39*, 171-189. <https://doi.org/10.1002/j.2161-1920.2002.tb00848.x>
- Waters, L., & Moore, K. (2002b). Reducing latent deprivation during unemployment: The role of meaningful leisure activity. *Journal of Occupational and Organisational Psychology, 75*, 15-32. <https://doi.org/10.1348/096317902167621>

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- Waters, L., & Moore, K. (2002c). Self-esteem, appraisal and coping: A comparison of unemployed and re-employed people. *Journal of Organisational Behavior*, 23, 593–604. <https://doi.org/10.1002/job.156>
- Waters, L., & Muller, J. (2003). Money or time? Comparing the effects of time structure and financial deprivation on the psychological distress of unemployed adults. *Australian Journal of Psychology*, 55, 166-175. <https://doi.org/10.1080/0004953042000298632>
- Zechmann, A., & Paul, K. I. (2019, April 4). Why Do Individuals Suffer During Unemployment? Analyzing the Role of Deprived Psychological Needs in a Six-Wave Longitudinal Study. *Journal of Occupational Health Psychology*. Advance online publication. <http://dx.doi.org/10.1037/ocp0000154>

Envolvimento em atividades significativas durante o desemprego e bem-estar subjetivo: Contribuições de um estudo Português

Resumo

Num mercado de trabalho caracterizado por instabilidade e imprevisibilidade, os trabalhadores mais velhos parecem estar numa situação particularmente desfavorável. De facto, a idade é o atributo individual que mais influencia a duração do desemprego e, para muitos trabalhadores mais velhos, a perda de emprego tem como consequência a sua exclusão permanente do mercado de trabalho. Apesar disso, os desempregados seniores parecem ser uma população pouco investigada. Por outro lado, o desemprego tem sido consistentemente associado na literatura a uma redução dos níveis de bem-estar, e alguns estudos demonstram que o envolvimento em atividades pessoalmente significativas é um determinante importante do bem-estar durante o desemprego. No entanto, estudos sobre os mecanismos psicológicos subjacentes a esta relação positiva entre níveis de atividade significativa durante o desemprego e bem-estar parecem ser relativamente escassos. Este estudo pretende investigar em que medida o envolvimento em atividades significativas por desempregados mais velhos está associado com o bem-estar e se esta associação é mediada pela qualidade percebida do seu contexto psicossocial – operacionalizada no acesso percebido aos benefícios latentes do emprego e a “vitaminas” do contexto, propostos, respetivamente, pelo “modelo de privação latente” e no “modelo vitamina”. A amostra é constituída por 185 indivíduos portugueses desempregados com idade igual ou superior a 40 anos que preencheram questionários de autorrelato em centros de emprego ou formação profissional localizados na área metropolitana do Porto. O modelo de mediação foi investigado através da análise de trajetórias pelo método dos Mínimos Quadrados Ordinários. Os resultados mostram que as atividades nas quais os participantes mais se envolvem são atividades passivas realizadas em casa, atividades relacionadas com a família e tarefas domésticas. Além disso, o envolvimento em determinadas atividades – atividades sociais e do tipo cultural e atividades que estão relacionadas com trabalho – durante a situação de desemprego parece ser benéfico para o bem-estar, através da perceção de um maior contacto social e de um sentimento de pertença à comunidade e contribuição para a sociedade. Os resultados deste estudo podem ser aproveitados no desenho de políticas e intervenções que visem contribuir para que o desemprego constitua uma experiência menos negativa ao nível psicológico.

Palavras-Chave

Desemprego, atividades significativas, modelo de privação latente, modelo vitamina, bem-estar.

Received: 13.12.2016

Revision received: 27.11.2019

Accepted: 29.11.2019