Article title: Effect of lockdown on activities of daily living in built environment and well-being
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(1) The statement about vaccines and treatment has been modified (2) Work-related has been elaborated (3) Both positive and negative correlations have been addressed (4) Limitations of R2 and the caveat in interpretation have been elaborated (5) Correction to Table 2 has been made (6) Table 1a has been renamed Table 1 and Table 1b has been presented as running text in the body (7) Details made in comment 7 have been addressed, by altering the text in the body (8) Explanations were provided for 'Energy, pep or vitality and Feel healthy to work ' (9) Reduction of time and distance from home to workplace has been mentioned in "Built environment and Work from Home (WfH)" section. (10) The repeated sentence in the 'Conclusion' has been removed

Reviewer: Anna Mavrogianni

(1) The comment and suggestions on interpretation of R2 have been addressed (2) Numerical results have been provided in the abstract

Effect of lockdown on activities of daily living in built environment and well-being

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Abstract

In an effort to arrest the spread of COVID-19 infection, a nation-wide lockdown was declared in India in March 2020. To assess how personal built environment affected the citizens in the first few weeks, an explorative online survey was conducted, eliciting responses about the work habits before the lockdown, the psychological well-being, time spent in various activities, characteristics of those who worked from home, food and sleep patterns. We received 121 (76 male and 45 female) responses with an average age of 35.5 years (Max: 70, Min: 18, SD: 12.9). The major difference entailed by the lockdown was a reduction of time and distance of one commute to go to their workplace, which was an average of 30 minutes and 9.5 km respectively. In terms of diet, subjects who were vegetarian did not experience any difference, unlike those who were non-vegetarians ($p<0.05$). The result show an association of dependent variable of "feeling in general" with predictor variables of "energy, pep, vitality" and "feel healthy to work" during the pandemic situation, whereas the predictor variables of "energy, pep, vitality", "happy and satisfied personal life", "feel healthy to work" show association with dependent variable of "feeling in general" before lockdown with a significance of $p<0.02$ and $R^2 = 0.51$ and $R^2=0.60$ respectively. Among those who worked from home in constrained environments, people could find spaces and seem to adapt reasonably to built environment with employees showing preference working from bedrooms and students working from sitout spaces ($p<0.05$) . There was no change in the quality or quantity of sleep during the lockdown. This study in the early weeks of the lockdown documents the way in which individuals lived through it in terms of the built environment at home.

Introduction:

The coronavirus (Covid-19) epidemic, identified at the turn of 2020 has an ability to spread by droplet transmission. In the initial phase of the pandemic, when the study was carried out, the only measures to reduce the transmission consisted of physical distancing, frequent washing of hands with soap and water, and avoiding touching the face. They form the core preventive measures even after the availability of vaccines and potential medicines to treat the infection. Though the physical measures are simple to itemize, it is difficult to implement. In an attempt to prevent community spread of infection, India imposed a

lockdown, beginning on 22nd March 2020. Depending on the situation, the lockdown has been modified over the course of time.

The uncertainty about the disease coupled with lockdown across the nation led to a stressful situation for the common good. It is understandable that apprehension and anxiety could result from being lonely due to social isolation, fear of being infected, economic impact and uncertainty about the future course (1). A report that compared psychological distress and loneliness in 2018 and in April 2020 showed that the prevalence of serious psychological distress increased three-fold in April 2020 (1).

Following the outbreak of Covid-19, a number of studies were published on knowledge, attitude and practices (KAP) about the condition from across the world, including different parts of India (2,3,4).

Built environment, refers to ''environments that are modified by humans, including homes, schools, workplaces, highways, urban sprawl, accessibility to amenities, leisure and pollution (5). It is conceivable that the response to the pandemic and measures to slow its spread can be modified by built environment. To our knowledge, there have not been any studies evaluating the effect of built environment on daily living and psychological stress during the lockdown. A report from Brazil studied the spatial correlation between the incidence of Covid-19 and human development (6). Doshi et al reported that fear about Covid-19 was low due to lack of knowledge, although women, lower educational status and being a healthcare worker were associated with higher fear levels (7). In situations such as these, physical interviewing is neither feasible nor desirable. Earlier studies have shown that social media platforms can be employed to recruit as well as to communicate about Covid in both developed and developing countries (8,9). Therefore we have conducted an online survey to assess the effect during the early weeks of lockdown on living habits, attitudes and other aspects influenced by the built environment.

The twin aims of the study is to evaluate how activities of daily living (ADL) have a bearing on well-being during lockdown and how spaces at home support ADL during the "stay home stay safe" strategy. The research questions we attempt to address are (A) Is there a perceptual change in wellbeing during lockdown to that of before lockdown? (B) As a health concern, are there any changes in food habits and rest/sleep? (C) How do people accomplish their responsibilities of work/study?

