The European Journal of Public Health, Vol. 30, No. 6, 1181–1186

doi:10.1093/eurpub/ckaa157 Advance Access published on 3 September 2020

Maintaining everyday life praxis in the time of COVID-19 pandemic measures (ELP-COVID-19 survey)

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Background: The extreme social circumstances caused by declared COVID-19 pandemic deeply intervene people's everyday life and should not be neglected but seen through the view of social reality pinpointing the 'ordinary' people. In this article, authors explored basic segments of everyday and their subjective perception to what extent sleeping habits, physical inactivity, physical activity, nutritional habits and smoking have changed. **Methods:** The online survey was conducted in nine European countries (Bosnia and Herzegovina, Croatia, Greece, Kosovo*, Italy, Serbia, Slovakia, Slovenia and Spain) in 4108 participants, aged 15–82 years. The survey took place 30–40 days after World Health Organization declared COVID-19 pandemic state, from 15 April to 3 May 2020. **Results:** The results have shown 30 min longer sleeping time, 50% longer physical inactivity time, 65% longer screen time, 43% shorter walking time, 24% shorter sport time and 37% longer physical work time. Additionally, body mass gains (0.3 kg) could be explained in 20.6% with meals sizes, unhealthy food consumption, screen time and sport time. Further, respondents reported more regular meals (44%) and healthier meals with less alcohol consumption and less smoking, which have been positive outcomes of home confinement. **Conclusion:** The findings draw attention to negative changes in everyday praxis (inactivity, body mass gain) after such a short period. Because of possible risk to population's health (especially of countries such as Italy and Spain with serious threat and more stringent measures), findings enable development of recommendations for maintaining healthy lifestyle habits with minimal negative health consequences in similar pandemic circumstances.

Introduction

The term 'everyday life' in social sciences has long been considered trivial, platitude and therefore irrelevant for 'serious' research,[1,2] its main purpose being to 'capture life as it is lived'[3] within few common denominators: the exposure of regular, repetitive phenomena and situations should be exposed. That is why research concerning everyday life should not be neglected as the view of social reality that pinpoints the 'ordinary' people and how they subjectively perceive their own and other's actions. Therefore, in the research of everyday life, one should emphasize 'the inevitability of an individual actor as an analytical focus'.[4] Lifestyles as 'relatively coherent sets of material and symbolic practices in everyday life' are to some extent the creators of people's personal identity. This is reflected, among other things, in eating habits, sleeping habits, sports and recreational activities, body care, free time habits, forms of sociality, cultural consumption etc.[5,6] In this article, we explored basic segments of everyday life in extraordinary/extreme social circumstances, during the Coronavirus disease /COVID-19 pandemic, declared as global health outbreak by the representatives of the World Health Organization on 11 March 2020. Each country has adopted its own precautionary measures either strict or mild, for their citizens during the pandemic they undoubtedly had on everyday life of citizens. These measures affected all segments of everyday life; the way the active population works (e.g. work from home wherever possible), the closure of kindergartens, schools, colleges and dormitories imposed (home schooling), the ban on visits to the elderly in homes as well as lockdown public life (public transport, cultural events and non-essential consumer services). The daily life was suddenly concentrated on home and screen media connections.

Having in mind, the described features of everyday life on one hand and the COVID-19 pandemic measures on the other, the focus of this article is on everyday life of citizens of nine European countries during the COVID-19 epidemic. Due to specific and unique circumstance social actors have lived in, we searched for and found limited evidence of research on effect of safety measures and restrictions (home confinement) in general everyday life praxis. The importance to investigate sleeping habits, physical activity (PA), eating habits and sedentary behaviour is to find out how people can be affected by restrictive measurements and what can we recommend

to people how to adapt better to the new situation in terms of health-oriented lifestyle.

