Using planning powers to promote healthy weight environments in England [version 1; peer review: 2 approved]

Michael Chang\textsuperscript{1,2}, Duncan Radley\textsuperscript{1}

\textsuperscript{1}Carnegie School of Sport, Leeds Beckett University, Leeds, LS6 3QW, United Kingdom
\textsuperscript{2}WHO Collaborating Centre for Health Urban Environments, University of the West of England Bristol, Bristol, BS16 1QY, United Kingdom

Abstract

\textbf{Background:} The prevalence of obesity in English adults and children has reached critical levels. Obesity is determined by a wide range of factors including the environment and actions to reduce obesity prevalence requires a whole systems approach. The spatial planning system empowers local authorities to manage land use and development decisions to tackle obesogenic environments.

\textbf{Methods:} This research aimed to better understand what and how planning powers are being utilised by local authorities to help tackle population obesity. It reviewed literature on the six planning healthy weight environments themes. It identified what powers exist within the planning system to address these themes. It collated professionals' perspectives on the barriers and opportunities through focus groups within local authorities and semi-structured interviews with national stakeholders.

\textbf{Results:} The research complements current research on the association between the environment and obesity outcomes, though methods employed by researchers in the literature were inconsistent. It identified three categories of planning powers available to both require and encourage those with responsibilities for and involvement in planning healthy weight environments. Through direct engagement with practitioners, it highlighted challenges in promoting healthy weight environments, including wider systems barriers such as conflicting policy priorities, lack of policy prescription and alignment at local levels, and impact from reduced professional and institutional capacity in local government.

\textbf{Conclusions:} The conclusions support a small but increasing body of research which suggests that policy makers need to ensure barriers are removed before planning powers can be effectively used to promote healthy weight environments as part of a whole systems approach. The research is timely with continuing policy and guidance...
focus on tackling obesity prevalence from national government departments and their agencies. This research was conducted as part of a Master of Research at Leeds Beckett University associated with a national whole-systems to obesity programme.

**Keywords**
Planning, healthy weight, environment, obesity, public health

This article is included in the Sustainable Cities gateway.

This article is included in the Healthier Lives gateway.

**Corresponding author:** Michael Chang (Michael.Chang@phe.gov.uk)

**Author roles:** Chang M: Conceptualization, Data Curation, Formal Analysis, Investigation, Methodology, Project Administration, Resources, Writing – Original Draft Preparation, Writing – Review & Editing; Radley D: Supervision, Writing – Original Draft Preparation, Writing – Review & Editing

**Competing interests:** No competing interests were disclosed.

**Grant information:** The authors declared that no grants were involved in supporting this work. The funders had no role in study design, data collection and analysis, decision to publish, or preparation of the manuscript.

**Copyright:** © 2020 Chang M and Radley D. This is an open access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

**How to cite this article:** Chang M and Radley D. Using planning powers to promote healthy weight environments in England (version 1; peer review: 2 approved) Emerald Open Research 2020, 2:68 https://doi.org/10.35241/emeraldopenres.13979.1

**First published:** 26 Nov 2020, 2:68 https://doi.org/10.35241/emeraldopenres.13979.1
Introduction

When the Government Office for Science Foresight report on tackling obesities was published in October 2007, it projected public and professional awareness of escalating population obesity rates in the UK into the limelight. It estimated a rising trend over the next 40 years and that by 2050, 60% of adult men, 50% of adult women and about 25% of all children under 16 could be obese (Government Office for Science, 2007). Crucially it set out the case for change away from single-focused interventions and the balance of responsibility from the individual to a comprehensive, system-wide approach.

It was estimated that the National Health Service (NHS) in England spent £5.1 billion on overweight and obesity-related ill-health in 2014/2015 while local government child and adult obesity expenditure was estimated to be £99.7 million (Liu et al., 2019). To put this in the context of local government financing, for example, in 2020/21 local government will receive £3.279 billion for all public health duties. The latest health improvement data from the Public Health Outcomes Framework for England shows 62.3% of adults are overweight and obese, and the National Child Measurement Programme (NCMP) shows 22.6% of Reception year children and 34.3% of Year 6 children are overweight and obese.

Compare this evidence of current obesity statistics against trend projections made by Foresight for childhood and adult obesity by 2025 and 2050, we can begin to see the scale of the challenge and need to take action.

