A review of UK Media coverage of physical activity associated with the
publication of special issues in a high impact medical journal

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Abstract

Objectives: The media is a substantial vehicle for conveying public health messages to the public. This study examined the extent to which the publication of special issues in a high impact medical journal in 2012 and 2016 generated media interest in physical activity and health in the UK and explored the main issues that were reported.

Study Design: Systematic narrative review of print media.

Methods: Relevant print news articles were identified by searching Factiva and Google News. The timeframe of each search was two weeks, using the publication date of each special issue as the anchor point. Overall, 20 articles were included in the analysis for 2012 and 37 articles for 2016.

Results: The news media coverage was encouraging for the profile of physical activity and health. In 2012 and 2016, common themes included the benefits of physical activity and the risks of being inactive, comparisons between mortality rates from physical inactivity and smoking, and the recommended volume of physical activity to benefit health.

Conclusions: The profile given to an issue through prestigious scientific publication is one of the levers for community attention and policy change. Efforts are needed to further utilise the media for improving policy, practice and public awareness, which are antecedents to population health change.

Keywords: media, content analysis, physical activity
**Introduction**

The history of epidemiological evidence into the health benefits of physical activity dates back to the 1950s. Based on this cumulative evidence, 150 weekly minutes of moderate intensity physical activity are recommended for health. Data suggest that many adults in the UK do not achieve recommended physical activity levels, and also that awareness of the current physical activity recommendations is relatively low.

The production and distribution of health information, for example through leaflets, newspaper articles, and radio and television adverts, are aimed at three key outcomes: increasing knowledge of accurate health information; changing health related attitudes; and influencing health behaviours. Whilst the media environment is ill-defined, several facets are useful to consider: delivery platforms and channels; the amount of media consumed; the content of the media consumed; and the commercial purpose of media content.

Whilst many people now prefer to ‘read on screen’, newspapers – including print and online – are still consumed by a large proportion of the UK adult population on a regular basis. Whilst it is not well understood how effective print media can be in changing knowledge, attitudes, and behaviour towards physical activity (in contrast to mass communication campaigns, for example), it is important to ensure that media coverage is based on sound evidence, is presented in a balanced and fair way, is represented in the way the authors of the evidence intended, and that the exposure of an issue is proportional to its importance.
In 2012, the medical journal, the Lancet, published a special issue on the topic of physical activity, thematically aligned to coincide with the London 2012 Summer Olympic Games (http://www.thelancet.com/series/physical-activity). The Lancet strives to make science widely available and at a global scale, and achieves this through publishing globally relevant papers and ensuring that the research receives appropriate exposure and mobilization to influence policy and practice. As one of the most prestigious medical journals, the publication of a Lancet special issue denoted a landmark development for the field of physical activity and health, and provided an important opportunity to raise awareness of the issue.

The special issue was launched on 18 July 2012, less than two weeks prior to the start of the London 2012 Olympics. The focus of this Lancet series was to identify physical inactivity as a global health issue relevant to non-communicable disease prevention. In addition, the coincident timing with the London Olympics was intentional, with the aim of increasing appreciation of the societal and health benefits of physical activity for everyone, alongside the (Olympic) investment in elite sport and “mega-events”. The 2012 Lancet physical activity series comprised five papers covering the topics of: the global burden of physical inactivity; levels and trends in physical activity worldwide; correlates of physical activity; evidence-based strategies for effective physical activity programs; and how a multi-sector and systems-wide policy approach is essential for increasing population-levels of physical activity.

A second special issue on physical activity was published in the Lancet in 2016, published to coincide with the Rio de Janeiro Olympic Games.
The 2016 special issue updated the evidence on physical activity and health, surveillance, interventions and policy. It featured the first global estimate of the economic burden of physical inactivity and the largest harmonized meta-analysis on the joint health effects of physical activity and sedentary (sitting) behavior.

This paper aimed to examine the newspaper coverage generated by the 2012 and 2016 Lancet special issues in the UK. The specific research questions were:

1) How much newspaper coverage was generated in the UK following the publication of the Lancet 2012 and 2016 special issues on physical activity?

2) What types of issues related to physical activity featured in the media coverage?

3) How was the issue of physical activity framed within the media?

4) How did media coverage of the 2012 and 2016 special issues differ?