Methods:

The second phase of lockdown beginning 15th April 2020 till 03rd May 2020 had stringent restrictions of "stay home" with 3-4 hours of relaxation in the morning to take home essential commodities. A structured questionnaire was developed covering different sections in sequence, namely demographics, food intake, activities of daily living, built environment (specifically homes), leisure and entertainment, and health and wellbeing.

This self-reported questionnaire survey designed in Google forms (available in Appendix at the end of the manuscript) was administered online from 19th April 2020 to 07th May 2020, i.e. during and beyond 4 days of the second phase of lockdown (Figure-1). The online questionnaire was circulated to the contacts of the authors by online social media.

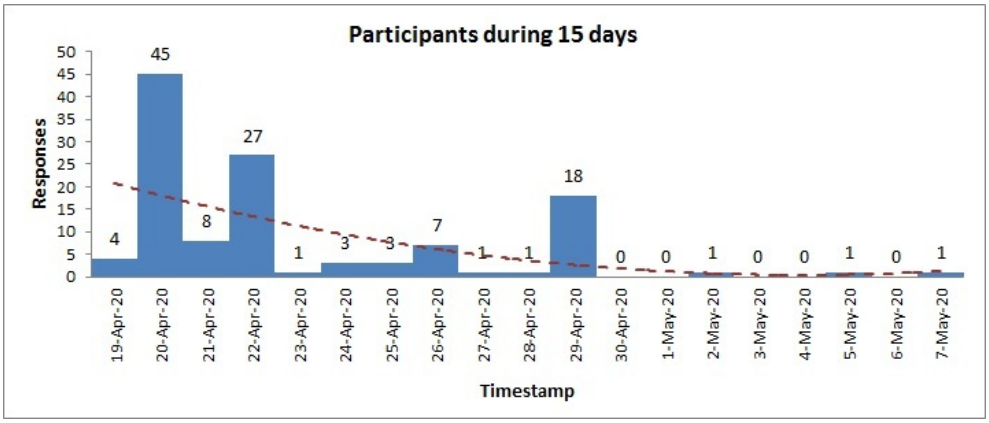

Figure 1: Duration of online survey

The section of Demographics has data pertaining to Age, Gender, Height, Weight, Marital status, Education and Employment. The Food intake section is related to information on changes of intake in principal meals and any change in intake of vegetarian and non-vegetarian food items. Information of activities of daily living covered day-to-day tasks. Questions on the Built environment section related to where their residence is located (area, floor level), type of house (rented/owned, individual/apartment etc.), what spaces do they have and where they spent most of the time during lockdown. Watching television and spending time with family at home being common leisure and entertainment activities, questions were included on the preferences of channels like movies, sports, education, spiritual, serials/drama, music, environment and news. Lastly the section on health and well-being relate to whether they are taking any medication along with six questions on well-being (Feeling in general; Energy, pep or vitality; Feel any tension; Happy, satisfied or pleased with personal life; Feel healthy enough and Concerned or worried about health and well-being). Following the objectives of the study, the wellbeing of the subjects is assessed for the activities of daily living (ADL) and how spaces at home support them using linear regression.

Statistical analysis

Of the 121 responses received, there is considerable demographic representation of age, gender, food habits and profession (Table-1). For a mean age of 35.5 years (Max: 70.0; Min: 18.0; SD: 12.9) the mean Body Mass Index (BMI), a physiological parameter is 26.3 (Max: 49.9; Min: 15.7; SD: 4.6).

Table-1: Details of responses by gender, food habits and profession

	Gender		Food Habits		Profession		
	Male	Female	Vegetarian	Non-vegetarian	Employee	Student	Home based
Percentage	63%	37%	27%	73%	70%	22%	8%
Number	76	45	33	88	85	27	09