The Foresight report advocated an approach centred on prevention and tackling what is termed the ‘obesogenic environment’. The obesogenic environment refers to environmental factors that promote gaining weight and that are not conducive to weight loss within the home or workplace (Swinburn et al., 1999). Accordingly, tackling obesity has become a high-level priority for the UK Government with the publication of the Childhood Obesity Plan: Part 1 in 2016 (DHSC, 2016). But it was not until Part 2 of the Childhood Obesity Plan published in 2018 that the government recognised and highlighted their support for local authorities using powers available to create healthier environments (DHSC, 2018).

UK parliamentary select committee inquiries on childhood obesity have consistently highlighted similar constraints within the planning system and call for government to give local authorities more powers to tackle, for example, issues concerning the restriction of hot food takeaways and the food environment (House of Commons Health Select Committee, 2015; House of Commons Health Select Committee, 2016; House of Commons Health Select Committee, 2017). Overall, there is an established recognition in government bodies and academia that local authorities possess a toolbox of regulatory powers to formulate policies and actions, which can influence obesogenic environments (LGA, 2015).

This paper focuses on research undertaken as part of a Master of Research between 2017 and 2019. The research sought to obtain a novel understanding of if and how the planning system and local authority practitioners in planning and public health departments can help promote a healthy weight environment (see Figure 1).

Powers of spatial planning

The powers of the spatial planning system place responsibility on local authorities to manage the use and development of land for activities ranging from housing, retail, office, industry and transportation. Regardless of differences in legislative and policy contexts, the planning system is based on a systemic process and structure of national policy informing local policy and decisions on individual land use activities with involvement from multiple sectors of professionals and society. While planning alone cannot solve the obesity crisis, when

Figure 1. Research objectives and their relationship.
utilised effectively it can be a powerful tool for positively influencing healthy behaviours and providing healthy options through the built and natural environment (Hamidi & Ewing, 2020).

These powers have not been created purposefully to directly address public health outcomes including obesity reduction priorities. But the range of spatial planning policy requirements set out, for example in the English National Planning Policy Framework (NPPF) (MHCLG, 2019) and the Planning Practice Guidance on healthy and safe communities, have supported and continue to support locally-led action on tackling the environmental determinants of obesity (Ross & Chang, 2014). At the local level, local authorities have several powers at their disposal to direct public policy objectives towards promoting healthy weight environments, primarily through the statutory local plan, supported by further guidance (Blackshaw et al., 2019) (see Table 1).

The use of the planning system as part of a wider inter-connected system of levers to tackle obesity (PHE, 2019) reflect what Allender (2010) suggested as the “growing agreement that obesity intervention must address the complex and interconnected mix of etiological factors from behaviours to social, built, natural and economic environments”. A move towards whole systems thinking, first suggested in the Foresight Report and since developed and refined by Leeds Beckett University through the whole systems approach to tackling obesity project (Bagnall et al., 2019; PHE, 2019), has been one of the most seminal developments in making sure actions to tackle obesity embrace coordinated action across sectors and disciplines.

Planning healthy weight environments framework
This research uses the following definition of a healthy weight environment: “A healthy-weight environment supports people in avoiding being overweight or obese through how the place is designed and what it provides” (Ross & Chang, 2014). It takes, as the starting point, the planning healthy weight environments framework (subsequently referred to as the PHWEF) and its six themes created by the Town and Country Planning Association (TCPA) and Public Health England (PHE) in 2014 (see Figure 2), building on evidence identified by existing literature including Townshend & Lake (2017).

The six PHWEF themes are (Ross & Chang, 2014)
- A. Movement and access - measures aimed at promoting active travel.