The study was restricted to the UK media for several reasons. The culture of media varies by country and thus taking a more global view of media coverage may mask the differences in the way the media operates nationally. The launch events for both series of the Lancet were held in the UK, which may have led to greater interest from the media to that observed in other countries. Furthermore, focusing on the UK (as opposed to global coverage) provided a clear denominator of media coverage for analysis.
Methods

Relevant media articles were identified by searching Factiva (www.factiva.com) and Google News (http://news.google.com). Google News covers over 50,000 news sources worldwide. Factiva covers only 10,000 international news sources but covers all UK national and many local newspapers. By including both of these major databases the search can be presumed to be comprehensive. The search was conducted on 27 October 2016 using the search terms ‘physical activity’ AND ‘Lancet’. The timeframe of each search was two weeks, using the publication date of each Lancet series as the anchor point. Thus the analysis covered the timeframes of 18 July to 1 August 2012 and 27 July to 10 August 2016; beyond these dates the news feeds were overwhelmed with reporting the respective Olympics. The Factiva search was limited to ‘Newspapers: UK’ (print and online) and the Google News search was filtered by ‘UK region’, excluding blogs. All articles were considered relevant if they focused on physical activity and made reference to the Lancet special issues.

The data were analysed using a combination of quantitative and qualitative techniques. A data extraction sheet was developed to structure the qualitative content analysis. This included a series of a priori codes which were developed by the research team based on the anticipated content of the media coverage. Each article was read by two members of the research team [KM and BM]. One researcher [KM] extracted each line of content from each article and attempted to assign it to a code using the data extraction sheet. Additional codes were created for relevant data which did not fit any of the pre-existing codes. The second researcher [BM] followed the same coding procedure. Three members of the research team [KM, BM, and another researcher] reviewed and discussed the codes until consensus was reached.
[KM, BM, JC] reviewed the two sets of analysis and discussed any discrepancies between the assigned codes. These discrepancies were resolved through discussion until consensus was reached on the most appropriate code for each sentence of text. Frequencies were calculated to determine the total volume of media coverage related to each code in both 2012 and 2016. Qualitative content analysis was used to explore the ways in which the media coverage reported on the ten most common themes in each year. This involved a review of the similarities and differences in the reported content as well as a critique of the ways in which physical activity was framed in the media.

**Results**

A total of 27 articles were identified for 2012 and 46 for 2016. After removing duplicates and articles that were irrelevant, 20 articles were included in the analysis for 2012 and 37 articles for 2016 (see Fig 1). For 2012, one study was duplicated and 6 articles were deemed irrelevant; three of these were quizzes containing a question on physical activity prevalence, one was about malaria, one was about unfit Indians, and the other focused on obesity and the fast food industry. For 2016, two articles were duplicated and seven were deemed irrelevant. The focus of each of the excluded papers was: obesity and brain function, depression, acupuncture and dementia, the importance of children playing outdoors, standing desks, swimming and arthritis, and whether transgender should be diagnosed as a mental disorder.

Fig 1: Flow chart for the identification of relevant media articles
The full list of included articles can be found in Appendix 1. Table 1 shows the number and percentage of media articles published on the launch day and on each day during the succeeding two week period in both 2012 and 2016. In 2012, 60% of media coverage was published on the launch day of the Lancet special issue. 25% was published during days 1 to 7 post launch and 15% was published between days 8 and 14. In 2016, just 5% of media coverage appeared on the launch day, with the majority of media articles (65%) being published the following day. Consequently in 2016, almost 90% of articles were published during days 1 to 7 post launch, and the remaining 5% were published between days 8 and 14. The 2016 articles were, on average, longer than the articles published in 2012, by approximately 200 words.

Table 1. Number of articles published on the launch day of each special issue and during the succeeding two week period.

All text was assigned to a theme which summarised the broad content or intent of each sentence. The leading themes in each year are shown in Table 2.