The study is conducted in Andhra Pradesh region of India which constitutes 10.37% of covid-19 confirmed cases to that of the total confirmed cases in the country. The population of the state of Andhra Pradesh is 52 million constituting 0.04% of 135 million population of India. The state of Andhra Pradesh ranks second in total confirmed cases of covid-19 in India (10). With prevailing limitation in conducting physical survey and limited access to online survey methods being a developing country there were 121 respondents with a composition of mean age of 35.5 years (Max: 70-Min: 18), 63% (Male) and 37% (Female), 92% (Work related) and 08% (Home-based) and 73% (Non-vegetarians) and 27% (Vegetarians). Work related are those major activities or profession of an individual that are away from home and include employment and education. The margin of error is 7% for the sample size and population of the study with 90% confidence interval and thus the results differ within 7 percentage points from the real population value 90% of the time. Linear or multiple regression analysis was employed to evaluate the relationship of dependent variables with predictor variables. Independent variables which have significance of $p<0.05$ with coefficients that represent positive association with the dependent variables are discussed. Smaller values of R^2 may not necessarily be insignificant, although caution must be exercised in interpretation without being combined with other statistical methods. However, based on the knowledge of the subject area in studies of human behaviour, which are difficult to predict, a high value of of R^2 has been described as being 'almost impossible' (11). Given this caveat, the result at least shows a trend that can be further studied. The variables considered throw light on aspects that could be taken into account to find ways to live with situations like covid-19 pandemic. Statistical analysis using excel is carried out for the parameters of demographics, food intake, ADL, built environment, leisure and entertainment, and health and wellbeing.

Results:

Food habits: Questions on whether there is any change in food intake of main course viz. Breakfast, lunch, evening snacks and dinner were considered. They were asked on whether there is any increase, decrease or remained the same for the food intake during and before the lockdown. Also information was taken on what type and quantity of food in vegetarian and non-vegetarian is consumed. The cumulative quantity in terms of increase, decrease, remained the same of various food items in vegetarian and non-vegetarian are divided by the number of items for respective groups to normalize. Items like chicken, mutton, fish etc. were considered for non-vegetarian and various types leafy vegetables, tubers, vegetables etc. were considered for vegetarian subjects. The graph shows the product of main course and type and quantity of food items by respective groups and should ideally be the same. Ttest for vegetarian and non-vegetarian groups show significant differences ($p<0.05$) for food intake during lockdown. Further, the standard error of mean for the two groups of vegetarian and non-vegetarian food intake during lockdown show reduction in intake of non-vegetarian items (Figure-2).

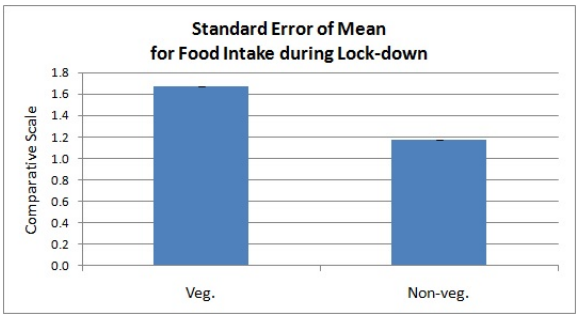

Figure 2: Food intake during lockdown

Health and Wellbeing: Self-reported questions on perception of well-being parameters include "energy, pep, vitality", "happy and satisfied personal life", "feel healthy to work", "generally tensed" and "worried about health". However, a question on "feeling in general" is asked which includes overall perception of health. A regression analysis of different predictor well-being parameters that contribute to "feeling in general" is analysed for both before and during lockdown. The result of 121 subjects show an association of dependent variable of "Feeling in General" with a significance of $p<0.02$, $R^2 = 0.51$ to predictor variables of "energy, pep, vitality" and "feel healthy to work" with a positive coefficient of 0.305 and 0.374 respectively, during the pandemic situation. Whereas the predictor variables of "energy, pep, vitality", "happy and satisfied personal life", "feel healthy to work" show significant relation $p<0.02$ with dependent variable of "feeling in general" observed before lockdown with $R^2=0.60$ indicating a greater reliability with positive coefficients of predictor variables of 0.501, 0.193, 0.207 respectively . It is expected that "energy, pep or vitality", "happy and satisfied personal life" and "feel healthy to work" are associated with "feeling in general" before lockdown in absence or inexistence of the disease. With emergence of the epidemic and promulgation measure of stay-home the association of "feeling in general" is maintained in "energy, pep or vitality" and "feel healthy to work" however, with a mean change in coefficients of the predictor variables. While there is reduction in coefficient of "energy, pep or vitality" compared with before lockdown, the increase in coefficient for "feel healthy to work" during lockdown could be attributed to improved safe conditions of WfH. Also it is strengthened by the fact that an association of "happy and satisfied personal life" with "feeling in general" is noticed before lockdown (Table-2).

Watching television-TV: There is significant positive relation with 95% confidence interval and $R^2=0.18$ to "Feeling in General" for the news channels of "News updates on COVID-19 cases" with ($p<0.05$) and "General news updates" with ($p<0.01$) and increasing trends of 0.269 and 0.311 coefficients respectively (Table-2). There is significant relation to "Happy and satisfied personal life" with ($p<0.01$) at 95% confidence interval and $R^2=0.14$ for channels related to "spirituality" with increasing trend of 0.201 coefficient with dependent variable.