### Table 1. List of some local authority planning powers relevant to healthy weight environments.

<table>
<thead>
<tr>
<th>Planning power</th>
<th>How it can be useful for promoting healthy weight environments in planning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Duty on sustainable development (Planning and Compulsory Purchase Act 2004)</td>
<td>Contributes to achieving sustainable development in plan-making, ie LPA local plans. Sustainable development includes health and wellbeing considerations as set out in UK Sustainable Development Strategy and NPPF.</td>
</tr>
<tr>
<td>Duty on good design (Planning Act 2008)</td>
<td>Desirability to achieve good design in plan-making, i.e. LPA local plans. Good design includes promoting healthy and accessible places as set out in the NPPF.</td>
</tr>
<tr>
<td>Use Class Order (UCO) and permitted development rights</td>
<td>A national classification of land use activities which governs what activities and change of activities are permitted or would require permission, such as changing from a shop to a fast food takeaway outlet.</td>
</tr>
<tr>
<td>National Planning Policy Framework (updated February 2019 version)</td>
<td>National policy requirements on land use. It must be taken into account in preparing the local plan, and is a material consideration in planning decisions. It contains policy requirements on meeting local health needs and priorities.</td>
</tr>
<tr>
<td>Planning Practice Guidance</td>
<td>Supports NPPF land use policies. It must be taken into account in preparing the local plan, and is a material consideration in planning decisions. It contains a section on promoting health and healthier food environments.</td>
</tr>
<tr>
<td>Local Plan</td>
<td>Broad locations of land use activities; and topic-based policies to be taken into account when considering planning decisions. It can set policy considerations and requirements related to healthy weight environments.</td>
</tr>
<tr>
<td>Supplementary Planning Document</td>
<td>Provides more detailed advice or guidance on policies in the Local Plan, including on health and wellbeing, active travel and food environments.</td>
</tr>
<tr>
<td>Planning conditions</td>
<td>Included as part of planning permission to enhance quality of development.</td>
</tr>
<tr>
<td>Section 106 planning obligations</td>
<td>Financial and non-financial contributions agreed with landowners/ developers to mitigate site-specific impact from development.</td>
</tr>
<tr>
<td>Travel plan</td>
<td>Identifies specific outcomes, targets and measures, and future monitoring and management arrangements. It sets explicit outcomes (such as encouraging active travel). Required as part of planning application.</td>
</tr>
<tr>
<td>Design Code</td>
<td>Sets out design principles aimed at delivering better quality place. Design codes provide a statement about the particular qualities of a place, and can help set out physical elements to promote healthy weight environments.</td>
</tr>
</tbody>
</table>
B. Open spaces, recreation and play - measures aimed at providing the informal and formal spaces and spaces necessary for leisure, recreation and play opportunities.

C. Food - measures aimed at improving the food environment for access to, consumption and production of healthier food choices.

D. Neighbourhood spaces - measures to improve the public realm and provision of community facilities to accommodate local programmes such as for physical activity, community activities or weight reduction.

E. Building design - measures aimed at improving the internal design and quality of homes and building to promote living healthier lifestyles.

F. Local economy - measures aimed at supporting people into local employment in accessible and healthy town centres or high streets.

Methods
The critical role of practitioners is to interpret evidence, priorities and policy contexts. Actions through the spatial planning system on tackling obesity depend on their professional judgements and opinions which is reflective of the discretionary nature of the process (Tewdwr-Jones, 1999). How appropriate and effective they are is dependent as much on the practitioners as on the planning system (Carmichael et al., 2013). A qualitative approach was therefore employed, given the focus of the research was on the experience, meaning and perspectives of these practitioners (Hammarberg et al., 2016).

The qualitative engagement component of the research took place between October and November 2018 and sought the views of local authority town planners, public health practitioners, and experts working at national and local levels. Full ethical approval (reference: 49649) was obtained in May 2018 from the Leeds Beckett University Local Research Ethics Co-ordinator.

Local authority focus groups
Two focus groups were conducted with two English local authorities lasting for 1.5 hours. They were selected to represent different local government arrangements as a unitary and a two-tier authority.

Coordination for recruiting participants was carried out through the main contact in the public health team at each of the two local authorities with instructions to target the main audience groups relevant to the research. The audience groups were officers working in town planning, public health, transport, housing, and the natural environment and a total of 17 officers from two local authorities participated in the focus groups.

The focus group sessions took place in the respective offices of the local authorities during October 2018 over 1.5 hours. There were no presence of non-participants and all the participants...
submitted research consent forms. The focus group discussions were recorded through audio to supplement field notes made by the researcher, and the discussions were not transcribed.

In conducting the focus groups, a semi-structured approach was designed to consider the challenges of planning for healthy weight environments. Questions explored participants views towards the purpose of planning, and the challenges and opportunities in its orientation towards tackling public health issues such as obesity.