Table 2. Frequency of the ten most commonly reported themes from each Lancet series, in descending order

The Lancet special issue in 2012 generated 20 media articles, with most reporting on the health benefits of physical activity. This was generally framed as being something that was previously unknown (e.g. “researchers have said the consequences of a layabout lifestyle..."
may be more serious than previously thought”\(^{12}\). Ten of these articles reported on the similarities in global mortality attributable to physical activity and smoking – a novel conclusion from the Lancet paper which re-analysed the global burden of disease and life expectancy related to physical inactivity\(^{13}\). This was characterised by statements such as “Research suggests that as many as one in every 10 deaths worldwide are the result of lazy, inactive lifestyles - almost as many as are caused by smoking”\(^{14}\).

In relation to the 2012 special issue, the media focused strongly on the international comparisons of prevalence as reported in the surveillance paper\(^ {15}\). Thirteen articles (65%) referred to international comparisons. Ten of these papers referred to Britain being more inactive than the US with statements such as “Bone idle Britain’s are among the laziest people in the world and even lag behind America in the activity stakes”\(^ {16}\). Seven made comparisons with ‘neighbouring’ France and nine highlighted Britain as being the third most inactive country in Europe. Ten of these articles referred to 63% of the UK population being insufficiently active. Whilst seven articles correctly reported that this 63% of the population were failing to meet recommended physical activity levels, three articles mis-interpreted not meeting physical activity guidelines as doing almost no activity at all (e.g. “sixty three percent of people in Britain take no exercise”\(^ {17}\)). Fewer articles focused on the overall global prevalence of inactivity (n=9) and the number of deaths from inactivity globally (n=9).

Sixty percent of articles (n=12) highlighted the recommended amount of physical activity for health, of which half correctly referenced the current activity guidelines. The others referred to: old recommendations (n=3); inaccurate recommendations (n=2); or included judgements on the physical activity recommendations without quantifying the recommended amount of
activity (n=1) (e.g. "For me the Government recommendations of activity per week isn’t enough”\textsuperscript{18}).

Nine articles included a ‘call to action’. These differed considerably across articles. One called for doctors to screen patients on their physical activity habits, whilst another suggested that doctors should have a “bigger role in policy making, if only to harangue authorities about bicycle paths”\textsuperscript{19}. One article focused on closing the streets to cars on Sunday mornings, and another concentrated on refocusing schools away from creating prize-winning athletes towards priming all pupils to pursue physical activities. Several articles emphasised the need for governments to take greater responsibility for physical activity as a public health issue, and one specifically encouraged governments to “make exercise more affordable”\textsuperscript{20}. Only one article identified a broad range of sectors and settings with a role in physical activity promotion, including government, schools, and workplaces, as well as the role of individuals in making sensible lifestyle choices\textsuperscript{21}. The tenth most common theme in the 2012 media, identified in 7 articles, was an emphasis on incorporating physical activity into everyday life. The majority of these articles (n=5) emphasised walking as an ideal form of activity, particularly as ‘a great way to start’. The two remaining articles mentioned commuting to work (by walking or cycling), and using the stairs, bike riding and gardening.

The 2016 Lancet series resulted in nearly twice as many media articles in the UK as the initial 2012 series. The amount of physical activity needed to offset the health risks of sedentary behaviour was the most commonly cited theme in the 2016 media coverage, with all but one article highlighting this key finding. The phrasing was commonly aimed at allaying fears
among office workers about the detrimental impact of sitting on their health, stating that the dangers of sitting could be ‘offset’ or ‘undone’ by an hour per day of physical activity. Almost as commonly cited, was that this hour of activity can be achieved through unstructured lifestyle activities such as walking (e.g. “Workers who spend the day sitting at a desk should walk for an hour a day to offset the health risks of their sedentary jobs, a comprehensive analysis has shown” 22).

Over 85% of articles mentioned either the benefits of being active or the risks of being inactive (n=32 articles in total). All of these identified the risks of premature mortality from leading an inactive lifestyle, with some taking a more specialised focus. Five articles alluded to the mechanisms underlying the health outcomes of an inactive lifestyle, for example by explaining that “Experts believe that failing to do enough exercise gradually reduces our body’s ability to carry out essential tasks. This includes a reduction in lung capacity, issues with digestion and the breakdown of sugar - eventually exposing us to numerous health problems” 23. Seven articles referred to the mechanisms underlying the risks of sedentary behaviour, with statements such as “The studies could not pinpoint why long periods of sitting were specifically risky. But the scientists involved said movement appeared to assist the body’s metabolism, while sedentary periods could influence hormones such as leptin, which regulate energy balance” 24. Only one article explicitly emphasised that working in an office and ‘sitting’ is not the primary concern, but rather a lack of physical activity. This article stated: “It has nothing to do with working in an office. It’s not even really about sitting but about lack of movement. As several reports have also found, standing for long periods doesn’t do you much good either.... Among those subjects of the research who sat for at least eight hours daily and managed less than five minutes activity (more people than
you might think) mortality rates were 9.9 per cent. But for those who spent just as long seated, but managed at least an hour’s exercise, death rates drop to 6.2 per cent”.

