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# Sweets for my sweet: The impact of partner unemployment on individual physical health\*

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## Abstract

This paper investigates the effect of partner unemployment on individual physical health. Using data from two nationally representative Italian surveys of households and employing partial identification to address endogenous selection into unemployment, we show that the impact of partner unemployment on individual physical health is related to the role of the unemployed within the household. We document a null effect when the spouse is unemployed, whereas we find a negative health effect when the household head is unemployed. The negative effect of household head unemployment may be explained by a larger budget constraint and a consequent change in the dietary habits involving all household members. In particular, we highlight a decline in the quality of food consumption in the household when the household head is unemployed.

**Keywords:** Unemployment; dietary habits; consumption; food quality; body mass index.

**JEL Classification:** D12, I10, J12, J60

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# 1 Introduction

Employment is a crucial part of individuals' lives. When individuals become unemployed, they face both economic and non-economic costs. The former arise because unemployment reduces prospective earnings, (re-)employment probability, and reservation wages (Arulampalam, 2001; Chan and Stevens, 2001; Jacobson et al., 1993). The latter occur because it may erase a series of latent benefits such as social identity, time structure, and collective purpose, that are deemed important to individuals' well-being (Jahoda, 1982; Janlert and Hammarström, 2009). Among the non-economic costs of unemployment, a large branch of the literature also focuses on the effects on both physical and mental health conditions (Linn et al., 1985; Jin et al., 1997; Murphy and Athanasou, 1999; Schmitz, 2011; Stauder, 2019), as well as on mortality (Gerdtham and Johannesson, 2003).

An important question related to unemployment is if it generates consequences that extend beyond the laid-off workers (Picchio and Ubaldi, 2024). From a theoretical standpoint, household members may suffer from unemployment because it reduces the economic resources of the family and increases stress within the household (Jacobson et al., 1993; Eliason, 2012; Mörk et al., 2020). However, unemployment may also provide positive externalities as laid-off workers can devote additional time to activities such as home caring, household chores, caring for others and meals preparation (Gimenez-Nadal and Molina, 2014; Hoang and Knabe, 2021; Krueger and Mueller, 2012a,b).

Only a limited number of studies tried to address the impact of unemployment on the health outcomes of other members of the family unit. These studies show that unemployment reduces the psychological well-being of relatives (Marcus, 2013; Mendolia, 2014; Nikolova and Ayhan, 2019; Nikolova and Nikolaev, 2021; Powdthavee and Vernoit, 2013; Winkelmann and Winkelmann, 1995) and increases the likelihood of engaging in risky behaviors such as tobacco and alcohol consumption (Everding and Marcus, 2020; Ubaldi and Picchio, 2025).

In this paper, we study the spillover effects of unemployment by investigating the association between partner unemployment and the physical health of individuals. We focus on this domain of health because the occurrence of unemployment typically entails a tighter budget constraint for families that may lead to a change in consumption patterns of the household thus affecting physical well-being (Grossman, 1972, 2003).

Using data from two nationally representative surveys of households in Italy, namely

Aspects of Daily Life (AVQ) and Household Budget Survey (HBS), we look at the effect of unemployment in married and cohabiting couples. Our identification strategy relies on standard parametric estimation that account for within-region correlation. Because selection into unemployment may be endogenous due to omitted variables bias ([Brand, 2015](#); [Kassenboehmer and Haiken-DeNew, 2009](#); [Suppa, 2021](#)), we complement our analysis by implementing a partial identification approach proposed by [Oster \(2019\)](#) that allows us to quantify the amount of selection on unobservables, relative to selection on observables, needed to explain away the effect of unemployment.

We show that the impact of partner unemployment on individual physical health is related to the role of the unemployed within the household. On the one hand, we document a null effect when the spouse is unemployed. On the other hand, we find a negative health effect when the household head is unemployed. In our data, the unemployment of the household head is associated with an increase of almost 6 percentage points in the probability of the partner reporting to be overweight or obese. We argue that this effect may be explained by a change in the consumption habits of the household. We explore several mechanisms through which consumption change may occur documenting that unemployment is associated with a constant level of consumption of food items but that this consumption is of a lower quality. We also find that household expenditure for food is smaller in families with unemployed household heads. Finally, we show that our results are robust to endogenous selection into unemployment and to a series of sensitivity checks. Given that Italy is among the countries with the healthiest dietary habits worldwide ([Afshin et al., 2019](#); [Monasta et al., 2019](#)), and also features relatively low prices for healthy foods such as fruit and vegetables ([Pieroni et al., 2013](#); [OECD, 2021](#); [Minotti et al., 2022](#)), we interpret our results as a lower bound of the health effects of unemployment for other developed countries.

Our study speaks to two major lines of research. First, we add to the literature investigating the health effects of unemployment. Several studies document that unemployment exerts a detrimental impact on various aspects of the individuals' life, such as mental health ([Drydakis, 2015](#); [Farré et al., 2018](#); [Schaller and Stevens, 2015](#)), life satisfaction ([Kassenboehmer and Haiken-DeNew, 2009](#); [Winkelmann and Winkelmann, 1998](#)), social networks ([Kunze and Suppa, 2017](#); [Peterie et al., 2019](#)), smoking behavior ([Marcus, 2014](#); [Schunck and Rogge, 2010](#)), alcohol consumption and illicit drug use ([Carpenter](#)

et al., 2017; Dee, 2001; Mossakowski, 2008). Our work extends this line of research by delving into another domain of health that received very little attention if not from few studies (Deb et al., 2011; Jónsdóttir and Ásgeirsdóttir, 2014; Stauder, 2019), that is physical health. Second, we contribute to the discussion of the intrahousehold effects of major life stressors. Previous empirical research shows that the occurrence of this type of events, such as cardiovascular diseases, cancer diagnoses and death of one member of the household is associated with a strong negative health effect for the rest of the family (Böckerman et al., 2025; Kristiansen, 2021; Tseng et al., 2017, 2018). Given the amount of stress that unemployment may generate, it also qualifies as major life stressor. However, the branch of literature that studies the spillover effects of unemployment typically focuses on aspects different from physical health. Our study contributes to this line of research by exploring the association between partner unemployment and the physical health of the relevant other in the couple. Most importantly, we investigate possible mechanisms for why physical health may be affected by unemployment, something that is typically ignored in studies of physical well-being.

This article is organized as follows. Section 2 presents the datasets and variables used. Section 3 illustrates the empirical strategy, while Section 4 shows the main findings. Section 5 concludes.

## 2 Data and variables

To conduct our analysis, we use Italian data from two nationally representative surveys of households sourced by the Italian National Institute of Statistics (ISTAT).

Our main data source is represented by the Aspects of Daily Life (AVQ) survey. It is a repeated cross-sectional survey of Italian families that is part of the integrated system of social surveys named Multipurpose Survey on Families. The survey is carried out annually and collects information on approximately 20,000 households per wave. It covers different topics such as household composition, education, labor conditions, health status, and daily activities. The design of the sampling method is such that the sample is representative of the Italian population.<sup>1</sup>

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<sup>1</sup>For details, visit the following link: <https://www.istat.it/en/microdata/aspects-of-daily-life> (last access July 8, 2025).

We complement the main analysis based on AVQ data using information from the Household Budget Survey (HBS) about the quality of household consumption. The HBS survey monitors the consumption expenditure behavior of families residing in Italy by means of self-reported diaries and standard face-to-face questions-and-answer sessions on a monthly basis.<sup>2</sup> The target population and sampling method of HBS are similar to those of AVQ, therefore the two surveys are broadly comparable.<sup>3</sup>

We create a list of outcome variables to proxy the physical health status of the individuals and household consumption behaviors based on AVQ data. Our main outcome variable exploits information on the body mass index (BMI) of the interviewees. It is a binary indicator equal to 1 if respondents are classified as either overweight or obese and 0 otherwise. The classification of the BMI is the following: individuals reporting a BMI less than 18.5 are classified as underweight, whilst individuals reporting a BMI between 18.5 (25) and 25 (30) are classified as normal (over) weight. Finally, individuals reporting a BMI greater than 30 are classified as obese. Thereafter, we generate various indicators for the frequency of consumption for a detailed list of food items. The list of food items includes bread and pasta, lunch meat, poultry, beef, pork, milk, cheese and dairy products, eggs, leaf vegetables, solanaceae vegetables, fruit, legumes, potatoes, snacks, and sweets. Each indicator is equal to 1 if respondents report that frequency of consumption is on daily basis or more.