Focus groups were used as part of the mixed methods approach to help obtain and inspire insight into the topic areas (Ørngreen & Levinson, 2017). The flexibility in this semi-structured approach allowed for issues that were brought up by participants which related to their experiences to be further explored to gain a greater depth of knowledge (Sparkes & Smith, 2014). Although many issues were repeatedly raised during the focus groups as the researcher observed, it was necessary for the participants to be able to openly contribute and express their professional opinions without restrictions.

Results from the focus group discussions were supplemented with quantitative data through the use of a feedback form. The questionnaire of 15 questions (of which 10 required quantitative responses) was administered to every participant towards the end of the focus group to allow time for completion. The questionnaire supplemented questions asked during the workshops and additionally allowed participants to express the extent of their respective professional contribution to the agenda and their knowledge of healthy weight environments (Chang, 2020a).

Expert interviews
In addition, six interviews were conducted with participants from different professional backgrounds, including national public health advisors, a professor of urban design and health, a national planning and design professional, and a local authority public health practitioner. The interview participants were selected because of their strategic perspective and experience or knowledge of planning and public health, particularly relating to obesity and the environment, and from one of the target professional groups (town planner or public health professional).

Interviews were held either face-to-face in the office setting of the interviewee or researcher or by phone, lasted from 30 to 60 minutes, and held in confidence. The interviews were semi-structured to explore the challenges of planning for healthy weight environments at a strategic and national level, and to obtain a strategic understanding of interviewees’ awareness of the range of planning powers available in relation to obesity. The interview transcripts can be found in the Underlying data (Chang, 2020b).

Analysis
Notes taken during focus group discussions were combined with the active listening approach. It required the facilitator to be attentive, friendly, understanding, responsive, and able to manage the flow of conversations (Bodie et al., 2012), particularly in different group sizes. The active listening method was combined with taking notes which were referred back to during data analysis using the thematic analysis approach (Vaismoradi et al., 2013)

Results and discussion
Responses from the questionnaire highlighted that the perceived current challenges and future threats to planning healthy weight environments were:

- Competing policy priorities
- Lack of people capacity
- Influencing local politicians
- Silo mentality among teams and professions
- Lack of financial resources
- Lack of leverage with external stakeholders
- Lack of awareness and availability of public health evidence

The following themes emerged from the focus groups and interviews:

**Awareness of availability and potential of planning powers**
One interview participant suggested generally practitioners “don’t know they do (have enough planning powers).. (but) those powers have limitations” (Interview Participant E4 - transport). Practitioners were mainly aware of the range of planning powers (Legislative, Guidance and Levers) but not their potential in promoting all or some of the PHWEF themes. Planners were able to readily cite planning powers available in their localities including and in addition to those highlighted in Table 1.

**Availability and correlating evidence between environment and obesity**
The use of public health data as an evidence base in the planning system is a highly contested area during all stages of the planning process. Practitioners questioned the availability of the evidence-base to support decisions, in particular regarding the food environment. They further highlighted the lack of transferability in interpreting high level national and often international evidence for locality-specific planning policies, and for site-specific decision-making.

**Competing policy priorities**
While the NPPF sets out planning’s social role in supporting healthy communities, participants highlighted the imbalance in considering healthy weight environments and wider socio-economic issues. This imbalance is often manifested when economic and financial impacts take on prominence as a planning material consideration at the expense of people’s health and wellbeing. One interview participant suggested that “if you look at the six strands (PWEF themes) you are talking about, at the moment, Buildings is more than anything else. And that is the highest priority. The economy is the second. So everything then takes a lesser priority level” (Interview Participant E3 – public health).
Prescription in policy
Participants suggested the need for greater prescription in national policy and legislation to promote healthy weight environments. One interview participant suggested that “when you look at the guidance, it’s usually often a paragraph or a few lines. It’s not as prescriptive as it probably should be” (Interview Participant E2 - planning). As there is no explicit and direct national policy requirement for the planning system to address obesity as a specific planning objective or outcome, participants believed that the obesity problem would benefit from a more direct and explicit policy approach.

Local government resources and capacity
Reduced local government finances to both planning and public health departments were thought to be having a material impact on the capacity to implement actions. This reduced funding across the local authority can impact on overall staff numbers, and their visibility and accessibility by external and within internal stakeholders to advice on and collaborate on several issues through the planning process including but not limited to public health, obesity and the environment. Participants also noted the impact of expenditure on new and improving existing facilities and services, such as parks and playgrounds, which in turn can exacerbate local childhood obesity and physical activity rates.