An explanation of the methods used to generate the results was included in 24 articles (60%). Several articles also highlighted the limitations of the research, for example: “Like all population studies, findings in the paper are based on estimates, as it would be impossible to quantify the exact contribution of a sedentary lifestyle to each case of disease. The study used the World Health Organization (WHO) guidelines for physical activity – a modest 150 minutes per week – and relied on individuals’ self-reported data, which is not the most reliable.” Such scrutiny of the research methods did not feature in the media coverage of the 2012 Lancet series.

Twenty-two out of 37 articles included a ‘call to action’. Over half of these articles urged office employers to be understanding about staff taking short breaks from their desks. Several articles identified a range of ways in which employers might encourage more physical activity among their workforce including the provision of gyms and showers, tax breaks and the use of activity trackers. One article recommended that workplaces consider introducing policies such as not sending emails to colleagues who are situated in the same building and the installation of sit-stand desks. Of the 21 articles which referred to the causes of inactivity and high levels of sedentary behaviour, all made reference to the workplace as a major contributor. As such, it is unsurprising that employers were identified as having a key role to play in addressing the high volume of sedentary behaviour in modern society. Compared to 2012, less focus was placed on the need for individuals to take responsibility for their own lifestyle choices, which was only mentioned in six articles. In
addition, six articles emphasised the role of government policies in changing lifestyle behaviour and making environments more supportive of physical activity. Several papers directly quoted the suggested actions made by the study authors which included placing bus stops further apart, closing streets to cars on weekends, and opening free gyms in parks. One article expressed a negative perspective on the authors’ recommendations for making environmental changes, as quoted here: “It is comforting to be told that working less in an office is good for you, but the experts go too far as usual by urging measures of compulsion. They ask that bus stops be placed further apart, and that streets be closed to traffic during weekends, to enforce more walking. This might improve the health of the office worker, but what about the old? Don’t they care about them?”

The physical activity recommendations were mentioned in more than half of the articles in 2016 (n=20). Three articles referred to the difficulty for most people to achieve the current physical activity recommendations with statements such as: “For many of us with sedentary jobs, meeting the World Health Organization’s target of 150 minutes of exercise per week can be difficult.” Given the finding in the Ekelund paper, that one hour of exercise per day may be necessary to counteract the negative health effects of prolonged sitting, many articles noted that the current UK and World Health Organization (WHO) guidelines on physical activity may be insufficient. For example, statements such as that quoted here appeared in 13 articles: “These findings suggest that in order to eliminate this additional risk of premature death, a greater level of physical activity is required than that which is recommended by current physical activity guidelines.” Of the 20 articles that ‘quoted’ the UK and/or the WHO physical activity recommendations, less than half conveyed exactly accurate information. Eleven papers claimed or inferred that the recommendation is to
achieve 30 minutes of physical activity per day and suggested that this should now be
doubled, in light of the new finding that 60 minutes of physical activity per day is needed
(specifically) to offset the risks of sedentary behaviour

Whilst the amount of activity needed to offset the detrimental effects of sedentary
behaviour was cited in 36 articles, the economic costs of inactivity – an analysis which was
also the first of its kind and an anticipated big news story – was cited by only 19 articles.
Nineteen articles also reported on the global burden of mortality from physical inactivity in
comparison to smoking, which was an issue carried forward from the 2012 series.

The tenth most commonly cited issue in the 2016 Lancet series (mentioned in 18 articles)
was that the recommended one hour of activity could be accumulated throughout the day,
and that any amount of activity – even if the full hour is not achieved – is better than
nothing. For example: “You can split it up over the day but you need to do at least one hour”
and “An hour of physical activity per day is the ideal, but if this is unmanageable, then at
least doing some exercise each day can help reduce the risk.”