Table 2: Regression results

Dependent Variable	Predictor Variable	Coefficients	Standard Error	t Stat	P-value
Feeling in General	During Lockdown				
Sample size=121	Energy, pep or vitality	0.305	0.122	2.504	0.014**
R^2=0.509	Happy, satisfied personal life	0.149	0.096	1.556	0.123
Significance, F=2.21E-16	Feel healthy to work	0.374	0.098	3.802	0.000**
Intercept=1.704	Generally tensed	-0.115	0.072	-1.586	0.115
	Worried about health	-0.124	0.073	-1.699	0.092
Feeling in General	Before Lockdown				
Sample size=121	Energy, pep or vitality	0.501	0.088	5.687	0.000**
R2=0.601	Happy, satisfied personal life	0.193	0.071	2.739	0.007**
Significance, F=1.89E-21	Feel healthy to work	0.207	0.083	2.484	0.014**
Intercept=1.189	Generally tensed	-0.066	0.051	-1.285	0.202
	Worried about health	-0.080	0.056	-1.441	0.152
Feeling in General	Watching TV (News Channels)				
Sample size=121	News updates on COVID-19 cases	0.269	0.126	2.130	0.035**
R2=0.189	News updates COVID-19 health precautions	-0.173	0.140	-1.234	0.220
Significance, F=0.00002	General new updates	0.311	0.113	2.740	0.007**
Intercept=3.383					
Happy, satisfied personal life	Watching TV (Leisure Channels)				
Sample size=121	Movies	0.155	0.080	1.938	0.055
R2=0.145	Music	0.055	0.080	0.689	0.492
Significance, F=0.001	Spirituality	0.201	0.077	2.610	0.010**
Intercept=4.069					
Feel healthy to work	Mode of Transport				
Sample size=121	Public transport (Bus/Metro etc.)	-0.190	0.114	-1.665	0.099
R2=0.119	Para transport (Autorickshaw)	0.115	0.136	0.850	0.397
Significance, F=0.023	Company vehicle	0.066	0.076	0.871	0.385
Intercept=4.112	Personal Car	0.161	0.067	2.395	0.018**
	Personal 2-wheeler	0.084	0.068	1.236	0.219
	Shared transport (friends vehicle)	0.014	0.083	0.174	0.862
WfH	Employees living at individual houses irrespective of ownership				
Sample size=22	Bed room	3.253	1.355	2.401	0.029**
R2=0.526	Balcony/Sit-out/Utility	-1.631	0.815	-2.001	0.063
Significance, F=0.024	Front/Back yard	-1.932	1.379	-1.401	0.180
Intercept=10.698	Toilet	-1.752	1.131	-1.550	0.141
	Other Rooms	-1.746	0.958	-1.823	0.087
WfH	Students staying at own houses				
Sample size=21	Bed room	1.540	1.041	1.480	0.160
R2=0.481	Balcony/Sit-out/Utility	1.727	0.803	2.152	0.048**
Significance, F=0.057	Front/Back yard	-2.164	1.212	-1.785	0.095
Intercept=7.882	Toilet	-2.488	1.030	-2.415	0.029**
	Other Rooms	-0.717	0.799	-0.898	0.384
**indicates significance at 95% confidence interval					

Mode of transport: The expectations of the people when the lockdown is released show Mode of transport in personal car has a positive coefficient of 0.161 with "Feel healthy to work" with a significance of ($p<0.02$) with R^2=0.12 (Table-2).

Built environment and Work from Home (WfH): The average distance of 9.5KM and an average 30 minutes travel by respondents to office/institute have actually saved time and energy that could be contributed to WfH (12). We assessed the relationship of home with WfH in two different aspects. One being

the ownership of the house (whether rented, owned or quarters provided by the employer) and the other is the typology of the building (individual house, apartment/group housing and row housing). Group housing is a type of housing consisting of 4-12 tenements in a building whereas apartment has more than 12 tenements in a building. In the 121 samples surveyed, there are three categories of ownership of which 62% of them own the residence, 37.2% stay in rented houses and 0.8% stays in quarters provided by the employer. In typology of building, 52.9% are apartment/group housing, 40.5% are individual/independent houses and 6.6% are of row housing. However, quarters provided by the employer in ownership category and row housing in typology of the building were not considered due to small sample size. Also there are 22 home-based (10 home makers/retired persons and 12 office/businesses operating from home) that were not considered.