Training, capacity building and learning
While the uniting of planning and public health systems originated from shared origins, participants were also concerned that there is no structured learning or opportunities to participate in building knowledge of each other’s systems and issues. Public health and planning professionals undergo structured education and assessment processes in order to secure academic and professional qualifications. But participants did not feel they had the appropriate practical knowledge of the ‘how’ to be able to take action. The knowledge and capability of practitioners were called into question and further training across all levels of education and continuing development was needed.

Conclusions and implications and actions for planning practice
The implications of this research are profound for national policy makers, local practitioners, and the wider research community.

For the research community
The research supports current and emerging evidence on the association between elements of the environment and obesity effect. But future research needs to gain a better understanding of the inter-connectedness of factors which underpin a healthy weight environment in a more consistent manner (Rutter et al., 2017).

For policy makers at national and local levels
The research supports the 2018 Childhood Obesity Plan statement that “each local authority already has a range of powers to find local solutions to their own level of childhood obesity but while some are already taking bold action, others are not” (DHSC, 2018). At the local level this means supporting local authority spatial plans and policies being revised to include healthy weight environment matters, and investing in effective planning actions as part of area-based initiatives such as the Healthy New Towns (NHS England, 2019), Childhood Obesity Trailblazers (LGA, 2018), London School Superzones, Local Delivery Pilots, and Garden Communities (MHCLG, 2018) programmes. Ideally, to gain a better understanding of the inter-connectedness of factors which underpin a healthy weight environment, these would be supported by evaluation from academic institutions.

For practitioners in local authority public health and town planning teams
For local authority practitioners tasked with implementing action to improve population health and reducing obesity, the research supports the proposition that planning powers already exist to tackle some or all of the PHWEF elements, but there are challenges in implementation. Overcoming these common challenges will require sharing knowledge, experience and collaboration to align actions on what is a set of complex societal and environmental issues.

In summary, the research has demonstrated and provided greater clarity on the specific contribution of the local authority planning function, with the support of public health activities, to tackling obesity by promoting healthy weight environments. There is already scientific consensus that living with excess weight is a risk factor for a range of chronic diseases, and impacting on people’s equality and access to quality of life. Also local authorities already have the planning powers to promote healthy weight environments. The time to act is now. The research findings are useful indicators of the current state of practice in order to progress beyond challenges to taking appropriate actions on planning healthier weight environments.

Data availability
Underlying data
FigShare: Focus Groups raw data feedback

This project contains the following underlying data:
- Stage Focus Groups feedback_CHANG.xlsx (Data from anonymous responses received from the two local authority Focus Group participants)

FigShare: Interviews transcriptions

This project contains the following underlying data:
- FINAL Interview Questions+transcriptions.pdf (Interview questions and transcriptions from each interview anonymised from national and local stakeholders and practitioners)

Data are available under the terms of the Creative Commons Attribution 4.0 International license (CC-BY 4.0).
Acknowledgments
We acknowledge support from Leeds Beckett University Carnegie School of Sport, Dr Claire Griffiths, research participants from the two local authority areas and national stakeholders, the Town and Country Planning Association and Public Health England.

References


PubMed Abstract | Publisher Full Text | Free Full Text


Open Peer Review

Current Peer Review Status: ✔️ ✔️

Version 1

Reviewer Report 26 February 2021

https://doi.org/10.21956/emeraldopenres.15064.r27398

© 2021 Vohra S. This is an open access peer review report distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Salim Vohra

1 Public Health Team, College of Nursing Midwifery and Healthcare, University of West London, London, United Kingdom
2 Public Health by Design, London, United Kingdom

Using planning powers to promote healthy weight environments in England

This is a carefully described and well thought through piece of work. The methodology used is sound. The underlying instruments and raw data are provided and accessible. A brief overview of the instruments and raw data confirms it is a high quality piece of research. The conclusion reached are insightful and sound, confirming past literature and adding some key new insights. This paper adds to the literature in the field.

Aspects that are unclear/need explaining in more depth:
The following does not preclude the paper’s publication but is likely to make it a stronger analysis and will enable it to make a bigger impact on public health and planning professionals.

The interconnecting themes are very good: obesogenic environments, whole systems approach, and planning system (laws, policy, regulations, guidance and practice).

CONCEPTUAL ISSUES

The connections between the three themes aren't well-discussed/explained across the paper. They are best considered in the background but then become submerged in the later discussion particularly findings and conclusion.