Recent evidence showed that COVID-19 pandemic home confinement together with restricted or prohibited physical participation (schools, sport events and sports clubs' activities lockdown) imposed increasing risk of sedentary behaviours or level of inactivity.[7,8] Just a few days of sedentary lifestyle are sufficient to induce a lot of negative physiological adaptations of the human body.[9,10] Along the negative effect on PA, COVID-19 pandemic state has impact on diet behavior.[11] Feeling forced to stay indoors (public life lockdown, quarantine) could be considered as psychological risk factor for consuming more quantities of food of poorer quality compared with standard living conditions. This induced changes in nutrition habits and challenged the energy balance proportions resulting in gaining weight.[12]

In addition to PA and balanced food habits, the appropriate sleeping habits have changed. When individual habits and quality of one's own sleep change during life, it may significantly contribute to alterations in people's healthy lifestyle. Psychosocial stressors may affect sleep indirectly through unhealthy behaviours such as poor diet, lack of PA, increased sedentary behaviours, or other diseases such as diabetes, hypertension or depressive symptoms.[13–15] On the other hand, getting enough sleep improves appetite and functioning of the immune system.[16]

Concerning the situation people faced in COVID-19 pandemic, we hypothesized that 'Lefebvre' attitude[17] which states that individuals and groups live their everyday life according to the principle of ambiguity, simply does not apply in the conditions of the COVID-19 crisis. It means that everyday life praxis changed and that the adaptation of everyday life praxis to the new situation was necessary. Certain features of everyday life that we highlighted in the survey were ways of spending time during the day, with special emphasis on adjusting sleeping habits, eating habits, ways of expressing PA and inactivity time (with emphasis on screen time) of respondents.

Although conducting the research, we tried to determine whether and (if so) to what extent above mentioned behaviour of the respondents have changed, and what connections the possible changes have to do with the recommended measures in the state COVID-19 pandemic. Following these, the main research question is 'Are there any changes in everyday life praxis of sleeping, PA and inactivity behaviours, and eating habits that occurred during the COVID–19 pandemic restriction?'

Methods

A cross-sectional comparative study was conducted in nine European countries (Bosnia and Herzegovina, Croatia, Greece, Kosovo*/The final political status of Kosovo is not prejudiced in this paper, Italy, Serbia, Slovakia, Slovenia and Spai) with an aim to observe and analyze some of everyday life praxes in the time of COVID-19 restrictions in comparison with the time before the outbreak of COVID-19 pandemic. ELP (Everyday life praxis) COVID-19 consortium of six partners from Science and Research Centre Koper (Slovenia), Faculties of sport, University of Novi Sad (Serbia), University of Palermo (Italy), University of Zagreb (Croatia), University of Prešov (Slovakia) and University of Cadiz (Spain) has been established to identify determinants of common everyday life routines: sleeping habits, inactivity with screen time, ways of PA and eating habits in a new questionnaire.

Due to physical restrictions, the online survey was one of very few possibilities to reach as many respondents as possible. The snowballing approach was used for recruitment of participants 15 years of age and above. The survey questions were formed in 1KA, an open source application that enables services for online surveys, developed by the Centre for Social Informatics, at the Faculty of Social Sciences, University of Ljubljana, Slovenia (https://www.1ka.si/d/en/about/general-description).

The basic form of questionnaire was officially translated into eight different languages and re-translated in English by each partner to check the relevance of translations. Before the open access of online survey was launched, a test of online questionnaire on at least six participants per country was provided by research group to assure correctness and understanding. Data collection lasted 14 days, from 15 to 28 April 2020, with exception of Kosovo* where it lasted 10 days, from 24 April to 3 May 2020 and Greece for 6 days from 28 April to 3 May 2020. The current cross-sectional study followed the STROBE statement.[18]

Survey participants were invited through different ways: personal e-mail addresses, official pages of the partners organizations, local online newspapers etc. By clicking on the survey, the presentation of the main purpose with detailed instructions to fill the survey in was provided. Participants were also informed that all data will be processed and managed in accordance with the legislation on the protection of personal data and the General Data Protection Regulation. Participant's responses were anonymous and confidential according to 1KA (on https://www.1ka.si/d/en/help/manuals/gdpr-and-data-collection), and survey did not collect any personal data (names, birth date and contact information) to enable the respondent's identification. The participants were able to leave the questionnaire at any stage before the submission process. Only surveys with completed mandatory questions were taken into further analysis.

New questionnaire 'ELP in the time of COVID-19 pandemic restriction' (ELP COVID-19 study) was made in English language for additional translation. The questionnaire consists of 24 questions and provides the adapted parts of validated questionnaires. The part of validated SIMPAQ—Simple Physical Activity Questionnaire[19] was adapted to collect data on sleeping time, PA, inactivity time as 'time before COVID-19 pandemic' (BDC) and time 'during COVID-19 pandemic measures' (DDC).