The generally available spaces for residential buildings in India are kitchen, living, dining, balcony or sit-out spaces, toilets/washrooms and with more than 90% of them having 1-4 bedrooms (13). Spaces such as living and dining are noisy. Often, living and dining spaces are connected together in India where multiple activities take place. Relatively quieter spaces are the balcony/sit-out used mostly as a micro-garden and as relaxation for short duration, while the quietest is the bedroom. It is important to find a suitable place to work at home. The number of dwellings studied consisting of these spaces are shown in the figure (Yes – available and No – Not available) with few having exclusive spaces viz. store space, home theatre, garage/parking, terrace and back/front yard (Figure 3).

We assessed the response of the participants on WfH and found that people whose homes are of group housing/apartment type that constitute 52.9% have no significant relation, which seemingly reflect unfavourable conditions. As mentioned earlier, group housing is a type of housing consisting of 4-12 tenements in a building whereas apartment has more than 12 tenements in a building.

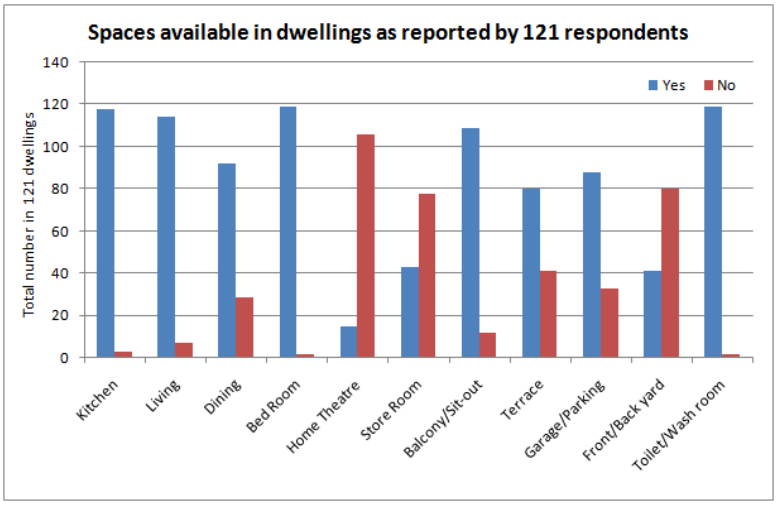

Figure 3: Spaces in dwellings

Those staying in individual houses (22 respondents) irrespective of the ownership prefer WfH from their bed room space ($p<0.05$ and $R^2=0.52$) with 95% confidence interval and a positive 3.253 coefficient (Table-2). As for the students, those who stay at their own houses (21 samples) prefer balcony/sit-out spaces to perform their activities ($p<0.05$ and $R2=0.48$ with 95% confidence interval) with a positive coefficient of 1.727 with dependent variable WfH. Interestingly, for the students the association of toilet/wash area with WfH ($p<0.05$ and $R2=0.48$, 95% CI) and -2.488 coefficient though negative, reflects its importance during work. It is likely that the toilets/wash areas in institutes those are used by more number of people, specifically in India and during covid19 times is a concern for the students. And it is reasonable to anticipate that the availability of toilet/wash area is negatively associated with WfH compared to that available at the institutes. Moreover, the concern pitches for hygiene required during covid19 for toilets/wash areas at institutes compared for those at home.

Therefore, the general living conditions in Indian homes can broadly be categorized under active and passive zones. Activities related to watching TV, family interactions and daily chores of household are performed in active zones that include living, dining and kitchen and are often noisy. Hence the possibility of WfH with no other choice left could happen in bedrooms and sit-outs that are relatively calm and are sufficient in numbers considering the average size of 4-members in a family (Figure 4). However, design of spaces that could accommodate the requirements of formal and calm environments for WfH is important during situations of "stay home stay safe".

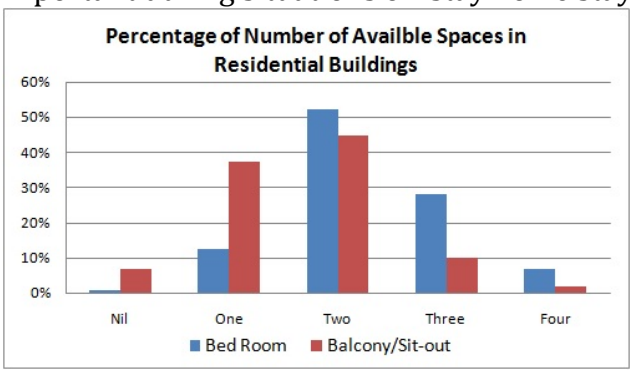

Figure 4: Percentage of number of bedroom and balcony/sitout present in dwellings.

Discussion

We report an exploratory view of how the built environment was impacted by the world's biggest lockdown following the covid pandemic; rather than take a narrow technical deep view of architecture per se in terms of construction, transmissibility and other micro-environmental factors, we considered the different ways in which people responded at home and for work in their immediate built environment.

The average distance of 9.5KM and an average 30 minutes travel by respondents to office/institute have actually saved time and energy that could be contributed to WfH. Essentially we observed that the major difference entailed by the

lockdown was a reduction of time and distance to go to their workplace. In terms of food intake, those who ate only vegetarian food did not experience any change, unlike those who were non-vegetarians, who reduced the intake of meat. This was necessitated both by the cost as well as an (unfounded) fear of transmission through meat. The fear amongst people that wet market places are potential threat of transmission of such diseases, there is a need for transformational change in the way they function. The professionals of built environment could rethink on strategies for location and design of wet market places to enhance quality in the way they function and offer safe and healthy places to people.

To fill the time available on hand during the lockdown, watching television at home was a common pastime. Forced social isolation did not alter the channels watched (movies, sports, educational, spiritual, soap operas, music, environment or news). General news and COVID-19 updates seem to have positive wellbeing along with watching spiritual channels. However, there is a need to consider how design of homes, building construction and materials could support multiple activities of home and work hitherto functioning. Acoustics and Internet of Things amongst others could become integral design considerations for the professionals of built environment.

The unprecedented lockdown led to the family staying at home, and accomplishing all their usual activities in an environment for which it was not originally designed, viz employment work, studies, entertainment and leisure all at once by all the family members. Among those who worked from home, most preferred to work from their bedroom. Students preferred to study outside the house, in balconies or in sit-outs.

Sleep is one of the compromises in the modern world, where people are accused of 'gorging themselves with food and starving themselves of sleep' (14). Here was a situation where there was ample time available for sleep/rest, without the distractions of work or the forced circadian disruptions of shift work. However there doesn't seem to have any effect, but the small sample sizes make it difficult to reach valid conclusions. However, factors including fear of being infected, economic uncertainty could have played a major role. It was a period of forced isolation, not volitional vacation; in addition the period of study could have been too short for any changes to be perceived.

Following the recognition of covid-19 pandemic, attention has focused on built environment trends to lower the risk of transmission by the design of buildings (15), as well as other tactile surfaces such as doorknobs, switches, toilet handles and faucet knobs (16). More broad based concerns about the construction of smart cities which can deal with future pandemics consisted of popularization for health science, improving emergency health systems, and keeping in place multi-industry coordination mechanisms, to deal with pandemics (17).
The concept and application of built environment owes its origin to epidemics and pandemics in the past: bubonic plague in the 14th century, yellow fever in the 18th and cholera and small pox in the 19th all resulted in innovations such as broad boulevards, sewer systems, plumbing and urban sprawls (18).

Besides healthy workplaces, telecommuting and online accessibility of various services including telemedicine, distance learning, online shopping and online entertainment are bound to evolve. Houses are not just physical structures, but they are part of a broader social sphere; pandemics disturb the structures and routines that are closely inter-related, which is an interesting macro feature to consider (19). Some of the potential ways covid-19 will impact built environment consist of a shift away from large city offices, a reduced reliance on cars for transport to jobs and development of new forms of public spaces (20).

Ultimately these must lead to rethinking of design, operations, behaviour and maintenance to ensure that first the workplace and thence the economy is less susceptible to disruptions caused by disease (21).

To convert the crisis into an opportunity, one must plan to respond to such unexpected events, re-calibrate transport facilities, the work places to improve spatial distancing, as well as re-design of the environment by fusing blue and green infrastructure (22,23).

Conclusion

The unprecedented lockdown due to COVID-19 pandemic has greatly impacted the behaviours of family staying at home and accomplishing all their usual activities in an environment for which it was not originally designed. The “stay home stay safe” strategy contributed for wellbeing factors of general health, happiness and vitality while keeping away the worry of health and feeling of tensed.

There seems to have some influence of “Energy, pep or vitality and Feel healthy to work”. From the coefficients, “Energy, pep or vitality” seems to have increased effect before lock-down compared to during lock-down and for “Feel healthy to work” it seems to have improved during lock-down for safe WfH situation”. However, the predictor variable of “Happy, satisfied personal life” is prevalent before lock-down.

In terms of food intake, those who ate only vegetarian food did not experience any change, unlike those who were non-vegetarians, who reduced the intake of meat. This was necessitated both by the cost as well as an (unfounded) fear of transmission through meat. The fear amongst people that wet market places are potential threat of transmission of such diseases, there is a need for transformational change in the way they function. The professionals of built environment could rethink on strategies for location and design of wet market places to enhance quality in the way they function and offer safe and healthy places to people. With ample time to rest there doesn’t seem to have any effect on sleep prior lockdown i.e. during normal days and in lockdown.

Average distance of 9.5KM and an average 30 minutes travel to office/institute have actually saved time and energy in contributing to WfH. The relationship of home with WfH by ownership and typology of the building show that those

staying in individual houses irrespective of the ownership prefer WfH from their bed room space whereas for the students, those who stay at their own houses prefer balcony/sit-out spaces to perform their activities. However, the general living conditions in Indian homes with family interactions at living, dining and kitchen that are often noisy, design of spaces that could accommodate the requirements of formal and calm environments for WfH is important during situations of "stay home stay safe". There is a need to consider how design of homes, building construction and materials could support multiple activities of home and work hitherto functioning. Acoustics and Internet of Things amongst others could become integral design considerations for the professionals of built environment.

Some of the potential ways covid-19 will impact built environment consist of a shift away from large city offices, mode of transport and development of new forms of public spaces. More broad based concerns about the construction of smart cities can deal with future pandemics with popularization of health science and improving emergency health systems keeping in place multi-industry coordination mechanisms, to deal with pandemics. Besides healthy workplaces, telecommuting and online accessibility of various services including telemedicine, distance learning, online shopping and online entertainment are bound to evolve.

Limitation of the study

Our exploratory study has limitations in having a small sample of subjects along with inherent biases in the recruitment of subjects who had access to internet, were conversant in English and agreed to participate in the study. The method of online questionnaire circulated to the contacts of the authors on social media is adopted from studies under similar situations (8). Nevertheless, it confirms the principles of built environment on well-being and health (24) and hopefully provides an impetus for development based on sound biopsychosocial concepts.

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Appendix:
Online link to Questionnaire:
https://docs.google.com/forms/d/e/1FAIpQLSdNFuo3S8x4zUE1UG7RtRF52dpONvvJG_T58AYbzCUElbzXjg/viewform?vc=0&c=0&w=1

Reviewer: Simone Torresin

I would like to thank the Authors for the reviewed article version. Please find in the following some more comments that might help improve the paper quality:

1. “There is as yet no vaccine to prevent it, or drugs to cure the infection.” Please update this sentence according to the current state of vaccine search, development and testing;

The following modification has been made: ‘In the initial phase of the pandemic, the only measures to reduce the transmission consisted of physical distancing, frequent washing of hands with soap and water, and avoiding touching the face. They form the core preventive measures even after the availability of vaccines and potential medicines to treat the infection”

2. "93% (Work related) and 07% (Home-based)". What do the Authors mean by "work related"?
Following text is added,
“Work related are those major activities or profession of an individual that are away from home and include employment and education.”
3. “Independent variables which have significance of $p<0.05$ with coefficients that represent positive association with the dependent variables are discussed” Why are the Authors only commenting on positive associations? I think, in general, both positive and negative associations can be of interest. Please comment on this aspect.

Response: This has been addressed in the text.

4. "Smaller values of R2 may not necessarily be insignificant". The Authors here refer to the reference [11], where we can read: "To get the full picture, one must consider R2 value in combination with residual plots, other statistics, and in-depth knowledge of the subject area" [11]. I personally agree with this statement. In this study, however, the Authors do not provide such an in-depth analysis and it should be highlighted that, in case of low R2, results should be taken with caution and their relevance is also to be evaluated based on the "knowledge of the subject area". For instance, I would be rather skeptical of the relevance of "Feeling in general" regression model based on the watched news channels (R2 = 0,19), but I leave to the Authors the choice of reporting and commenting on such results.

Addressed as follows: 'Smaller values of R^2 may not necessarily be insignificant, although caution must be exercised in interpretation without being combined with other statistical methods. However, based on the knowledge of the subject area in studies of human behaviour, which are difficult to predict, a high value of of R^2 has been described as being 'almost impossible' (11). Given this caveat, the result at least shows a trend that can be further studied.'

5. The Authors sometimes refer to "Table 3", but I think it is "Table 2" instead.
Made the corrections.

6. "Demographic variables are presented in Table 1a and 1b". I would move here the description of demographic data reported above.
Table-1a is renamed as Table-1 and information of Table-1b is written as following text,
"For a mean age of 35.5 years (Max: 70.0; Min: 18.0; SD: 12.9) the mean Body Mass Index (BMI), a physiological parameter is 26.3 (Max: 49.9; Min: 15.7; SD: 4.6)."
Thus Table-1b is removed.

7. Fig. 2 is still not clear to me. The figure caption reports "Food intake during lockdown" and the y-axis description is "comparative scale". Please provide some more context (in the main text and in the figure caption) on how the data shown were derived and on how the reader can interpret the figure.
The following text,
"Questions on whether there is any change in food intake were asked. Items like chicken, mutton, fish etc. were considered for non-vegetarian and various types leafy vegetables, tubers, vegetables etc. were considered for vegetarian subjects. Ttest for vegetarian and non-vegetarian groups show significant differences ($p<0.05$) for food intake during lockdown. Further, the standard error of mean for the two groups of vegetarian and non-vegetarian food intake during lockdown show reduction in intake of non-vegetarian items (Figure-2)."

Has been replaced as follows,
Questions on whether there is any change in food intake of main course viz. Breakfast, lunch, evening snacks and dinner were considered. They were asked on whether there is any increase, decrease or remained the same for the food intake during and before the lockdown. Also information was taken on what type and quantity of food in vegetarian and non-vegetarian is consumed. The cumulative quantity in terms of increase, decrease, remained the same of various food items in vegetarian and non-vegetarian are divided by the number of items for respective groups to normalize. Items like chicken, mutton, fish etc. were considered for non-vegetarian and various types leafy vegetables, tubers, vegetables etc. were considered for vegetarian subjects. The graph shows the product of main course and type and quantity of food items by respective groups and should ideally be the same. Ttest for vegetarian and non-vegetarian groups show significant differences ($p<0.05$) for food intake during lockdown. Further, the standard error of mean for the two groups of vegetarian and non-vegetarian food intake during lockdown show reduction in intake of non-vegetarian items (Figure-2).

8. "There seems to have some influence of "Energy, pep or vitality and Feel healthy to work". Please detail the type of influence.
The following explanation,
"There seems to have some influence of "Energy, pep or vitality and Feel healthy to work". From the coefficients, "Energy, pep or vitality" seems to have increased effect before lock-down compared to during lock-down and for "Feel healthy to work" it seems to have improved during lock-down for safe WfH situation". However, the predictor variable of "Happy, satisfied personal life" is prevalent before lock-down."
Is replaced with modified explanation as follows,
"It is expected that "energy, pep or vitality", "happy and satisfied personal life" and "feel healthy to work" are associated with "feeling in general" before lockdown in absence or inexistence of the disease. With emergence of the epidemic and promulgation measure of stay-home the association of "feeling in general" is maintained in "energy, pep or vitality" and "feel healthy to work" however, with a mean change in coefficients of the predictor variables. While there is reduction in coefficient of "energy, pep or vitality" compared with before lockdown, the increase in coefficient for "feel healthy to work" during lockdown could be attributed to improved safe conditions of WfH. Also it is strengthened by the fact that an association of "happy and satisfied personal life" with "feeling in general" is noticed before lockdown."
9. In the Discussion paragraph, many different topics are addressed, often poorly related one to another. E.g., "Essentially we observed that the major difference entailed by the lockdown was a reduction of time and distance to go to their workplace. In terms of food intake,…". The points raised should be grounded on the study results and on scientific literature relevant for this study. E.g., "This was necessitated both by the cost as well as an (unfounded) fear of transmission through meat." How did the Authors derive such conclusion? Is it just an assumption, is it based on data collected or from previous literature? In the latter case, please provide a reference.

Reduction of time and distance from home to workplace has been mentioned in “Built environment and Work from Home (WfH)” section.
“The average distance of 9.5KM and an average 30 minutes travel by respondents to office/institute have actually saved time and energy that could be contributed to WfH (12).”
Data was collected on how much distance they travel. The time spent for travel has been derived from earlier studies on the average speed of the traffic in Indian cities for which Reference number 12 is provided.
Maybe a reference for “…unfounded fear of transmission through meat” is required.

10. Conclusions. “In terms of food intake, those who ate only vegetarian food did not experience any change, unlike those who were non-vegetarians, who reduced the intake of meat. This was necessitated both by the cost as well as an (unfounded) fear of transmission through meat.” This sentence has been reported twice.
The repeated sentence has been removed.

Reviewer: Anna Mavrogianni

'The paper has improved considerably.
However, I still think that caution is needed in reporting and interpreting the low R2 values. For instance: "There is significant positive relation with 95% confidence interval and R2 =0.18 to “Feeling in General” for the news channels of “News updates on COVID-19 cases” [...]" I understand the point made by the authors about “Smaller values of R2 may not necessarily be insignificant”, but I believe that more context is required; how is a 'significant positive relation' defined within this analysis? I would perhaps recommend simply reporting the observed values and indicating that they potentially signal the presence of a relationship or trend.

Response: The issues have been addressed

Last, indicative numerical results might be helpful in the Abstract to support the headline statements.'

Response: Numerical results have been provided in the abstract