As additional outcome variables, using the HBS data, we consider two binary indicators for whether households report to purchase biological food and in what venues they do groceries. The former is equal to 1 if families report buying biological food of at least one of the items of the list mentioned above. The latter is equal to 1 if they report doing groceries in hard discounts.<sup>4</sup> Finally, we create a continuous variable for the total amount of household expenditure, considering the same bundle of food items defined in the AVQ data.

Our goal is to investigate the association between partner unemployment and individ-

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<sup>2</sup>For details, visit the following link: <https://www.istat.it/en/microdata/household-budget-survey> (last access July 8, 2025).

<sup>3</sup>The data for the two surveys are publicly available. However, information on the location of individuals and households is confidential. To match each record to the respective region of residence, we obtained access to confidential data by signing a memorandum of understanding with the institute. For details, visit <https://www.istat.it/dati/microdati/per-la-ricerca-mfr> (last access June 21, 2025).

<sup>4</sup>According to the ISTAT definition, hard discounts are supermarkets selling products of typically non-advertised brands of which quality may be lower than products sold in traditional supermarkets.

ual physical health; hence, we focus on a sample of households with married or cohabiting couples. To study the effect of unemployment, we retain only families where both members of the couple are part of the active labor force.<sup>5</sup> We define individuals as unemployed if they report not working but to be actively looking for an occupation. Following these selection criteria, we obtain two final samples. The main sample, from the AVQ survey, contains information on 33,037 families covering the period between 2013 and 2022. The complementary sample, from the HBS survey, reports information on 35,554 families covering the period between 2014 and 2022.<sup>6</sup> Tables A.1 and A.2 in the Online appendix report the summary statistics for the list outcome variables.

### 3 Method

#### 3.1 Estimation strategy

We estimate the association between partner unemployment, individual physical health, and household consumption behaviors using the following linear model:

$$y_{irt} = \delta PU_{irt} + \beta X_{irt} + \theta Z_{rt} + \lambda_r + \psi_t + \varepsilon_{irt} \quad (1)$$

where  $y_{irt}$  is the outcome variable,  $PU_{irt}$  is the binary indicator for partner unemployment,  $X_{irt}$  and  $Z_{rt}$  are two vectors of individual and regional characteristics,  $\lambda_r$  and  $\psi_t$  are the regional and year fixed effects and  $\varepsilon_{irt}$  is the error term. As described in Section 2, we adopt four sets of outcome variables: i) one binary indicator that proxies the physical health status (1 if respondents are classified as either overweight or obese, and 0 otherwise); ii) 16 binary indicators describing the frequency of consumption for a detailed list of food items; iii) two binary indicators describing the quality of household consumption (i.e., buying biological food and doing groceries in hard discounts, respectively); iv) one continuous variable reporting the total amount of household consumption expenditure (in

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<sup>5</sup>Our definition of active labor force considers all those individuals aged from 18 to 65 years old that are either employed or unemployed. In a sensitivity check, we enlarge the reference population by also considering households where one or both members may not be part of the active population, such as homemakers and individuals unable to work. We present the results in the Online appendix in Table C.6.

<sup>6</sup>The number of families with an unemployed member of the couple is 1,432 in the main sample (AVQ) and 868 in the complementary sample (HBS).

euros). The first two sets of outcome variables refer to the AVQ survey data, while the last two sets refer to the HBS survey data.

Our selection of the set of control variables starts from the available information and follows the economic intuition from previous empirical literature that studied the impact of unemployment on health (see e.g., [Everding and Marcus, 2020](#); [Marcus, 2013](#); [Nikolova and Ayhan, 2019](#)). As individual characteristics, we include covariates on the gender, age, and education level of both members of the couple. We also add a variable for the number of members who live in the household to control for the family size. Given the limited set of socio-economic information available in both the household surveys, we cannot include measures for the individual and household wealth, such as earnings or family income. We proxy these relevant dimensions using the median household income at the regional level. Finally, in order to control for business cycle and labor market status, we include the GDP growth rate and unemployment rate. All the aggregate statistics are sourced by ISTAT.<sup>7</sup> Tables [A.1](#) and [A.2](#) in the Online appendix report the summary statistics for the list of control variables for both the main and complementary samples.

To account for within-regional correlation, all estimates consider standard errors using the [Liang and Zeger's \(1986\)](#) cluster-robust variance estimator. Moreover, we employ population weights to accurately reflect the general characteristics of the population.

### 3.2 Dealing with endogeneity

The inclusion of control variables and fixed effects helps us to remove possible spurious correlation from the estimated effect of unemployment. However, endogeneity concerns relative to the identification of unemployment still remains. Several studies suggest that the transition to unemployment is the result of a selective process where laid-off workers are already at higher risk of job loss with respect to their working peers because of systemic differences in unobservable characteristics ([Brand, 2015](#); [Kassenboehmer and Haiken-DeNew, 2009](#); [Suppa, 2021](#)). To address this problem, researchers typically exploit information on the reason of unemployment entry or the timing of job loss to remove the omitted variable bias. In our data, we cannot access this type of information.

To overcome this limitation, we employ a partial identification approach proposed by [Oster \(2019\)](#). [Oster's \(2019\)](#) method extends the framework developed by [Altonji et al.](#)

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<sup>7</sup>For details, visit <https://esploradati.istat.it/databrowser> (last access July 8, 2025).



(2005) assuming that the bias arising from unobserved confounders is proportional to movements of the coefficient after the inclusion of observed controls in the regression, scaled by the change in the goodness of fit of the model when these controls are included. Oster (2019) argues that if researchers were able to observe all the possible factors affecting the relation between the main independent variable and the outcome, the following quantity may be estimated:

$$\beta^* \approx \tilde{\beta} - \delta \left[ \dot{\beta} - \tilde{\beta} \right] \frac{R_{\max} - \tilde{R}}{\tilde{R} - \dot{R}} \quad (2)$$

where  $\dot{\beta}$  and  $\dot{R}$  are the estimated coefficient and  $R^2$  for the most parsimonious specification that includes the main independent variable and the regional and year fixed effects.  $\tilde{\beta}$  and  $\tilde{R}$  refer to the same quantities for the preferred specification that includes the observed controls as described in Equation (1).  $\beta^*$  is the bias-adjusted coefficient from a hypothetical regression that controls for all possible observable and unobservable characteristics.  $R_{\max}$  is the upper bound of the  $R^2$  from the hypothetical regression. Under the condition that the outcome can be fully explained by the inclusion of both observable and unobservable factors, the  $R_{\max}$  is equal to 1. However, as Oster (2019) suggests this is unlikely to hold in practice because the outcome may suffer from unintended measurement error which would not allow for the whole set of factors to explain it. Therefore, the author proposes an heuristic approach whereby  $R_{\max} = \min\{\Pi\tilde{R}, 1\}$ , where  $\Pi$  is a calibration parameter that may either be equal to 1.3, 1.5 or 2.<sup>8</sup> Finally,  $\delta$  is the parameter for the relative degree of selection on unobservables to observables that approximates the proportional omitted variable bias. This statistic allows us to quantify the amount of selection on unobservables, relative to selection on observables, needed to explain away the effect of unemployment.

The two key inputs are  $R_{\max}$  and  $\delta$ , which cannot be observed. Oster (2019) proposes a bounding method for retrieving the true estimated effect, that should range between  $\tilde{\beta}$  and  $\beta^*$ . More in detail, it may be computed under the assumptions that selection on unobservables is equally important as selection on observables (i.e.,  $\delta = 1$ ) and that the maximum value of the goodness of fit of the model is between  $\Pi\tilde{R}$  and 1. The robustness of the results may be assessed in two alternative ways. On the one hand, after setting

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<sup>8</sup>Oster (2019) defines these values after a validation exercise using a sample of randomized and non-randomized trials.

the values for the parameters  $\delta$  and  $R_{\max}$  the researchers evaluate if the set of values for the  $\beta$  coefficient  $[\tilde{\beta}, \beta^*]$  excludes 0. On the other hand, after setting the values for the parameter  $R_{\max}$ , they can also compute the value of the statistics  $\delta$  such that the true estimated effect is equal to 0. If  $\delta$  exceeds 1, then the results may be considered robust.

## 4 Empirical findings

### 4.1 Main results

Table 1 reports the results for the main sample. Columns (1) to (3) refer to the estimated association of partner unemployment on household heads' physical health status, whilst columns (4) to (6) refer to the estimated association on spouses' physical health status. Our preferred specification is reported in columns (3) and (6), which includes the set of observable characteristics and fixed effects described in Equation (1).<sup>9</sup>

**Table 1:** Partner unemployment effect: main estimation results

	Probability of being overweight or obese:					
	Household head			Spouse		
	(1)	(2)	(3)	(4)	(5)	(6)
Partner unemployment	0.0253 (0.0212)	0.0220 (0.0222)	0.0221 (0.0222)	0.0859*** (0.0259)	0.0583** (0.0215)	0.0584** (0.0214)
Individual controls	No	Yes	Yes	No	Yes	Yes
Aggregate controls	No	No	Yes	No	No	Yes
Region FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
# of observations	33,037	33,037	33,037	33,037	33,037	33,037
# of clusters	20	20	20	20	20	20
$R^2$	0.0128	0.0973	0.0974	0.00567	0.0852	0.0853

Source: Aspects of Daily Life (AVQ).

Notes: \* Significant at 10%, \*\* significant at 5% and \*\*\* significant at 1%. Standard errors robust to heteroskedasticity and within-region correlation are reported in parentheses. Each regression is weighted using population weights. Model estimates include all the covariates and fixed effects illustrated in Section 3. Full estimation results are presented in the Online appendix B. The sample covers the period 2013–2022.

We find that the impact of partner unemployment on individual physical health is related to the role of the unemployed within the household. On the one hand, we document a null effect when the spouse is unemployed. On the other hand, we find a negative association between partner unemployment and individual health when the household

<sup>9</sup>We report the full estimation table of the benchmark estimates in the Online appendix B.

head is unemployed. The unemployment of the household head is associated with increase of almost 6 percentage points in the probability of the partner reporting to be overweight or obese.

These findings may be the result of systemic differences between household heads and spouses in the contribution to family income. The absence of any significant association when the unemployed partner is not the household head may suggest that the economic consequences of unemployment are not perceived equally within the couple. One plausible interpretation is that spouses may contribute relatively less than household heads to total income of the family. As a result, their job loss may not substantially alter the household's budget constraint. Alternatively, the unemployed spouse might be more involved in household chores, potentially offsetting the negative consequences on household health by improving time-intensive home production such as meal preparation or caregiving.

As a response to a greater financial burden, households may adjust the consumption behavior either by changing the composition of the bundle of goods or by reducing the quality of the goods purchased. We explore these hypotheses by studying if unemployment is associated with a change in the consumption habits of the household. First, we check if the presence of an unemployed partner implies different frequencies of consumption for a list of food items that are likely to impact the physical well-being. The list of food items is described in Section 2. We focus on the daily frequency to approximate for the routine dietary habits of the individuals. Tables 2 and 3 show the results for household heads and spouses, respectively. We find that partner unemployment has little to no association with the number of times individuals consume a certain type of food. Because dietary traditions may differ depending on the location where individuals reside, we replicate the analysis using the median frequency of consumption at regional level as reference. Tables C.1 and C.2 report the results, showing that they are qualitatively similar to the benchmark estimates.

Second, using data from the complementary sample, we study if unemployment is associated with a reduction in the quality of consumption of the families. More in detail, we investigate if the unemployed condition of one member of the couple decreases the amount of food expenditure at the household level. Thereafter, we examine if it increases the likelihood of families doing groceries in hard discounts. Finally, we check if families with and without unemployed members have different probabilities of purchasing biolog-

ical food. Table 4 reports the findings. We find that partner unemployment is associated with lower quality of consumption, especially in families with unemployed household heads. They are about 10 percentage points less likely to purchase biological food and 12 percentage points more likely to do groceries in hard discounts. Food expenditure is also smaller of about 100 euros per month in families with an unemployed household head. These point estimates are about 30 to 50% larger compared to those of the case of unemployed spouse. Further, the tests for equality of coefficients return a  $p$ -value always greater than 0.2, suggesting that albeit financial distress induced by unemployment affects consumption patterns of families, it is the household head unemployment that translates into a deterioration of the quality of food rather than a reduction in the quantity. The higher probability of shopping in hard discounts and lower likelihood of buying organic food indicate a cost-driven shift in consumption priorities. This may be consistent with the “household production of health” framework (Grossman, 1972), whereby families facing tighter constraints substitute away from health-enhancing consumption, potentially leading to worse health outcomes over time.

It is worth emphasizing that these associations are observed in the Italian context, where access to healthy food is relatively widespread and affordable (OECD, 2021; Minotti et al., 2022). Therefore, the observed deterioration in food quality under unemployment pressures may represent a lower bound of what might be the health effect of unemployment if observed in other developed countries with higher relative prices for healthy food or more unequal access. Furthermore, in countries where social safety nets are less generous or more targeted, the negative impact on household health may be even more pronounced.

## 4.2 Sensitivity analysis

We assess the robustness of our results by performing a series of sensitivity checks. First, we start by investigating the extent to which the selection bias may affect our main findings. Although we implement an extensive set of observables confounders to limit endogeneity concerns relative to selection into unemployment, so far our results may be interpreted only as correlational. To understand the extent to which our findings may be interpreted under the light of causal associations, we use the partial identification approach proposed by Oster (2019) and apply all three calibration parameters for the  $R_{\max}$

**Table 2: Difference in consumption habits for bundles of goods (household head)**

Probability of daily consumption of:																
	Bread and pasta (1)	Lunch meats (2)	Poultry (3)	Beef (4)	Pork (5)	Milk (6)	Cheese and dairy products (7)	Eggs (8)	Fish (9)	Leaf vegetables (10)	Solanaceae vegetables (11)	Fruit (12)	Legumes (13)	Potatos (14)	Snacks (15)	Sweets (16)
Partner unemployment	0.0018 (0.0167)	0.0020 (0.0171)	0.0133 (0.0154)	0.0020 (0.0128)	-0.0029 (0.0093)	-0.0161 (0.0279)	0.0033 (0.0169)	0.0310*** (0.0095)	0.0023 (0.0096)	-0.0310 (0.0185)	-0.0215 (0.0156)	-0.0117 (0.0175)	0.0129 (0.0105)	0.0123 (0.0085)	-0.0032 (0.0058)	-0.0107 (0.0092)
# of observations	32,855	32,615	32,797	32,748	32,652	32,672	32,791	29,220	32,821	32,832	32,643	32,690	32,713	32,716	32,700	32,725
# of cluster	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
R <sup>2</sup>	0.0256	0.0220	0.0171	0.0127	0.0124	0.0216	0.0203	0.0152	0.00787	0.0306	0.0246	0.0284	0.00481	0.0107	0.0122	0.0123

Source: Aspects of Daily Life (AVQ).

Notes: \* Significant at 10%, \*\* significant at 5% and \*\*\* significant at 1%. Standard errors robust to heteroskedasticity and within-region correlation are reported in parentheses. Each regression is weighted using population weights. Model specifications are the same as in column (3) of Table 1. The sample covers the period 2013–2022.

**Table 3: Difference in consumption habits for bundles of goods (spouse)**

Probability of daily consumption of:																
	Bread and pasta (1)	Lunch meats (2)	Poultry (3)	Beef (4)	Pork (5)	Milk (6)	Cheese and dairy products (7)	Eggs (8)	Fish (9)	Leaf vegetables (10)	Solanaceae vegetables (11)	Fruit (12)	Legumes (13)	Potatos (14)	Snacks (15)	Sweets (16)
Partner unemployment	0.0037 (0.0220)	-0.0000 (0.0137)	0.0013 (0.0182)	0.0003 (0.0097)	0.0065 (0.0092)	-0.0235 (0.0264)	-0.0039 (0.0257)	0.0225** (0.0098)	0.0016 (0.0093)	-0.0234 (0.0171)	-0.0555** (0.0230)	0.0070 (0.0200)	0.0065 (0.0148)	0.0112 (0.0098)	-0.0135** (0.0059)	-0.0046 (0.0102)
# of observations	32,813	32,567	32,759	32,689	32,593	32,672	32,710	29,186	32,778	32,775	32,644	32,659	32,714	32,708	32,667	32,703
# of cluster	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
R <sup>2</sup>	0.0269	0.0185	0.0171	0.0133	0.0115	0.0283	0.0175	0.0169	0.00577	0.0322	0.0213	0.0312	0.00573	0.00948	0.0137	0.0137

Source: Aspects of Daily Life (AVQ).

Notes: \* Significant at 10%, \*\* significant at 5% and \*\*\* significant at 1%. Standard errors robust to heteroskedasticity and within-region correlation are reported in parentheses. Each regression is weighted using population weights. Model specifications are the same as in column (6) of Table 1. The sample covers the period 2013–2022.

**Table 4:** Effect of unemployment on quality of food

	Probability of purchasing bio-food	Probability of shopping in hard discounts	Amount of money spent in food (in €)
	(1)	(2)	(3)
Household head unemployment	-0.1036** (0.0395)	0.1193*** (0.0358)	-45.8708** (21.0842)
Spouse unemployment	-0.0459 (0.0444)	0.0823** (0.0371)	-46.9298** (22.2641)
<i>F</i> -test for equality of coefficients, <i>p</i> -value	0.2361	0.5049	0.9316
# of observations	3,058	35,544	35,544
# of clusters	20	20	20
<i>R</i> <sup>2</sup>	0.0655	0.0264	0.136

Source: Household Budget Survey (HBS).

Notes: \* Significant at 10%, \*\* significant at 5% and \*\*\* significant at 1%. Standard errors robust to heteroskedasticity and within-region correlation are reported in parentheses. Each regression is weighted using population weights. Model estimates include all the covariates and fixed effects illustrated in Section 3. The number of observations in column (1) is smaller because HBS households were asked about the purchase of biological food only in the 2014 wave. The sample covers the period 2014–2022.

input.<sup>10</sup> Table 5 reports the results. Column (1) refers to the coefficient bounds for the estimated effect, whilst column (2) shows the relative degree of selection on unobservables to observables needed to explain away the effect of unemployment. We find that the association between partner unemployment and individual physical health is robust to omitted variable bias. In all cases, the value 0 is not included within the coefficient bounds. Further, we document that the amount of selection on unobservables to explain away our main findings should be from two to sixteen times larger than the amount of selection on observables, which is highly unlikely.

Second, given the limited number of clusters represented by the regions, we follow MacKinnon et al. (2023) and re-estimate Equation (1) using wild-cluster bootstrapping to account for the possible small-cluster bias of the variance matrix.<sup>11</sup> Table C.3 in the Online appendix presents the results, which are consistent with our main findings.

Third, we test if our results are sensitive in magnitude and significance to the size of the sample we used. Responses to unemployment may differ depending on the context where individuals live in. For instance, households living in areas with more generous welfare may suffer less from unemployment because of the higher support they receive (Crost, 2016; Kuka, 2020). Also, social norms of unemployment are different in periods of tight or slack labor markets (Clark, 2003). We perform two types of leave-one-out exercises, by removing each time either one of the twenty regions or one of the survey waves from the sample. Tables C.4 and C.5 report the estimated coefficients showing that

<sup>10</sup>We use the Stata command `psacalc` developed by Oster (2016).

<sup>11</sup>We use the Stata command `boottest` developed by Roodman et al. (2019).

our baseline findings remain stable.

Finally, we extend the analysis by considering also households where one of the members of the couple may not be part of the active population. This exercise increases the external validity of our analysis, but at the price of adding potential bias in our main independent variable. The results are presented in Table C.6. Likewise the case of unemployment, we find that the impact of non-occupation is related to the role of the non-occupied within the household. Only partners of non-occupied household heads are more likely to be overweight.

**Table 5:** Sensitivity analysis for omitted variable bias

	$R_{\max}$	$\left[ \beta_{R_{\max}=\min\{\Pi\tilde{R},1\},\delta=1}^*, \hat{\beta}_{\delta=0} \right]$	$\delta_{R_{\max}=\min\{\Pi\tilde{R},1\}}$
		(1)	(2)
<i>a) Household head</i>			
Partner unemployment	$1.3\tilde{R}$	[0.0209; 0.0221]	16.7566
	$1.5\tilde{R}$	[0.0202; 0.0221]	10.0617
	$2\tilde{R}$	[0.0182; 0.0221]	5.0338
<i>b) Spouse</i>			
Partner unemployment	$1.3\tilde{R}$	[0.0495; 0.0584]	6.4028
	$1.5\tilde{R}$	[0.0434; 0.0584]	3.8599
	$2\tilde{R}$	[0.0285; 0.0584]	1.9368

*Source:* Aspects of Daily Life (AVQ).

*Notes:* The dependent variable is the probability of being at least overweight (i.e.,  $BMI \geq 25$ ).  $R_{\max}$  is the maximum level of fit from a hypothetical regression that controls for both observables and unobservables.  $\tilde{R}$  is the goodness of fit of the preferred model specification.  $\Pi$  is a calibration parameter as defined in Oster (2019).  $\hat{\beta}$  is the estimated coefficient from the preferred specification.  $\beta^*$  is the value of the bias-adjusted coefficient assuming that the maximum fit corresponds to  $R_{\max}$ .  $\delta$  is the value of proportional selection of unobservable relative to observables, assuming that the maximum fit corresponds to  $R_{\max}$ .

## 5 Conclusions

In this paper, we study the spillover effects of unemployment within households by investigating the association between partner unemployment and the physical health of individuals. Motivated by the idea that unemployment can affect not only the individual directly involved but also other household members through changes in economic resources and consumption behaviors, we combine evidence from two nationally representative surveys of Italian households. Using standard parametric estimation techniques and a partial identification approach to address endogenous selection into unemployment, we find that partner unemployment is associated with worse physical health outcomes (i.e.,

higher probability of being overweight or obese) only when the unemployed partner is the household head. We further show that this effect is likely driven by a deterioration in the quality of food consumption, as households reduce expenditure, are more likely to purchase food from hard discounts, and less likely to buy organic products.

Our results are in line with previous literature that documents the adverse effect on health of partner unemployment (Everding and Marcus, 2020; Marcus, 2013; Nikolova and Ayhan, 2019). However, by focusing on physical rather than mental health, and by exploring specific mechanisms related to food consumption, our study contributes to the literature on both the health effects of unemployment and the intra-household transmission of economic shocks. In particular, we document that the negative health impact is concentrated among individuals whose partner is both unemployed and the main (hypothetical) income provider in the family, thus the household head. This asymmetry suggests that economic strain, rather than the mere presence of an unemployed partner, is likely to be a key channel driving the deterioration in physical health.

Policymakers may consider increasing the sustainability of food expenditure of families in order to prevent possible unintended public health consequences such as increased risk of cardiovascular disease, especially among households with unemployed members. In particular, social protection systems could be designed to account for not only the income loss of the unemployed individual, but also the broader implications for the household's dietary habits and health. Temporary subsidies for healthy food, targeted nutritional support, or the promotion of affordable and nutritious diets could help mitigate these indirect health effects. Moreover, unemployment benefits could be adapted to reflect household composition and dependency structures, thereby enhancing their effectiveness in preserving overall well-being.

Overall, our results suggest that labor market shocks may affect not only individuals, but also extend to other members of the household. Recognizing and addressing these spillover effects - particularly through food and health policy - may be crucial for safeguarding population health during periods of economic hardship.

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# Online appendix

## A Tables of summary statistics

**Table A.1:** Summary statistics of Aspects of Daily Life (AVQ)

Variables	$n$	$\mu$	$\sigma$	Minimum	Maximum
<i>Dependent variables</i>					
Status of being at least overweight:					
Household head	33,037	0.5314	0.4990	0.0000	1.0000
Spouse	33,037	0.3360	0.4723	0.0000	1.0000
Daily consumption of bread and pasta:					
Household head	32,855	0.7802	0.4141	0.0000	1.0000
Spouse	32,813	0.7320	0.7320	0.0000	1.0000
Daily consumption of lunch meats:					
Household head	32,615	0.0990	0.2986	0.0000	1.0000
Spouse	32,567	0.0733	0.2606	0.0000	1.0000
Daily consumption of poultry:					
Household head	32,797	0.0970	0.2960	0.0000	1.0000
Spouse	32,759	0.0976	0.2967	0.0000	1.0000
Daily consumption of beef:					
Household head	32,748	0.0486	0.2151	0.0000	1.0000
Spouse	32,689	0.0431	0.2031	0.0000	1.0000
Daily consumption of pork:					
Household head	32,652	0.0316	0.1750	0.0000	1.0000
Spouse	32,593	0.0276	0.1638	0.0000	1.0000
Daily consumption of milk:					
Household head	32,672	0.4346	0.4957	0.0000	1.0000
Spouse	32,672	0.4906	0.4999	0.0000	1.0000
Daily consumption of cheese and dairy products:					
Household head	32,791	0.2093	0.4068	0.0000	1.0000
Spouse	32,710	0.2067	0.4049	0.0000	1.0000
Daily consumption of eggs:					
Household head	29,220	0.0369	0.1886	0.0000	1.0000
Spouse	29,186	0.0377	0.1905	0.0000	1.0000
Daily consumption of fish:					
Household head	32,821	0.0318	0.1755	0.0000	1.0000
Spouse	32,778	0.0356	0.1853	0.0000	1.0000
Daily consumption of leaf vegetables:					
Household head	32,832	0.5157	0.4998	0.0000	1.0000
Spouse	32,775	0.5766	0.4941	0.0000	1.0000
Daily consumption of solanaceae vegetables:					
Household head	32,643	0.4306	0.4952	0.0000	1.0000
Spouse	32,644	0.5025	0.5000	0.0000	1.0000
Daily consumption of fruit:					
Household head	32,690	0.7200	0.4490	0.0000	1.0000
Spouse	32,659	0.7542	0.4306	0.0000	1.0000

(continued on next page)

**Table A.1:** *Continued from previous page*

Variables	<i>n</i>	$\mu$	$\sigma$	Minimum	Maximum
Daily consumption of legumes:					
Household head	32,713	0.0291	0.1680	0.0000	1.0000
Spouse	32,714	0.0313	0.1742	0.0000	1.0000
Daily consumption of potatoes:					
Household head	32,716	0.0297	0.1698	0.0000	1.0000
Spouse	32,708	0.0283	0.1658	0.0000	1.0000
Daily consumption of snacks:					
Household head	32,700	0.0301	0.1709	0.0000	1.0000
Spouse	32,667	0.0286	0.1666	0.0000	1.0000
Daily consumption of sweets:					
Household head	32,725	0.1217	0.3269	0.0000	1.0000
Spouse	32,703	0.1215	0.3268	0.0000	1.0000
<i>Main independent variables</i>					
Partner unemployment:					
Household head	33,037	0.0204	0.1413	0.0000	1.0000
Spouse	33,037	0.0277	0.1641	0.0000	1.0000
<i>Household head characteristics</i>					
Gender: (ref. Male)					
Female	33,037	0.1933	0.3949	0.0000	1.0000
Age in class: (ref. 20 to 24 years old)					
25 to 29 years old	33,037	0.0205	0.1419	0.0000	1.0000
30 to 34 years old	33,037	0.0700	0.2552	0.0000	1.0000
35 to 39 years old	33,037	0.1254	0.3311	0.0000	1.0000
40 to 44 years old	33,037	0.1735	0.3787	0.0000	1.0000
45 to 49 years old	33,037	0.1934	0.3950	0.0000	1.0000
50 to 54 years old	33,037	0.1950	0.3962	0.0000	1.0000
55 to 59 years old	33,037	0.1503	0.3574	0.0000	1.0000
60 to 64 years old	33,037	0.0700	0.2552	0.0000	1.0000
Educational level achieved: (ref. No schooling)					
Elementary school	33,037	0.0180	0.1330	0.0000	1.0000
Middle school	33,037	0.2589	0.4380	0.0000	1.0000
High school diploma	33,037	0.4785	0.4995	0.0000	1.0000
Tertiary education	33,037	0.2425	0.4286	0.0000	1.0000
<i>Spouse characteristics</i>					
Gender: (ref. Male)					
Female	33,037	0.8068	0.3949	0.0000	1.0000
Age in class: (ref. 18 to 19 years old)					
20 to 24 years old	33,037	0.0040	0.0631	0.0000	1.0000
25 to 29 years old	33,037	0.0334	0.1798	0.0000	1.0000
30 to 34 years old	33,037	0.0896	0.2856	0.0000	1.0000
35 to 39 years old	33,037	0.1485	0.3556	0.0000	1.0000
40 to 44 years old	33,037	0.1903	0.3926	0.0000	1.0000
45 to 49 years old	33,037	0.2042	0.4031	0.0000	1.0000
50 to 54 years old	33,037	0.1867	0.3896	0.0000	1.0000
55 to 59 years old	33,037	0.1122	0.3157	0.0000	1.0000
60 to 64 years old	33,037	0.0310	0.1734	0.0000	1.0000

*(continued on next page)*

**Table A.1:** *Continued from previous page*

Variables	$n$	$\mu$	$\sigma$	Minimum	Maximum
Educational level achieved: (ref. No schooling)					
Elementary school	33,037	0.0121	0.1094	0.0000	1.0000
Middle school	33,037	0.2125	0.4090	0.0000	1.0000
High school diploma	33,037	0.4880	0.4999	0.0000	1.0000
Tertiary education	33,037	0.2855	0.4517	0.0000	1.0000
<i>Family characteristics</i>					
Number of members in household	33021	3.3735	0.9387	2.0000	9.0000
Region of residence: (ref. Piemonte)					
Valle d' Aosta	33,037	0.0291	0.1681	0.0000	1.0000
Lombardia	33,037	0.1130	0.3165	0.0000	1.0000
Trentino-Alto Adige	33,037	0.0826	0.2753	0.0000	1.0000
Veneto	33,037	0.0743	0.2622	0.0000	1.0000
Friuli-Venezia Giulia	33,037	0.0452	0.2077	0.0000	1.0000
Liguria	33,037	0.0393	0.1943	0.0000	1.0000
Emilia-Romagna	33,037	0.0718	0.2581	0.0000	1.0000
Toscana	33,037	0.0650	0.2464	0.0000	1.0000
Umbria	33,037	0.0309	0.1731	0.0000	1.0000
Marche	33,037	0.0456	0.2087	0.0000	1.0000
Lazio	33,037	0.0551	0.2283	0.0000	1.0000
Abruzzo	33,037	0.0355	0.1851	0.0000	1.0000
Molise	33,037	0.0233	0.1509	0.0000	1.0000
Campania	33,037	0.0443	0.2058	0.0000	1.0000
Puglia	33,037	0.0380	0.1912	0.0000	1.0000
Basilicata	33,037	0.0228	0.1492	0.0000	1.0000
Calabria	33,037	0.0333	0.1793	0.0000	1.0000
Sicilia	33,037	0.0391	0.1938	0.0000	1.0000
Sardegna	33,037	0.0315	0.1747	0.0000	1.0000
Survey year: (ref. 2013)					
2014	33,037	0.1005	0.3007	0.0000	1.0000
2015	33,037	0.1014	0.3019	0.0000	1.0000
2016	33,037	0.0969	0.2958	0.0000	1.0000
2017	33,037	0.1093	0.3120	0.0000	1.0000
2018	33,037	0.1019	0.3026	0.0000	1.0000
2019	33,037	0.1014	0.3019	0.0000	1.0000
2020	33,037	0.0940	0.2919	0.0000	1.0000
2021	33,037	0.0987	0.2983	0.0000	1.0000
2022	33,037	0.0938	0.2916	0.0000	1.0000
<i>Aggregate characteristics</i>					
GDP per capita (growth rate)	33,037	0.0252	0.0502	-0.1220	0.1375
Median household income	33,037	26,830.9700	3,814.6340	17,901.0000	37,308.0000
Unemployment rate	33,037	10.1163	5.0750	3.0673	23.6800

*Source:* Aspects of Daily Life (AVQ).



**Table A.2:** Summary statistics of Household Budget Survey (HBS)

Variables	$n$	$\mu$	$\sigma$	Minimum	Maximum
<i>Dependent variables</i>					
Purchasing bio-food	3,058	0.1736	0.3789	0.0000	1.0000
Doing groceries in hard discounts	35,544	0.2538	0.4352	0.0000	1.0000
Amount of money spent in food	35,544	469.0894	277.8156	0.0000	3,485.6900
<i>Main independent variables</i>					
Partner unemployment:					
Household head	35,544	0.0061	0.0781	0.0000	1.0000
Spouse	35,544	0.0202	0.1407	0.0000	1.0000
<i>Household head characteristics</i>					
Gender: (ref. Male)					
Female	35,544	0.2342	0.4235	0.0000	1.0000
Age in class: (ref. 20 to 24 years old)					
25 to 29 years old	35,544	0.0211	0.1437	0.0000	1.0000
30 to 34 years old	35,544	0.0731	0.2604	0.0000	1.0000
35 to 39 years old	35,544	0.1237	0.3292	0.0000	1.0000
40 to 44 years old	35,544	0.1629	0.3693	0.0000	1.0000
45 to 49 years old	35,544	0.1910	0.3931	0.0000	1.0000
50 to 54 years old	35,544	0.1893	0.3918	0.0000	1.0000
55 to 59 years old	35,544	0.1602	0.3668	0.0000	1.0000
60 to 64 years old	35,544	0.0765	0.2659	0.0000	1.0000
Educational level achieved: (ref. No schooling)					
Elementary school	35,544	0.0118	0.1078	0.0000	1.0000
Middle school	35,544	0.2328	0.4226	0.0000	1.0000
High school diploma	35,544	0.4866	0.4998	0.0000	1.0000
Tertiary education	35,544	0.2677	0.4428	0.0000	1.0000
<i>Spouse characteristics</i>					
Gender: (ref. Male)					
Female	35,544	0.7657	0.4235	0.0000	1.0000
Age in class: (ref. 20 to 24 years old)					
25 to 29 years old	35,544	0.0338	0.1808	0.0000	1.0000
30 to 34 years old	35,544	0.0914	0.2882	0.0000	1.0000
35 to 39 years old	35,544	0.1379	0.3448	0.0000	1.0000
40 to 44 years old	35,544	0.1766	0.3813	0.0000	1.0000
45 to 49 years old	35,544	0.2036	0.4027	0.0000	1.0000
50 to 54 years old	35,544	0.1885	0.3911	0.0000	1.0000
55 to 59 years old	35,544	0.1270	0.3330	0.0000	1.0000
60 to 64 years old	35,544	0.0365	0.1875	0.0000	1.0000
Educational level achieved: (ref. No schooling)					
Elementary school	35,544	0.0093	0.0962	0.0000	1.0000
Middle school	35,544	0.1969	0.3977	0.0000	1.0000
High school diploma	35,544	0.4882	0.4999	0.0000	1.0000
Tertiary education	35,544	0.3048	0.4603	0.0000	1.0000
<i>Family characteristics</i>					
Number of members in household	33021	3.2871	0.9514	2.0000	6.0000
Region of residence: (ref. Piemonte)					

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**Table A.2:** *Continued from previous page*

Variables	<i>n</i>	$\mu$	$\sigma$	Minimum	Maximum
Valle d' Aosta	35,544	0.0281	0.1653	0.0000	1.0000
Lombardia	35,544	0.1452	0.3523	0.0000	1.0000
Trentino-Alto Adige	35,544	0.0585	0.2348	0.0000	1.0000
Veneto	35,544	0.0801	0.2715	0.0000	1.0000
Friuli-Venezia Giulia	35,544	0.0358	0.1859	0.0000	1.0000
Liguria	35,544	0.0372	0.1892	0.0000	1.0000
Emilia-Romagna	35,544	0.0842	0.2777	0.0000	1.0000
Toscana	35,544	0.0739	0.2616	0.0000	1.0000
Umbria	35,544	0.0284	0.1662	0.0000	1.0000
Marche	35,544	0.0406	0.1973	0.0000	1.0000
Lazio	35,544	0.0804	0.2719	0.0000	1.0000
Abruzzo	35,544	0.0283	0.1658	0.0000	1.0000
Molise	35,544	0.0226	0.1486	0.0000	1.0000
Campania	35,544	0.0419	0.2005	0.0000	1.0000
Puglia	35,544	0.0341	0.1816	0.0000	1.0000
Basilicata	35,544	0.0239	0.1528	0.0000	1.0000
Calabria	35,544	0.0274	0.1633	0.0000	1.0000
Sicilia	35,544	0.0386	0.1927	0.0000	1.0000
Sardegna	35,544	0.0200	0.1401	0.0000	1.0000
Survey year: (ref. 2014)					
2015	35,544	0.0848	0.2787	0.0000	1.0000
2016	35,544	0.0765	0.2659	0.0000	1.0000
2017	35,544	0.0912	0.2879	0.0000	1.0000
2018	35,544	0.0990	0.2987	0.0000	1.0000
2019	35,544	0.0994	0.2992	0.0000	1.0000
2020	35,544	0.1454	0.3525	0.0000	1.0000
2021	35,544	0.1622	0.3687	0.0000	1.0000
2022	35,544	0.1553	0.3622	0.0000	1.0000
<i>Aggregate characteristics</i>					
GDP per capita (growth rate)	35,544	0.0347	0.0595	-0.1220	0.1375
Median household income	35,544	27,550.9800	3,848.6190	17,901.0000	37,308.0000
Unemployment rate	35,544	9.4316	4.8060	3.0673	23.6800

*Source:* Household Budget Survey (HBS).

## B Full set of estimation results of the benchmark models

**Table B.1:** Full set of estimation results

	Probability of being overweight or obese:					
	Household head			Spouse		
	(1)	(2)	(3)	(4)	(5)	(6)
Constant	0.4751*** (0.0076)	1.2440*** (0.1611)	1.1966*** (0.1910)	0.2770*** (0.0096)	0.3564** (0.1268)	0.3663** (0.1482)
<i>Main independent variable</i>						
Partner unemployment	0.0253 (0.0212)	0.0220 (0.0222)	0.0221 (0.0222)	0.0859*** (0.0259)	0.0583** (0.0215)	0.0584** (0.0214)
<i>Household head characteristics</i>						
Gender: (ref. Male)						
Female		-0.6441*** (0.0133)	-0.6429*** (0.0129)		-0.3168*** (0.0121)	-0.3137*** (0.0130)
Age in class: (ref. 20 to 24 years old)						
25 to 29 years old		-0.1562* (0.0770)	-0.1561* (0.0772)		0.1020 (0.0620)	0.1020 (0.0620)
30 to 34 years old		-0.1861** (0.0703)	-0.1861** (0.0705)		0.1031 (0.0694)	0.1031 (0.0694)
35 to 39 years old		-0.1465** (0.0695)	-0.1465** (0.0697)		0.0977 (0.0650)	0.0976 (0.0650)
40 to 44 years old		-0.1399* (0.0763)	-0.1400* (0.0766)		0.1006 (0.0630)	0.1005 (0.0630)
45 to 49 years old		-0.1052 (0.0758)	-0.1052 (0.0761)		0.1107 (0.0685)	0.1107 (0.0686)
50 to 54 years old		-0.0962 (0.0726)	-0.0962 (0.0729)		0.1335* (0.0730)	0.1335* (0.0732)
55 to 59 years old		-0.0757 (0.0775)	-0.0756 (0.0778)		0.1525** (0.0723)	0.1526** (0.0724)
60 to 64 years old		-0.0747 (0.0766)	-0.0745 (0.0768)		0.1358* (0.0724)	0.1359* (0.0725)
Educational level achieved: (ref. No schooling)						
Elementary school		0.1176 (0.0835)	0.1172 (0.0834)		0.0513 (0.0824)	0.0510 (0.0824)
Middle school		0.1234 (0.0813)	0.1229 (0.0812)		-0.0047 (0.0789)	-0.0053 (0.0789)
High school diploma		0.0983 (0.0821)	0.0978 (0.0820)		-0.0407 (0.0769)	-0.0412 (0.0768)
Tertiary education		0.0389 (0.0803)	0.0384 (0.0803)		-0.0919 (0.0789)	-0.0924 (0.0789)
<i>Spouse characteristics</i>						
Gender: (ref. Male)						
Female		-0.3603*** (0.0173)	-0.3591*** (0.0162)		-0.5988*** (0.0136)	-0.5957*** (0.0142)
Age in class: (ref. 18 to 19 years old)						
20 to 24 years old		-0.4664*** (0.0576)	-0.4685*** (0.0572)		0.2689*** (0.0469)	0.2678*** (0.0465)
25 to 29 years old		-0.4902*** (0.0408)	-0.4927*** (0.0408)		0.2492*** (0.0273)	0.2478*** (0.0267)
30 to 34 years old		-0.4236*** (0.0288)	-0.4261*** (0.0285)		0.2754*** (0.0198)	0.2740*** (0.0185)
35 to 39 years old		-0.4181*** (0.0358)	-0.4206*** (0.0357)		0.2983*** (0.0228)	0.2969*** (0.0212)
40 to 44 years old		-0.4061*** (0.0351)	-0.4086*** (0.0348)		0.3181*** (0.0229)	0.3166*** (0.0216)
45 to 49 years old		-0.3913*** (0.0351)	-0.3937*** (0.0349)		0.3346*** (0.0260)	0.3332*** (0.0247)
50 to 54 years old		-0.3985*** (0.0321)	-0.4009*** (0.0320)		0.3481*** (0.0243)	0.3466*** (0.0230)
55 to 59 years old		-0.3775***	-0.3800***		0.3728***	0.3714***

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**Table B.1:** *Continued from previous page*

	Probability of being overweight of:					
	Household head			Spouse		
	(1)	(2)	(3)	(4)	(5)	(6)
		(0.0361)	(0.0360)		(0.0259)	(0.0246)
60 to 64 years old		-0.3688***	-0.3715***		0.4370***	0.4354***
		(0.0357)	(0.0354)		(0.0316)	(0.0306)
Educational level achieved: (ref. No schooling)						
Elementary school		0.1193	0.1197		0.1489	0.1493
		(0.1024)	(0.1022)		(0.1224)	(0.1225)
Middle school		0.0813	0.0818		0.0613	0.0616
		(0.0949)	(0.0947)		(0.1136)	(0.1137)
High school diploma		0.0439	0.0443		0.0088	0.0090
		(0.0935)	(0.0933)		(0.1124)	(0.1125)
Tertiary education		0.0188	0.0193		-0.0309	-0.0306
		(0.0951)	(0.0948)		(0.1108)	(0.1109)
<i>Family characteristics</i>						
Number of members in household		0.0092***	0.0092***		0.0155***	0.0155***
		(0.0029)	(0.0029)		(0.0018)	(0.0018)
<i>Aggregate characteristics</i>						
GDP per capita (growth rate)			-0.1329			0.0268
			(0.2009)			(0.2907)
Median household income			0.0000			0.0000
			(0.0000)			(0.0000)
Unemployment rate			-0.0027			-0.0041
			(0.0034)			(0.0035)
Region FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
# of observations	33,037	33,037	33,037	33,037	33,037	33,037
# of clusters	20	20	20	20	20	20
$R^2$	0.0128	0.0973	0.0974	0.0057	0.0852	0.0853

Source: Aspects of Daily Life (AVQ).

Notes: \* Significant at 10%, \*\* significant at 5% and \*\*\* significant at 1%. Standard errors robust to heteroskedasticity and within-region correlation are reported in parentheses. Each regression is weighted using population weights. All specifications include region fixed effects and survey year fixed effects. The sample covers the period 2013–2022.

## C Sensitivity analysis

**Table C.1:** Difference in consumption habits for bundles of goods with respect to the regional median (household head)

Probability of consuming more than regional median of:															
Bread and pasta (1)	Lunch meats (2)	Poultry (3)	Beef (4)	Pork (5)	Milk (6)	Cheese and dairy products (7)	Eggs (8)	Fish (9)	Leaf vegetables (10)	Solanaceae vegetables (11)	Fruit (12)	Legumes (13)	Potatoes (14)	Snacks (15)	Sweets (16)
Partner unemployment	-0.0070 (0.0137)	0.0090 (0.0176)	0.0133 (0.0154)	0.0010 (0.0125)	-0.0077 (0.0190)	-0.0101 (0.0196)	0.0033 (0.0169)	0.0345** (0.0121)	0.0001 (0.0098)	-0.0124 (0.0141)	-0.0171 (0.0194)	0.0041 (0.0109)	0.0123 (0.0085)	0.0073 (0.0216)	-0.0130 (0.0197)
# of observations	32,855	32,615	32,797	32,748	32,652	32,672	32,791	29,220	32,821	32,643	32,690	32,713	32,716	32,700	32,725
# of cluster	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
R <sup>2</sup>	0.0139	0.0231	0.0171	0.0156	0.0963	0.0397	0.0203	0.0427	0.0895	0.0583	0.0248	0.181	0.0107	0.0478	0.0834

Source: Aspects of Daily Life (AVQ).

Notes: \* Significant at 10%, \*\* significant at 5% and \*\*\* significant at 1%. Standard errors robust to heteroskedasticity and within-region correlation are reported in parentheses. Each regression is weighted using population weights. Model specifications are the same as in column (3) of Table 1. The sample covers the period 2013–2022.

**Table C.2:** Difference in consumption habits for bundles of goods with respect to the regional median (spouse)

Probability of consuming more than regional median of:															
Bread and pasta (1)	Lunch meats (2)	Poultry (3)	Beef (4)	Pork (5)	Milk (6)	Cheese and dairy products (7)	Eggs (8)	Fish (9)	Leaf vegetables (10)	Solanaceae vegetables (11)	Fruit (12)	Legumes (13)	Potatoes (14)	Snacks (15)	Sweets (16)
Partner unemployment	-0.0053 (0.0171)	-0.0125 (0.0179)	0.0013 (0.0182)	-0.0016 (0.0096)	0.0243 (0.0190)	-0.0078 (0.0192)	-0.0039 (0.0257)	0.0220** (0.0089)	-0.0047 (0.0102)	-0.0143 (0.0112)	-0.0198 (0.0174)	-0.0044 (0.0171)	0.0112 (0.0098)	0.0025 (0.0183)	-0.0002 (0.0189)
# of observations	32,813	32,567	32,759	32,689	32,593	32,672	32,710	29,186	32,778	32,775	32,659	32,714	32,708	32,667	32,703
# of cluster	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
R <sup>2</sup>	0.0160	0.0981	0.0171	0.0843	0.0596	0.0938	0.0175	0.0290	0.0691	0.0283	0.0270	0.174	0.00948	0.0480	0.0955

Source: Aspects of Daily Life (AVQ).

Notes: \* Significant at 10%, \*\* significant at 5% and \*\*\* significant at 1%. Standard errors robust to heteroskedasticity and within-region correlation are reported in parentheses. Each regression is weighted using population weights. Model specifications are the same as in column (6) of Table 1. The sample covers the period 2013–2022.

**Table C.3:** Bias-corrected estimation results using wild-clustering bootstrap

	Probability of being overweight or obese:	
	Household head (1)	Spouse (2)
Partner unemployment	0.0222 [0.3744]	0.0584** [0.0390]
# of observations	33,037	33,037
# of clusters	20	20
$R^2$	0.0974	0.0853

*Source:* Aspects of Daily Life (AVQ).

*Notes:* \* Significant at 10%, \*\* significant at 5% and \*\*\* significant at 1%. Wild-cluster  $p$ -values robust to heteroskedasticity and within-region correlation were obtained by bootstrapping the results 999 times and are reported in brackets. Each regression is weighted using population weights. Model specifications are the same as in columns (3) and (6) of Table 1. The sample covers the period 2013–2022.

**Table C.4: Partner unemployment effects when excluding one region from the sample**

Effect on	Excluded region: Piemonte			Excluded region: Valle d'Aosta			Excluded region: Lombardia			Excluded region: Trentino-Alto Adige			Excluded region: Veneto		
	<i>n</i>	$\beta$	$R^2$	<i>n</i>	$\beta$	$R^2$	<i>n</i>	$\beta$	$R^2$	<i>n</i>	$\beta$	$R^2$	<i>n</i>	$\beta$	$R^2$
Partner unemployment															
Household head	30,382	0.0170 (0.0226)	0.0984	32,075	0.0221 (0.0222)	0.0974	29,305	0.0268 (0.0245)	0.0954	30,307	0.0222 (0.0223)	0.0977	30,583	0.0187 (0.0228)	0.0999
Spouse	30,382	0.0607** (0.0226)	0.0850	32,075	0.0587** (0.0214)	0.0853	29,305	0.0487** (0.0225)	0.0856	30,307	0.0598** (0.0214)	0.0860	30,583	0.0537** (0.0223)	0.0858
Effect on															
Partner unemployment															
Household head	31,545	0.0216 (0.0225)	0.0978	31,739	0.0211 (0.0223)	0.0967	30,666	0.0191 (0.0229)	0.0977	30,891	0.0220 (0.0234)	0.0987	32,016	0.0245 (0.0224)	0.0979
Spouse	31,545	0.0616*** (0.0213)	0.0859	31,739	0.0585** (0.0219)	0.0855	30,666	0.0500** (0.0213)	0.0860	30,891	0.0680*** (0.0190)	0.0833	32,016	0.0604** (0.0214)	0.0858
Effect on															
Partner unemployment															
Household head	31,529	0.0252 (0.0239)	0.0980	31,215	0.0188 (0.0242)	0.0974	31,864	0.0205 (0.0225)	0.0973	32,267	0.0226 (0.0223)	0.0972	31,573	0.0102 (0.0213)	0.0943
Spouse	31,529	0.0641*** (0.0210)	0.0856	31,215	0.0559** (0.0235)	0.0841	31,864	0.0552** (0.0223)	0.0856	32,267	0.0601** (0.0214)	0.0853	31,573	0.0553** (0.0252)	0.0846
Effect on															
Partner unemployment															
Household head	31,782	0.0224 (0.0239)	0.0975	32,284	0.0227 (0.0225)	0.0974	31,938	0.0243 (0.0237)	0.0970	31,746	0.0422** (0.0163)	0.0968	31,996	0.0189 (0.0222)	0.0977
Spouse	31,782	0.0573** (0.0236)	0.0856	32,284	0.0588** (0.0217)	0.0853	31,938	0.0627** (0.0223)	0.0856	31,746	0.0505* (0.0243)	0.0856	31,996	0.0660*** (0.0202)	0.0852

Source: Aspects of Daily Life (AVQ).

Notes: \* Significant at 10%, \*\* significant at 5% and \*\*\* significant at 1%. Standard errors robust to heteroskedasticity and within-region correlation are reported in parentheses. Each regression is weighted using population weights. Model specifications are the same as in column (3) of Table 1. The sample covers the period 2013–2022.

**Table C.5: Partner unemployment effects when excluding one wave from the sample**

Effect on	Excluded wave: 2013			Excluded wave: 2014			Excluded wave: 2015			Excluded wave: 2016			Excluded wave: 2017		
	<i>n</i>	$\beta$	$R^2$	<i>n</i>	$\beta$	$R^2$	<i>n</i>	$\beta$	$R^2$	<i>n</i>	$\beta$	$R^2$	<i>n</i>	$\beta$	$R^2$
Partner unemployment															
Household head	29,668	0.0190 (0.0223)	0.0968	29,717	0.0174 (0.0227)	0.0979	29,686	0.0079 (0.0259)	0.0952	29,837	0.0285 (0.0244)	0.0952	29,427	0.0173 (0.0264)	0.0994
Spouse	29,668	0.0656** (0.0231)	0.0852	29,717	0.0462* (0.0257)	0.0856	29,686	0.0581** (0.0249)	0.0858	29,837	0.0652*** (0.0224)	0.0852	29,427	0.0698*** (0.0213)	0.0862
Effect on															
Partner unemployment															
Household head	29,669	0.0243 (0.0202)	0.0970	29,686	0.0255 (0.0230)	0.0997	29,930	0.0188 (0.0216)	0.0986	29,775	0.0212 (0.0221)	0.0978	29,938	0.0412* (0.0224)	0.0980
Spouse	29,669	0.0673*** (0.0217)	0.0849	29,686	0.0573** (0.0213)	0.0863	29,930	0.0481** (0.0210)	0.0841	29,775	0.0573** (0.0219)	0.0854	29,938	0.0472** (0.0203)	0.0854

Source: Aspects of Daily Life (AVQ).

Notes: \* Significant at 10%, \*\* significant at 5% and \*\*\* significant at 1%. Standard errors robust to heteroskedasticity and within-region correlation are reported in parentheses. Each regression is weighted using population weights. Model specifications are the same as in column (3) of Table 1. The sample covers the period 2013–2022.

**Table C.6:** Effect of partner non-occupation on dietary habits

	Probability of being overweight or obese:	
	Household head (1)	Spouse (2)
Partner non-occupation	0.0143 (0.0113)	0.0237** (0.0112)
# of observations	41,918	41,918
# of clusters	20	20
$R^2$	0.0964	0.0801

*Source:* Aspects of Daily Life (AVQ).

*Notes:* \* Significant at 10%, \*\* significant at 5% and \*\*\* significant at 1%. Standard errors robust to heteroskedasticity and within-region correlation are reported in parentheses. Each regression is weighted using population weights. Model specifications are the same as in columns (3) and (6) of Table 1. The sample covers the period 2013–2022.