Besides the SIMPAQ, additional questions and scales to assess eating habits and indicators of quality of life were taken from European Health Interview Survey, (National institute for public health in Slovenia, 2007). In the view of this, we approached the research with the following research questions: What changes occurred in daily praxis (in everyday life) regarding the new situation of COVID-19 pandemic measures ('BDC and DDC measures'):

i. in sleeping habits 'time to go to bed', 'time to wake up', 'sleeping time';
ii. 'inactivity time' and 'screen time'
iii. 'time of walking', 'sports PA' and 'physical work habits'.

Being one of the most important life basic needs, the provision of food and related eating habits were additional variables investigated in this research. First, we would like to know whether changes in everyday life also had effect on gaining and reducing body weight and whether changes occurred on some indicators of eating habits. Participants were asked to estimate: (i) precisely the change (in kg) if they regularly monitor their body weight, or if they don't, to estimate of weight changes: 'my body weight. . .1—decreased a lot; 2—decreased a little; 3—stays the same; 4—increased a little; 5—increased a lot'(during the 1 month of pandemic restrictions time).

Additionally, the changes in eating and other health related habits (alcohol and tobacco consumption) were collected by estimating of variables: 'regular meals', 'meal size' (quantity), 'unhealthy food (sweets, fast food) consumption', 'alcohol consumption', 'smoking habits' with the scale: 1— much less, 2— less, 3— stays the same, 4— a little more, 5— much more, 6—can't estimate and 7—not applicable (for alcohol and smoking). Due to the open online availability of the survey we were aware that survey will not reach less educated, less affluent people, men and older people, not skilled or equipped with information technology (IT) and we take a risk of non-representative sample.

Data were analyzed using software of STATISTIKA (version 13.0, TIBCO, USA) and SPSS (version 24.0, IBM, USA). All data were presented as mean (standard deviation) values. Data were grouped for nine countries and time before and after COVID-19 pandemic measures and checked for normal distribution (Histogram, Q–Q plot, Skewness, Kurtosis and Shapiro–Wilk test) and homogeneity of variance (Levene test) were met. The multivariate difference in all 12 everyday praxis variables were tested by multivariate Hotelling's T^2 test,[20]), while differences in each variable was tested by two-way ANalysis Of VAriance/ANOVA (time and country) at statistical significance of $P < 0.01$ and after Bonferroni correction P values was accepted as $P < 0.0008$. A Multiple Linear Regression was used to identify significant predictors of body mass changes, where predictors passed also non-multicollinearity assumptions (variance inflation factor < 2). Additionally, we presented frequency analysis of changes in eating habits, alcohol consumption and smoking in supplementary file. For that purpose, only subjects that responded from 1 to 5 on a 5-point Likert scale were analyzed: 1—much less, 2—less, 3—the same, 4—little more, and 5—much more. Although those that indicated 6—cannot estimate or 7—not applicable were excluded.

Results

The sample consisted of respondents of 9 European countries [$n = 4108$, male = 1527 (37.2%), age 32.0 (13.2), ranged from 15 to 82 years; table 1, see Supplementary table S1 for details description of study sample]. Most of the respondents were between 21 and 30 years (44.4%), and representing the active population [employed or self-employed (46.5%) and students (46.7%)]. Education level of the sample is quite high, majority exceed the secondary level, probably because the primary channel of online destinations was among students and university workers. Respondents answered the survey in the period of 34.6 (7.0) days after the state governments declared Pandemic measures, in the period when most changes could become latent.

Everyday life praxis, primarily sleeping and eating habits and PA behaviours as regular, repetitive phenomena were interrupted by sudden changes of COVID-19 pandemic lockdown of public life, and transportation with strict restriction of movement and recommended mantra 'stay at home'. Consequences after a month of the newly introduced state showed that social reality from the position of 'ordinary' people and subjective meaning of 'new' everyday life has changed significantly.

The multivariate Hotelling's T^2 test confirmed differences in 12 main variables related to everyday praxis ($P < 0.001$). Additionally, *post-hoc* analysis in 12 variables indicated changes in sleeping habits, physical inactivity with screen time and PA habits.

Table 1 The characteristics of the sample for each country (see details in Supplementary table S1)

	Total respondents		Male population		Age
Country	*n*	%	*n*	%	Mean (SD)
Slovenia	445	10.8	117	26.3	42.1 (14.9)
Croatia	1646	40.1	545	37.9	31.2 (12.4)
Italia	512	12.5	258	50.4	29.7 (11.0)
Serbia	366	8.9	183	50.3	30.2 (12.7)
Slovakia	530	12.9	112	21.1	28.5 (11.1)
Spain	313	7.6	157	50.2	31.3 (13.1)
Greece	97	2.4	50	51.6	42.3 (16.6)
Bosnia and Herzegovina	92	2.2	33	36.0	33.5 (11.6)
Kosovo*	107	2.6	42	39.2	30.6 (11.3)
Total	4108	100	1497	36.4	32.0 (13.2)

Sleeping habits

There was a visible difference in all scores of nine countries in sleeping habits in 'go to bed' time [M_{BDC} = 23.4 (1.2) vs. M_{DDC} = 24.5 (1.7) o'clock; $P < 0.0008$], in 'wake up' time [M_{BDC} = 7.2 (1.3) vs. M_{DDC} = 8.7 (1.3) o'clock; $P < 0.0008$] and sleeping time [$M_{BDC} = 7.6$ (1.2) vs. $M_{DDC} = 8.1$ (1.3) h; $P < 0.0008$]. In summary, during the COVID-19 pandemic measures participants went to bed a 1.0 (1.5) h later, woke up 1.4 (1.6) h later and consequently slept 0.5 (1.4) h longer (figure 1A). *Post-hoc* analysis confirmed increase in sleeping time in all countries, except Italy.

Physical inactivity with screen time

During COVID-19 pandemic measures, participants spent 50% more time in physical inactivity [M_{BDC} = 5.6 (3.5) vs. M_{DDC} = 8.4 (3.9) h; $P < 0.0008$] and had 65% longer screen time [M_{DDC} = 4.9 (2.3) vs. M_{BDC} = 8.1 (3.7) h; $P < 0.0008$]. *Post-hoc* analysis indicated increased physical inactivity and screen time in all countries (figure 1B and C). The increase in physical inactivity is closely related to increased screen time, such as TV, smart phone, computer or tablet.

PA behaviour

During COVID-19 pandemic measures daily walking decreased for 43% [M_{BDC} = 116.6 (98.8) vs. M_{DDC} = 66.0 (78.9) min; $P < 0.0008$], sports activities decreased for 24% [M_{BDC} = 79.9 (86.2) vs. M_{DDC} = 60.8 (67.4) min, $P < 0.0008$]; However, daily physical work increased for 37% [M_{BDC} = 38.7 (71.2) vs. M_{DDC} = 52.9 (83.0) min; $P < 0.0008$]. *Post-hoc* analysis revealed that walking time decreased in all countries except Slovenia (figure 1D). The time spent in sport activities decreased in majority of countries, except in Slovenia, Slovakia and Kosovo (figure 1E); and the time spent in physical working (e.g. gardening) increased also in majority of countries, except in Italy, Spain and Greece (figure 1F).

Eating habits

First, we analyzed body mass adaptation and found that participants that monitored their body mass ($n = 2208$) had an increase for 0.3 (2.2) kg during COVID-19 pandemic measures ($P < 0.0008$). Those who did not use scale regularly ($n = 1746$) reported subjective change on 5-point Likert scale [3.31 (0.74); $P < 0.0008$], being between 'stays the same' and 'gain a little'; however, results again indicate gaining body mass ($P < 0.0008$). To explain body mass gains in a subsample of 2208 participants that reported exact body mass changes we used multiple linear regression and found that the model explained 20.6% of body mass change variance ($P < 0.001$) with increased meal sizes, unhealthy eating, increased screen time and decreased sport time during COVID-19 restriction measures (table 2).

When comparing eating habits during COVID-19 restriction measures with those prior to restriction, we found more regular meals, larger meal sizes, less unhealthy food, lower alcohol and tobacco consumption (figure 2). Descriptive analysis is presented in Supplementary figure S1, where we found that 44% of the participants adopted eating habits with more regular meals, whereas 16% had fewer regular meals. Further, 29% of the participants enlarged meal size, whereas 20% of them decreased meal size. Unhealthy food consumption was increased in 33% of respondents, whereas 35% reported a decrease. Unexpectedly, increase of the alcohol consumption and smoking behaviour were reported in <10% of the participants, while at the same time 36% drink and 14% smoke less or much less than before.

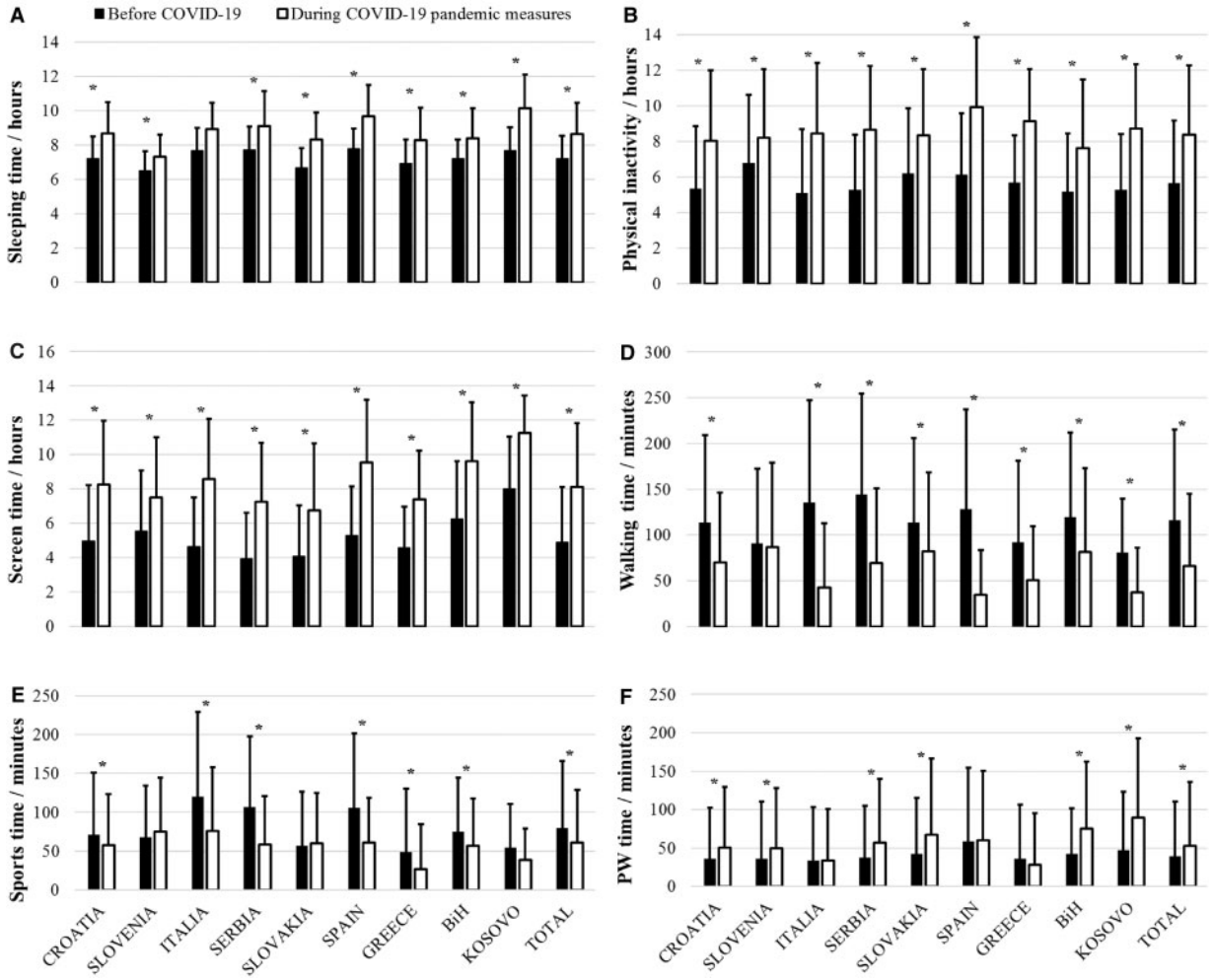

Figure 1 Comparison of (A) sleeping time, (B) physical inactivity, (C) screen time, (D) walking time, (E) sport time and (F) physical work time before and during COVID-19 pandemic measures

Table 2 Multiple linear regression of body mass gains in a subsample of 2208 participants

Variables	*B*	*β*	Partial *r*	VIF	*P*-value
Constant	−3.385				
Meal size	0.845	0.339	0.332	1.168	<0.001
Unhealthy food	0.330	0.183	0.167	1.192	<0.001
Screen time	0.031	0.052	0.051	1.022	0.006
Sport time	−0.002	−0.046	−0.050	1.034	0.017

VIF, Variance Inflation Factor.

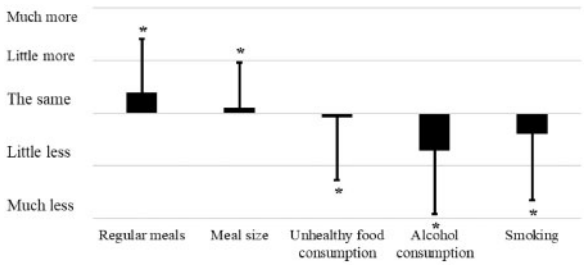

Figure 2 Changes of food, alcohol and smoking consumption during COVID-19 restriction measures from before (see details in supplementary figure S1)

Discussion

The results of this study focus on the changes in everyday life praxis after 30–40 days of COVID-19 restriction measures. We found marginal changes in all studied everyday life praxis. Participants reported 0.5 h longer sleeping time, 50% longer physical inactivity most likely due to 65% longer screen time, whereas walking time decreased for 43%, sport time decreased for 24% and physical work time decreased for 37%. Abovementioned changes were consistent in almost all countries, with some exceptions, which will be discussed below.

Going to bed half an hour after midnight and later waking up times were probably the effect of home confinement since people needed to compensate for having to organize working and schooling from home, which allowed a bit looser timetable. The results could be reported in two ways, the later bedtime could be related with increased screen time and physical inactivity or poor diet,[13–15] but on the other hand, people who used home confinement and got sufficient sleep could improve appetite and immune system functioning.[16]

The increased time of physical inactivity and on the other side the decrease of all studied phenotypes of PA have been confirmed also by other studies reporting PA levels during COVID-19 pandemic.[8,10,11] Because of emphasized serious negative physiological effect on human body caused by physical inactivity and sedentary behaviour, these can be disruptive also to disease parameters (i.e. rheumatic diseases), cardiovascular risk profile, physical capacity and function, and mental health.[21–23]

Indeed, we determined decrease in daily levels of PA (walking and sports), with an exception in Slovenia and Slovakia where reported slightly increase of sports engagement (3–6 min/day) probably because of less strict movement restriction posed by government and additional free time. On the other hand, we were determined the increase in physical work in some countries that could be explained by additional 'free time', nice spring weather and typical tasks at home (e.g. house repairs, gardening), with exception of decrease in all level of PA in Italy, Spain and Greece where government imposed most strictly measures of movement. We assume that the estimated differences in level of PA depend on the level of COVID-19 measurements (quarantine, movement restriction and curfew) or additional analysis should be made on correlation of country's specific cultural tradition or habits. Nevertheless, the reported results show that after 34–40 days of restrictive measures, people observed mostly negative differences in PA behaviour and that is a problem that should be highlighted.

Regarding the body mass, we found the increase of 0.3 kg of those who monitored and was similar to those that reported their subjective estimates towards gaining a little weight. We found that body mass gains could be explained in 20.6% with meals sizes, unhealthy food consumption, screen time and sport time. Indeed, we found increased meal sizes, higher screen time and lower sport time during COVID-19 restriction measures, which was also reported by Butler and Barrientos (2020), but in opposite participants reported more regular meals and less unhealthy food consumption. The latter was found to be in contradiction with Butler and Barrientos (2020) and Ammar *et al.*[11]; however, the changes we reported were rather small but significant. Alcohol consumption and smoking decline could be explained by severe restrictions in order to control the pandemic outbreak reflected in social life and the accompanied social habits, drinking and smoking (especially in young people).

Despite all professional recommendations in mass media how to stay healthy and active in the time of quarantine, declines of PA levels with large increases in physical inactivity were reported. Consequently, the most evident change in the study was in physical inactivity and screen time which increased for ∼3 h, where physical inactivity reached above the threshold area (6–8 h daily). It is already known that sedentary lifestyle is one of the strongest factors for increasing risk of disease or mortality,[24–27] going along with increased screen time.

The strength of this research is to include a standardized survey in nine European countries which enables a broader insight into the research question. Some limitations and bias were mentioned above and coincide with the characteristics of participants of online surveys while more educated and more affluent people, women and younger people are more likely to participate, what Smith[27]confirmed. On the other hand, we are aware that online surveys bypass the vulnerable groups who are not skilled or equipped with IT.

Nevertheless, the results of the survey clearly indicate significant differences in some important everyday life praxis (sleep, sedentary and PA behaviour and eating habits) and regarding the countries state of threat, because the results imply that the problem of especially increased inactivity (sedentary behaviour with screen time) and opposite decline of PA became legitimate as people were unable to adequately maintain their ordinary PA patterns during the pandemic restriction.

Additionally, the new ways (probably with IT tools) to maintain a more optimal PA as regular low/medium intensity volume exercise, also in the time pandemic restriction, together with a 15–25% reduction in caloric intake have to be promoted in order to preserve neuromuscular, cardiovascular, metabolic and endocrine health.[10] The findings definitely impose the need to draw attention to the negative changes in everyday practices and their risk to the health of population, which was evident in the more endangered countries (Italy and Spain) with stricter measures on everyday life (quarantine and movement restriction). Consequently the perspective of this 'ELP COVID-19 study' is also to target the extent of effect of pandemic measure in each country following the demographic characteristics. Knowing the specific reaction in adopting the 'new normality' by participated countries will enable us to prepare recommendations for positive outcomes in similar situations with minimal consequences to health of population.

Supplementary data

Supplementary data are available at *EURPUB* online.

Conflicts of interest: None declared.

Key points

- During COVID-19 pandemics, respondents increased physical inactivity (for 50%) and screen time (for 65%).
- The study showed increased the sleeping and physical work (daily tasks).
- The reduced time for physical activity (waking, sports) resulted in an overall weight gain.
- The results from this study can advise public health policy representatives when developing and implementing recommendations for maintaining healthy lifestyle habits with minimal negative health consequences in extreme daily life context, such as COVID-19 pandemic.

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The European Journal of Public Health, Vol. 30, No. 6, 1186–1188

doi:10.1093/eurpub/ckaa205 Advance Access published on 29 October 2020

Health care for undocumented immigrants during the early phase of the Covid-19 pandemic in Lombardy, Italy

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Despite concern on the impact of coronavirus disease 2019 (COVID-19) pandemic on undocumented immigrants, quantitative evidence on the issue is scant. We analyze socioeconomic and health conditions of 1590 undocumented immigrants in Milan, Lombardy, one of the regions with the highest COVID-19 clinical burden in the world that does not guarantee access to primary care for these individuals. We document a sharp reduction in visit number after lockdown, with 16% frequency of acute respiratory infections, compatible with COVID-19. Moreover, housing conditions make it difficult to implement public health measures. Results suggest the need to foster primary care by undocumented immigrants to face COVID-19 emergency.

Introduction

There is increasing concern that the coronavirus disease 2019 (COVID-19) pandemic is affecting individuals unevenly across socioeconomic conditions,[1,2] ethnicity,[2,3] and legal statuses.[4] However, the latter has been addressed mainly for the North American context,[4–6] and data on the issue are scant. This study thus provides new evidence on access to, and reasons of, medical visits of a sample of 1590 undocumented migrants in Milan, during the emergency due to COVID-19.

Milan, the second-largest Italian city (1.4 million inhabitants–3.2 million in the Metropolitan Area) and capital of Lombardy, offers a compelling case. In the Metropolitan Area of Milan, there are around 540 000 immigrants, 9.5% of which are undocumented, originating mainly from Egypt, Peru, Philippines, China and Morocco. Lombardy, where the first Italian case was detected on 20 February 2020, during the period of analysis experienced one of the highest COVID-19 clinical burdens in the world.[7] Although, according to the Italian law, undocumented immigrants have the right to access to the National Healthcare Service (NHS), the implementation of the law differs across regions. In particular, Lombardy does not provide primary care to undocumented migrants and, since general practitioners (GPs) act as gatekeepers to more specialized care, they can only access the NHS through emergency departments. In Milan, primary care to undocumented migrants is left to non-governmental organizations (NGOs).

Naga is one of those organizations. Based in Milan since 1987, it offers free primary health care to undocumented immigrants, Rom and Sinti. The association, which does not discriminate against immigrants in any way, makes about 10 000 medical visits a year.