Discussion

Overall the media coverage of physical activity following the launch of the Lancet special
issues was encouraging for the profile of physical activity and health. The Lancet series
presented an opportunity to target community and policymakers awareness of physical
activity as an issue, whereas previously it had been considered the relatively ignored
“Cinderella” risk factor. Twenty articles appeared in the UK media in 2012, covering many major newspapers, and this coverage almost doubled in 2016. As well as a greater number of articles being published in 2016, these articles were, on average, longer than the articles published in 2012. The increase in coverage between 2012 and 2016 could reflect increasing interest from the media in public health issues including physical activity, the high levels of interest from the media in the topic of sitting and health, and increased efforts by researchers to gain media exposure of scientific advancements in knowledge. The increase in coverage of physical activity in the media over time is consistent with what has been observed in other countries. Interestingly, whereas the majority of media articles appeared on the same day as the launch in 2012, the majority were published on the day after the launch in 2016, suggesting less groundwork may have been undertaken in 2016 to brief the major media outlets in advance.

Media coverage in both 2012 and 2016 covered several common themes including the benefits of physical activity and the risks of being inactive, comparisons between mortality rates from physical inactivity and smoking, and the recommended volume of physical activity to benefit health. Over half the media articles in both Lancet series’ made reference to the physical activity recommendations, relevant to increasing community awareness of recommended behaviours. Across the collective media reporting in 2012 and 2016, over half the articles conveyed inaccurate information related to recommended physical activity levels. The most common mis-reporting was that the recommendation was the former “30 minutes a day” recommendation, and that this should be doubled to offset the risks of sedentary behaviour. Furthermore, several articles mis-interpreted ‘insufficiently active’ (failing to meet recommended physical activity levels) as undertaking no physical activity at
all. It is critical for researchers to ensure that media outlets fully understand the research
evidence in order to avoid this sort of mis-reporting, which is likely to cause confusion
among the general public.

In 2016 there was a stronger emphasis on how the recommended activity levels could be
achieved through undertaking unstructured lifestyle activities as opposed to more formal
gym or sports activities. This information is important for persuading the public that the
current physical activity recommendations are achievable.

Media attention tends to focus on a key headline finding. In 2012 there were two major
headlines that grabbed the media’s attention; how inactive and ‘lazy’ Britain was as a
nation, and that physical inactivity is responsible for as many deaths annually as smoking.
The headline on low levels of physical activity in Britain was an unintended focus of media
attention. Comparative “rankings” between nations is problematic, as the use of different
physical activity survey questions produces different prevalence estimates. Standardisation
of physical activity measurement across countries remains a challenge to overcome.

In 2016, all but one article focused on the headline finding of the Ekelund paper, that an
hour a day of physical activity offsets the risks of eight hours of sitting. The results
presented in the Ekelund paper came from the largest harmonized meta-analysis on the
joint health effects of physical activity and sedentary behavior. Thus the scale of the data,
the novelty of the analysis, and the practical applicability to the majority of the population
with office based occupations likely contributed to media interest. A key finding from the
Ekelund paper, which was not well reported, is that for the segment of the population who
are not physically active, prolonged sitting still poses a clear dose-response synergistic risk,
with the combination of both low active and high sitting equivalent to the global risks
attributable to smoking or obesity. A second innovative paper in 2016 presented the first
global estimate of the economic burden of physical inactivity, but was largely overlooked
in UK media coverage. It is possible that prolonged sitting is still viewed as a ‘novel’ and
interesting risk behavior and thus more easily attracted media attention. Another reason for
high media interest in the Ekelund paper may be that it refuted the oft (incorrectly)
reported message that ‘high levels of sitting time are harmful to health no matter how much
exercise one undertakes’. Many articles in both 2012 and 2016 included a ‘call to action’. In 2012, this call to action
focused on many different actors with a role in physical activity promotion, including
governments, researchers, doctors, schools, employers, and individuals themselves. In the
2016 special issue, the focus on office workers attenuating the health consequences of a
sedentary job led to a call to action which focused primarily on governments and employers,
and workplace interventions. Only five of the 22 articles that included a call to action in
2016 made reference to other sectors and settings for action. Of concern was that over half
of the 2016 reports which included a call to action urged office employers to be
understanding about staff taking short breaks from their desks, which was not a message
which was included in any of the Lancet 2016 papers. Simply taking short breaks from sitting
is unlikely to contribute to achieving the necessary one hour of daily physical activity (of at
least moderate intensity) required to combat the risks of sedentary behaviour. Therefore
suggesting to the public that taking short breaks from sitting is sufficient, is misleading and
counter-productive to the mission to promote population health through increased physical activity.

The Lancet special issues on physical activity in 2012 and 2016 were launched to coincide with the summer Olympic Games. The rationale for this was to make the case that investment in elite sport should be balanced with investment in creating a more active society. More references were made to the Olympics in the 2012 articles, which may be linked to the Olympics being hosted in London. Whilst the coincident Olympics was referred to in several articles, none explicitly picked up on the issue of resource allocation for elite sport versus physical activity, and the Lancet series’ have not managed to leverage the Olympics to promote sport for all. If this is an aim of future Lancet series’ on physical activity, it may be necessary to include papers that focus specifically on the potential of sport to promote changes in population health and the recommended intervention strategies. Furthermore, the lead researchers may have to raise this issue of resource allocation more explicitly in interviews and/or other interactions with the media.

Whilst the research community acknowledges the importance of the Lancet special issues in raising the profile of physical activity as a major risk factor for non-communicable diseases, more research is needed to understand the impact of the Lancet series’ and the associated media coverage in increasing public knowledge and awareness. Furthermore research is needed to understand the impact of these special issues on national and international policy, and any subsequent impact on public health.
Several limitations of this research should be noted. Firstly, as with all media analysis, the findings and conclusions rely on researcher interpretation. The consensus process, involving three members of the research team, helped to ensure that the findings reflect the media content and were not unduly influenced by individual opinion. Secondly, media content analysis is often devoid of a theoretical base or attempts too liberally to draw meaningful inferences about relationships and impacts. As such this paper reports on the content of the media coverage but does not attempt to make inferences about the potential impact of the media coverage on knowledge, attitudes or behavior towards physical activity. It is not possible to determine the underlying causes of increased media attention between 2012 and 2016. It is possible that media activity has increased generally over time. It is also possible that the press strategy of the Lancet varied between the 2012 and 2016 publications and the small number of media articles published on the launch day in 2016 in comparison to 2012 seems to support this. Finally, whilst this research provides a comprehensive analysis of UK media coverage related to the Lancet 2012 and 2016 special issues, the findings are not likely to be generalizable to other contexts.

This is the first study to explore the impact of prestigious scientific special issue publications on media interest in the topic of physical activity. A further special issue is planned to coincide with the 2020 Olympic Games in Tokyo. This will shed more light on trends in media coverage on this topic over time. In addition, research should be undertaken at the time of release, to determine the impact of physical activity related media coverage on public awareness of the topic, as well as attitudes and behaviour.
Conclusions

The Lancet physical activity series’ attracted considerable attention in the UK media. This paper has highlighted the key issues that were reported in the media, as well as the ways in which the Lancet series’ content was framed. Raising awareness of physical inactivity can assist the broader prevention debate. Country comparisons of physical activity prevalence seem to capture media interest, although substantial caveats exist where there are different surveillance questions used to estimate prevalence. The Lancet series’ contextualised physical activity, not just in a health setting, but as a policy issue for multiple sectors. Ways to address physical inactivity was a focus of the media reporting, which could assist future cross-sectoral action. If a key objective of the Lancet special issues is to make the case for greater investment in physical activity and public health, compared to resource allocations to elite sport, this needs to be made more explicit in media reports. The profile given to an issue through prestigious scientific publication is one of the levers for community attention and policy change. Efforts are needed to better utilise the Lancet special issues for improving policy, practice and public awareness, which are antecedents to changes in population health.

Competing interests

The authors declare that they have no competing interests.

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Author contributions

KM and JC conceived the idea for the paper. BM undertook the searches with advice from KM and JC. KM and BM undertook the analysis, which was verified by JC. KM drafted the paper with support from BM and JC. AB assisted in revising the manuscript. All authors read, revised, and approved the final manuscript.

Ethical approval

This study involved a review of publically available documents. No participants were involved, thus ethical approval was not required.
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