So, for example, the whole systems approach is discussed in the introduction but it's unclear how this emerges in/informs the findings and conclusion.

One suggested approach is to, first, explain a little more what is meant by whole systems (is it just a way of saying 'everything connects', that everything is interconnected and has to be tackled in
multiple sectors and multiple levels?), an example real or illustrative of whole systems thinking and planning would be good for the reader. It would give a more concrete sense of what this approach is about. This is particularly so, for planning professionals who are a key audience for this paper, and may not have come across the public health perspective of whole systems.

Linked to this is the question, what whole systems role do planning professionals have, is it that their work cuts across sectors and therefore they have a whole systems view of development in a locality? If so, again something on that would be helpful either in the findings or conclusion sections or across the paper.

Lastly, how can whole systems thinking, or the approach, be brought to bear to tackle the challenges set out by the participants? It must be that we need a whole systems approach to tackle these challenges?
For example can we use whole systems thing/a whole systems approach to positively deal with competing priorities in a way that makes sense to politicians, professionals and communities?

**METHODOLOGICAL ISSUES**

Obesogenic environments are defined as in homes and workplaces and not the wider built environment (Swinburn et al, 1999), is this an unintended omission? If not, then it needs to be explained. It's not the generally understood definition and not the implicit definition across the paper.

Did focus group participants and interviewees get an opportunity to see the raw data or initial themes of the focus groups and interviews and then clarify their answers?
It would be good to have a sentence on this and reasons why it was done or not.

Did participants suggest/recommend ways forward in tackling the above challenges, if so, it would be good, even in brief, to set out what their thoughts were on overcoming the barriers/challenges.

Lastly, and this may not be relevant/appropriate for this paper, there is no mention/reflection on the role of the researcher and whether and how they - their perspective - may have influenced the focus groups and interviews. Or what if anything was done to mitigate this e.g. keeping a reflective diary that was reviewed during the analysis stage, avoiding leading questions initially and then if the topic is not discussed the explicit/leading question is asked, listening through audio to scrutinise the role of the researcher during the focus groups/interviews by the main researcher and/or by a peer.

**Is the work clearly and accurately presented and does it cite the current literature?**
Yes

**Is the study design appropriate and is the work technically sound?**
Yes

**Are sufficient details of methods and analysis provided to allow replication by others?**
Yes

**If applicable, is the statistical analysis and its interpretation appropriate?**
Not applicable

Are all the source data underlying the results available to ensure full reproducibility?
Yes

Are the conclusions drawn adequately supported by the results?
Yes

Is the argument information presented in such a way that it can be understood by a non-academic audience?
Yes

Does the piece present solutions to actual real world challenges?
Yes

Is real-world evidence provided to support any conclusions made?
Yes

Could any solutions being offered be effectively implemented in practice?
Yes

**Competing Interests:** No competing interests were disclosed.

**Reviewer Expertise:** health impact assessment, healthy urban planning and development, health in all policies

I confirm that I have read this submission and believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard.

Reviewer Report 19 January 2021

https://doi.org/10.21956/emeraldopenres.15064.r27300

© 2021 Fleischhacker S. This is an open access peer review report distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Sheila E. Fleischhacker

Law Center, Georgetown University, Washington, DC, United States

This paper is well put together with background, methods, results, and discussion with recommended actions. The Tables and Figures add value.

Minor edits -

Introduction - Note the United Kingdom (UK) Government Office...
Table 1 - Bold Use of Class Order? Watch use of capitalization or not in the left side column

Is the work clearly and accurately presented and does it cite the current literature?
Yes

Is the study design appropriate and is the work technically sound?
Yes

Are sufficient details of methods and analysis provided to allow replication by others?
Yes

If applicable, is the statistical analysis and its interpretation appropriate?
Yes

Are all the source data underlying the results available to ensure full reproducibility?
Yes

Are the conclusions drawn adequately supported by the results?
Yes

Is the argument information presented in such a way that it can be understood by a non-academic audience?
Yes

Does the piece present solutions to actual real world challenges?
Yes

Is real-world evidence provided to support any conclusions made?
Yes

Could any solutions being offered be effectively implemented in practice?
Yes

Competing Interests: No competing interests were disclosed.


I confirm that I have read this submission and believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard.