

Overlooked & underserved: pregnant & postnatal women's engagement, opportunities & resources for physical activity during COVID-19 lockdowns in the United Kingdom

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Executive summary

Physical activity (“PA”) is good for physical and mental health, and healthy pregnant and postnatal women are encouraged to accumulate 150 minutes of moderate intensity PA per week and engage in strength-based activities on two days of the week.

Many pregnant and postnatal women don't achieve these recommendations, and relatively little is known about how the COVID-19 pandemic impacted PA in pregnant and postnatal women in the UK. Using data collected during each of the three COVID-19 lockdowns periods in the United Kingdom (1.0: April – July 2020; 2.0: October – December 2020; 3.0: January – April 2021), this report describes pregnant and postnatal women's PA engagement, opportunities, and resources to support PA during the COVID-19 pandemic.

Women who were pregnant or had given birth within the last 12 months; were 18 years or older; and resident in the UK during the COVID-19 pandemic were eligible to take part. Responses were provided by 721 women (403 pregnant and 318 postnatal).

Women reported low levels of PA compared to pre-lockdown; pregnant women reported declining PA during lockdown 1.0 and 2.0, whereas postnatal women reported declines during lockdown 2.0 only.

Women felt their opportunities and ability to be active had also been negatively impacted by the pandemic. Yet despite this, at all time points, women perceived themselves to be more active in the previous week compared to their pre-lockdown activity levels. Women used a wide range of resources to support their PA during lockdown, including online content and social media (e.g. YouTube, Instagram), yet only 52% of pregnant and 43% of postnatal women had been given information about PA during or after birth respectively.

The COVID-19 pandemic further impacted already low PA levels in pregnant and postnatal women. Importantly, women felt opportunities and ability to be active were decreased during lockdowns and only half had received advice about engaging in physical activity during and after pregnancy.

This suggests that lockdowns presented additional challenges for women to engage in recommended levels of PA. Given women are increasingly accessing online resources in addition to more usual healthcare-based advice, qualified professionals and quality assured evidence-based content is required to support pregnant and postnatal women to achieve recommended activity levels safely.

Background

Physical activity (PA) is known to benefit physical and mental health across the life course,¹ including during pregnancy and the postnatal period. Unique benefits to these groups include a decreased risk of pre-eclampsia, gestational hypertension, gestational diabetes, excessive weight gain, delivery complications and postnatal depression, and fewer newborn complications².

Recent evidence also suggests that the incidence of depression, pre-eclampsia and gestational diabetes may be reduced by 40–67%, without increasing the risk of miscarriage, preterm delivery or having a small for gestational age baby 3–5.

The importance of PA for women's and their infant(s)' health is reflected in the PA guidelines for pregnancy and postpartum women in a number of countries, and by the World Health Organisation.^{1,2} In the United Kingdom (UK), the Chief Medical Officers (CMO) recommend healthy pregnant women without contraindications accumulate 150 minutes of moderate intensity PA each week, and incorporate strength-based activities on two days of the week.¹

Women who engaged in vigorous intensity activities before pregnancy can continue to do so but are advised to seek medical advice if they significantly exceed the guidelines.²

Yet despite the known benefits, PA levels are consistently reported to decline during pregnancy and often remain low postnatally.^{6–8} Low levels of PA are often associated with increased sedentary behaviour, which is independently associated with poor physical and mental health, and social outcomes.⁹

A wide range of factors are thought to contribute to the low uptake of PA during pregnancy and postpartum – including barriers such as nausea, fatigue and lack of time,¹⁰ and concerns about risks and social pressures from family and friends have been noted.¹¹

In addition to these barriers, the COVID-19 pandemic likely disproportionately impacted pregnant women. At a population level, over 40% of adults reported lower levels of PA during the lockdown periods.¹² However, early on in the pandemic, pregnant women were identified as a vulnerable group and recommended to self-isolate as a precaution against contracting COVID-19, thereby limiting their opportunities to be active.^{13,14}

Antenatal and clinical appointments were reduced, forcing women to look elsewhere for sources of information about safe physical activities to engage in.¹⁵ The closure of gyms and swimming pools (with swimming being a popular activity during pregnancy), and of schools and childcare facilities also reduced the time available for engagement in structured physical activities particularly for pregnant women and/or those who were already parents.¹⁶ In combination, these factors likely disproportionately impacted PA opportunities for pregnant and postpartum populations.¹⁶

The extent of these challenges remains largely unexplored, and as PA monitoring was deemed a lesser priority amid more pressing economic concerns,¹⁷ relatively little is still known about how COVID-19 impacted PA for pregnant and postpartum women specifically. However, emerging evidence from studies conducted during lockdown suggest that pregnant and postnatal women were less able to be physically active during this time.

One study, conducted in Northern Ireland, reported that only 23% of pregnant women with gestational diabetes met the guidelines for PA during the pandemic.¹⁸ Engagement in PA was also reduced for 64% of pregnant and postnatal women due to lockdown measures in another Canadian study,¹⁹ with 72% of women surveyed stating that they also experienced moderate to high anxiety, compared to 29% of women before the pandemic.

Therefore, reflecting on how COVID-19 impacted on women in the UK, in addition to the challenges the pandemic imposed on their activity behaviour, can provide important information about how to better support those at risk of inactivity should we be faced by similar circumstances in the future.

Aims

This report explores the PA behaviours of pregnant and postpartum women in the UK during the three COVID-19 pandemic lockdown periods, to better understand how their behaviour was affected and importantly, to learn from this to ensure that key stakeholders can support these women in the future.

It describes women's engagement in physical activities, their perceived opportunities to be active, and the related resources they accessed around PA during each of the three lockdowns.



Methods

A market survey was conducted in the UK by the Active Pregnancy Foundation²⁰ a national registered charity, in association with the This Mum Moves project²¹, in each of the three UK national lockdown periods spanning: April to July 2020 (1.0), October to December 2020 (2.0), and January to April 2021 (3.0).

Women who were pregnant or postnatal (given birth within the last 12 months); 18 years or older; and resident in the UK during the COVID-19 pandemic, were eligible to take part. Surveys were advertised through various social media and online outlets. Participation was voluntary and each survey was prefaced with a comprehensive purpose statement, followed by a requirement to consent to anonymous data collection. Participants were informed that they were free to stop and withdraw from the survey at any point.

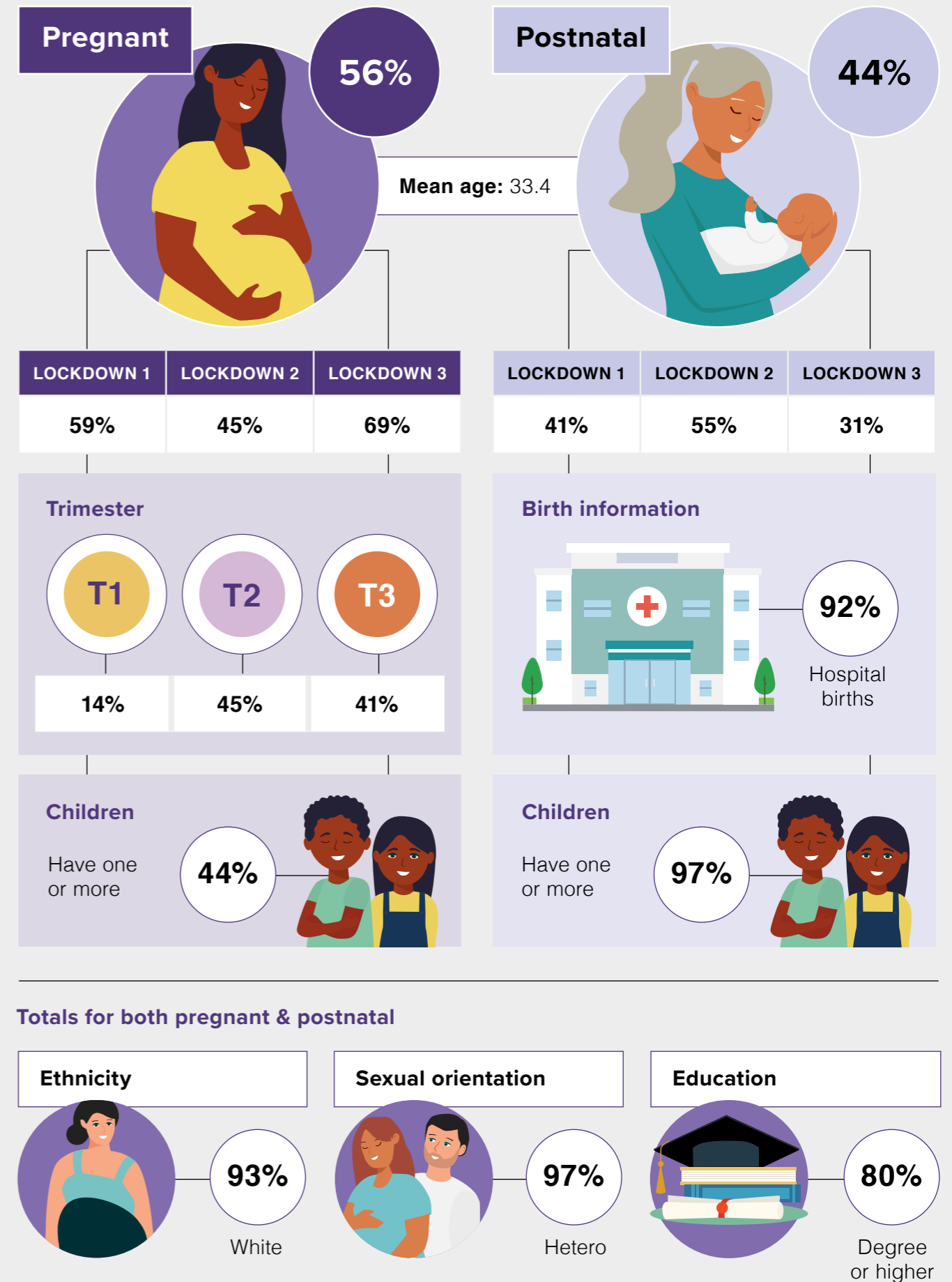
Women provided basic demographic information; information about their pregnancy, birth, and postnatal status where relevant; activity levels before and during lockdown; their perceptions about opportunities to be active; whether they had been advised about PA; and sources of PA information. Postnatal women whose baby was <12 weeks were excluded from engagement analyses, in line with national guidelines emphasising that PA be built up gradually after childbirth, depending on birth experience and recovery. Descriptive statistics and analysis of data was conducted using STATA (SE) 15, with significance set to $p < 0.05$.

Participants

A total of 722 women (404 pregnant and 318 postnatal) completed the surveys over the three time points (i.e. lockdown periods).

The majority of participants lived in England, and were predominantly located in London (n = 131; 1.0 = 52; 2.0 = 55; 3.0 = 24) and the South East (n = 123; 1.0 = 68; 2.0 = 36; 3.0 = 19). Of the women included, 59 (1.0 = 29; 2.0 = 19; 3.0 = 11) participants had to self-isolate at some point during the COVID-19 pandemic because they displayed symptoms; 88 (1.0 = 31; 2.0 = 38; 3.0 = 19) participants had to self-isolate at some point during the COVID-19 pandemic because someone in their household displayed symptoms.

Who participated...



1. What was the impact of COVID-19 lockdowns on women's engagement in physical activity?

All women, regardless of pregnancy or postnatal status, were more likely to state that they perceived their PA levels in the last week to be higher than their activity levels pre-lockdown. However, women's reported levels of physical activity both pre- and during lockdowns seemed to contradict this perception.

Pregnant women



The percentage of pregnant women meeting PA guidelines was lowest during lockdown 1.0 (19%); levels were low in lockdowns 1.0 and 2.0, but significantly more women reported meeting guidelines in lockdown 3.0.

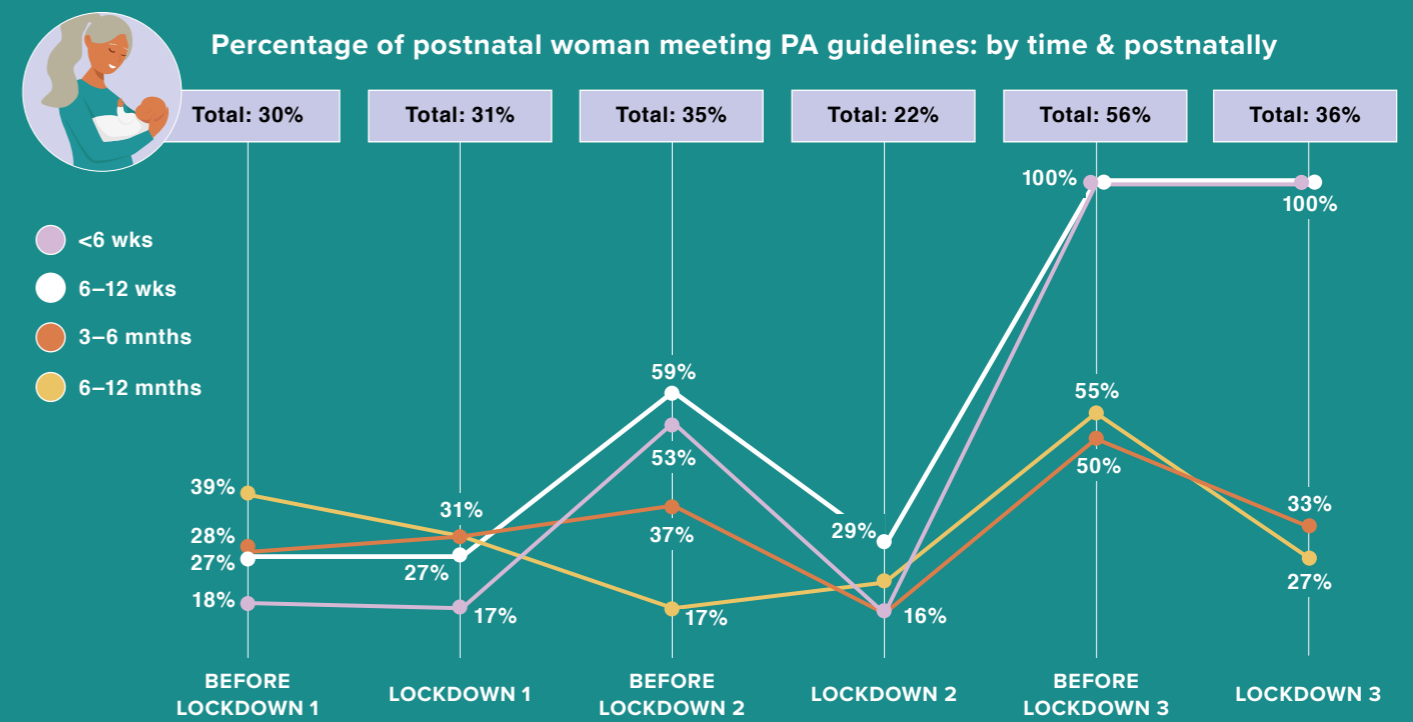
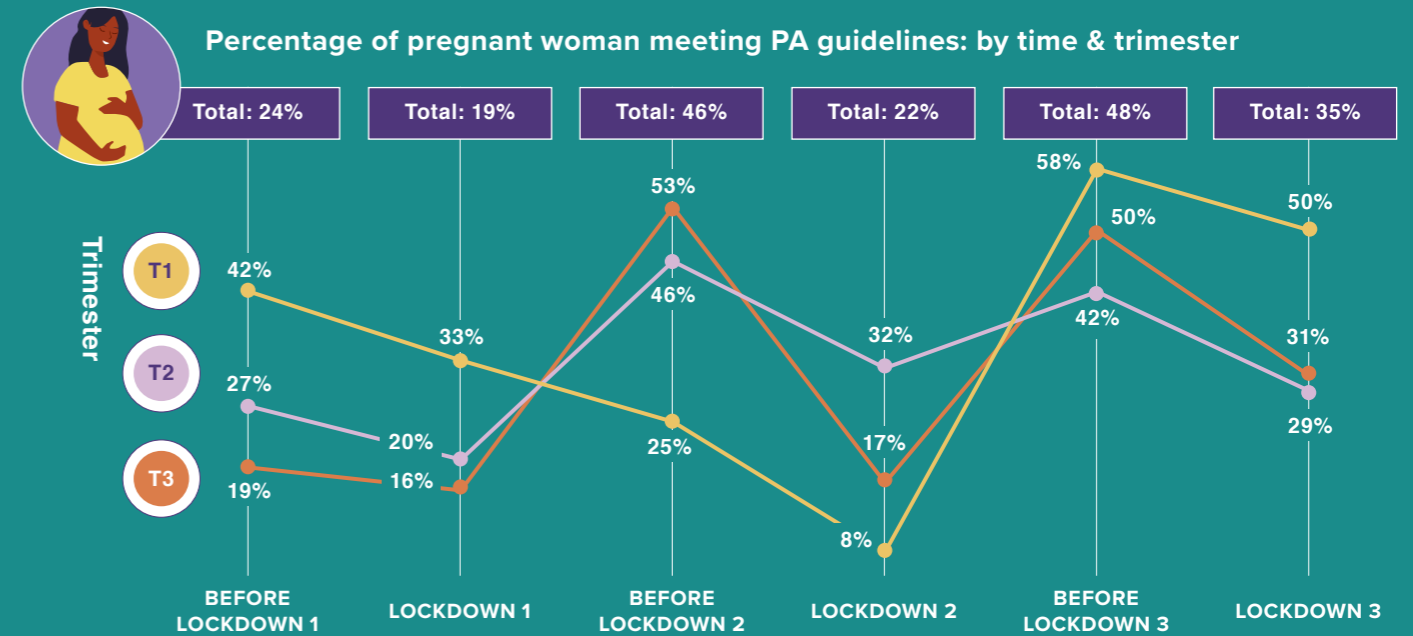
Fewer women met guidelines pre-lockdown 1.0 compared to subsequent pre-lockdown periods. Comparing women's activity levels before and during lockdowns, there were significant decreases in women's activity during lockdown 1.0 and 2.0 compared to before, but not in lockdown 3.0.

Postnatal women



The number of women reporting meeting guidelines (>12 weeks after giving birth) was lowest in lockdown 2.0.

Women reported meeting guidelines most often pre-lockdown 3.0, at levels significantly higher than those reported before lockdowns 1.0 and 2.0. Postnatal women's activity levels decreased significantly from before to during lockdown 2.0.



Perceived activity during lockdown (compared to pre-lockdown)

Lockdown	Status	A lot more	A little more	About same	A little less	A lot less
		Pregnant	38%	19%	15%	17%
LOCKDOWN 1	Postnatal	32%	12%	17%	18%	21%
LOCKDOWN 2	Pregnant	46%	25%	19%	10%	0%
	Postnatal	35%	21%	32%	10%	2%
LOCKDOWN 3	Pregnant	31%	33%	21%	13%	2%
	Postnatal	28%	24%	28%	8%	12%

2. How were women's opportunities to be active impacted by COVID-19?



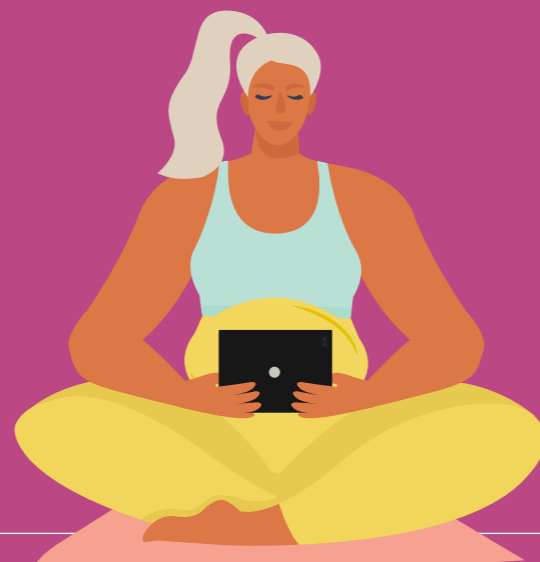
All women, regardless of the lockdown period, or whether they were pregnant or postnatal, felt that their opportunities to be active had decreased compared to before lockdown.

All groups, except postnatal women in lockdown 1.0 also felt that their ability to be active had decreased during lockdowns. Enjoyment of activity decreased for pregnant women in lockdown 2.0 and 3.0. Pregnant women in lockdown 1.0 felt more guilty about not being as active during lockdown (vs. before). Postnatal women in lockdown 1.0 felt that being active was more important, found activity more enjoyable but also felt more guilty about not being as active during lockdown (vs. before).

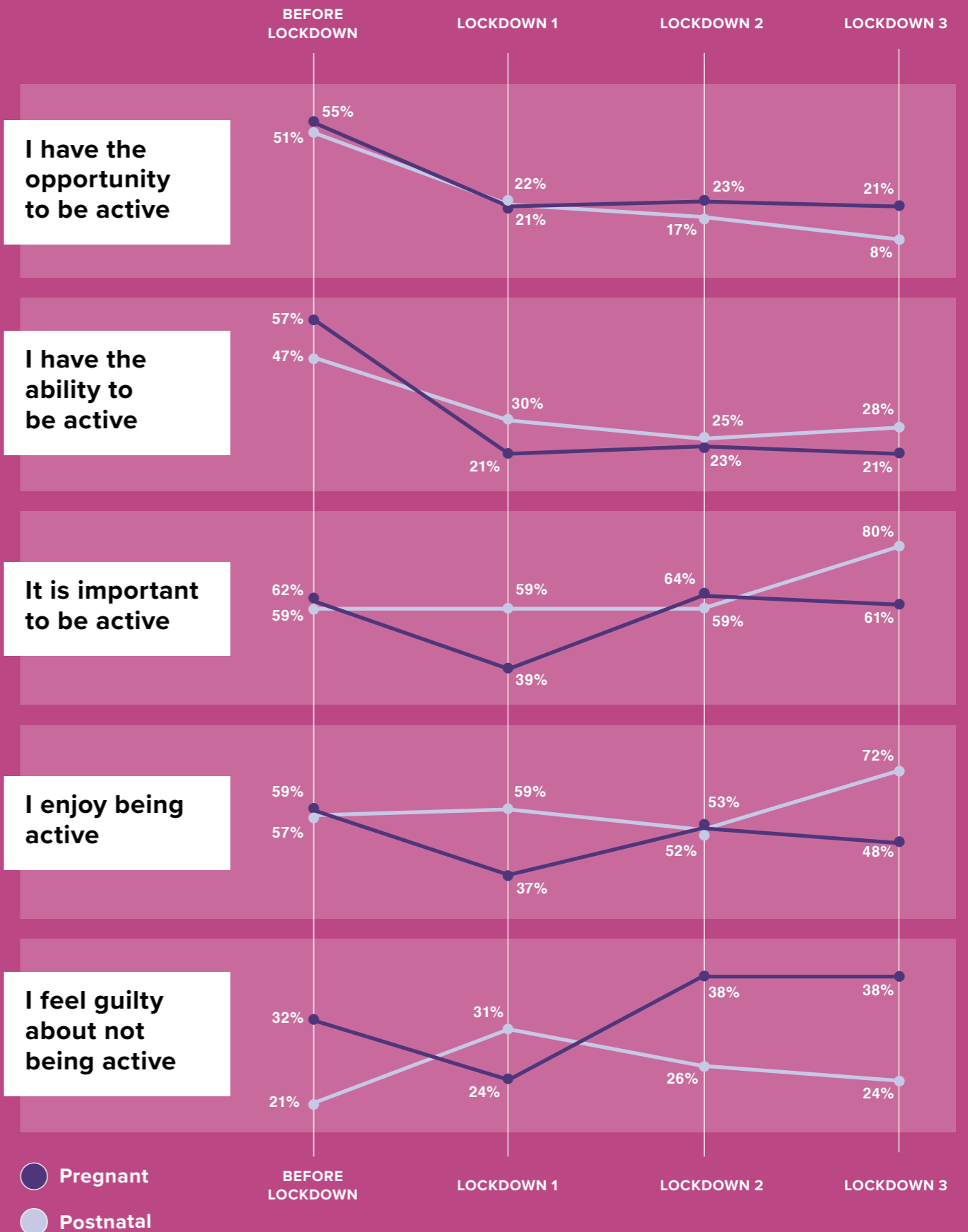
All women felt that being active during lockdown helped them manage their physical and mental health, but that they missed the types of activities they had engaged in prior to lockdown.

Women reported finding new ways to be active and were happy to be active on their own. Whilst women did not report feeling guilty about wanting to be active during the outbreak, all except postnatal women in lockdown 1.0 felt guilty about not being more active.

Pregnant women in lockdown 1.0 were concerned about leaving their home to be active. All, except pregnant women in lockdown 3.0, felt that their activity levels had been negatively impacted by lockdowns, and postnatal women were more likely to state they did not have more time to be active. Women were neutral about whether the government's guidance to be active had influenced their own activity, and also about whether they felt supported to be physically active during lockdowns.



Percentage of women who strongly agree with the following statements...



3. What resources did women use to support their physical activity?

During pregnancy, the percentage of women who had received any advice about PA decreased from 60% in lockdown 1.0 to 47% in lockdown 3.0.

Pregnant women were most likely to get advice from midwives, physiotherapists and fitness professionals. Postnatally, the percentage of women receiving advice varied across lockdowns. They were more likely to get information from GPs, physiotherapists and fitness professionals.

Most women relied on their own knowledge, that of fitness professionals, or looked online and at social media to guide their engagement with PA. This was similar for both pregnant and postpartum women. Free, streamed, and recorded content was consistently accessed by women; YouTube (1.0 = 93, 2.0 = 31, 3.0 = 20) and Instagram (1.0 = 61, 2.0 = 56, 3.0 = 18) were frequently cited as resources, with apps and websites also commonly used.

Women used a wide range of metrics to judge the quality of the resources they found, including reviews and recommendations, by fitness and healthcare professionals. Participants also suggested that free, endorsed, pregnancy (including trimester specific) and postnatal classes offering a mix of live, pre-recorded, in-person and at-home options would be beneficial. They also had a range of physical resources (e.g. equipment) available to them in the home environment.

Resources & information accessed by pregnant & postnatal women...

Pregnant

Advice during pregnancy about PA?

LOCKDOWN 1	LOCKDOWN 2	LOCKDOWN 3
60%	48%	47%

Postnatal

Had 6–8 week check?

LOCKDOWN 1	LOCKDOWN 2	LOCKDOWN 3
72%	67%	88%

Advice about returning to PA?

LOCKDOWN 1	LOCKDOWN 2	LOCKDOWN 3
43%	36%	51%

Who did they access from?

GP

	Pregnant	Postnatal
LOCKDOWN 1	22%	30%
LOCKDOWN 2	4%	10%
LOCKDOWN 3	6%	6%



Midwife

	Pregnant	Postnatal
LOCKDOWN 1	111%	25%
LOCKDOWN 2	30%	4%
LOCKDOWN 3	24%	4%



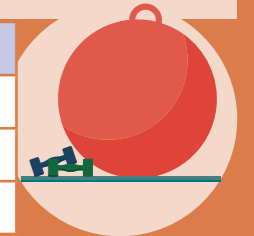
Health visitor

	Pregnant	Postnatal
LOCKDOWN 1	4%	16%
LOCKDOWN 2	0%	5%
LOCKDOWN 3	3%	2%



Physio

	Pregnant	Postnatal
LOCKDOWN 1	10%	21%
LOCKDOWN 2	11%	32%
LOCKDOWN 3	11%	9%



HCP

	Pregnant	Postnatal
LOCKDOWN 1	13%	3%
LOCKDOWN 2	6%	3%
LOCKDOWN 3	4%	1%



Fitness professional

	Pregnant	Postnatal
LOCKDOWN 1	32%	24%
LOCKDOWN 2	16%	6%
LOCKDOWN 3	14%	7%



Other

	Pregnant	Postnatal
LOCKDOWN 1	14%	8%
LOCKDOWN 2	8%	7%
LOCKDOWN 3	2%	2%



Where they have looked for content...

	Not looked	Own knowledge	Partner	Friend	HCP	Fitness professional	Online	Book	Social media	Apps	
LOCKDOWN 1	Pregnant	38%	19%	15%	17%	10%	38%	19%	15%	17%	10%
	Postnatal	32%	12%	17%	18%	21%	32%	12%	17%	18%	21%
LOCKDOWN 2	Pregnant	38%	19%	15%	17%	10%	38%	19%	15%	17%	10%
	Postnatal	32%	12%	17%	18%	21%	32%	12%	17%	18%	21%
LOCKDOWN 3	Pregnant	38%	19%	15%	17%	10%	38%	19%	15%	17%	10%
	Postnatal	32%	12%	17%	18%	21%	32%	12%	17%	18%	21%

Discussion

This report highlights the impact of three COVID-19 lockdown periods in the UK (2020–2021) on pregnant and postnatal women's PA levels. Reported activity levels declined during lockdown 1.0 and 2.0 in pregnant women, and lockdown 2.0 for postnatal women.

Women also frequently felt their opportunities and ability to be active had been negatively impacted by the pandemic, regardless of their pregnancy or postnatal status. Despite this, across all time periods, women perceived themselves to be more active during lockdown compared to before the pandemic, emphasising the potential mismatch between women's perceived and actual activity levels.

This did not appear to prevent women looking for content to support their engagement with PA, and indeed the pandemic may have encouraged women to look in a more diverse range of places for information.

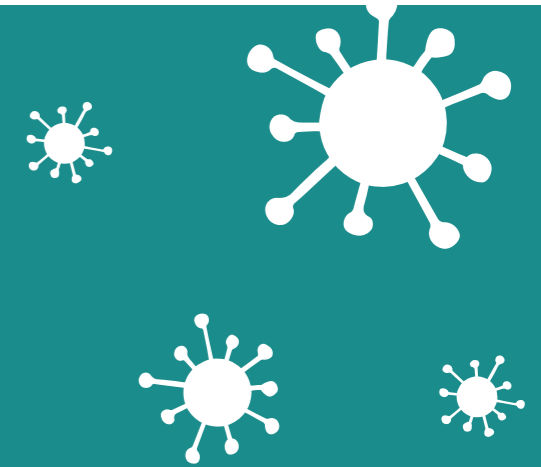
Women reported using a wide range of online resources to gain information and participate in PA during the pandemic, using various ways to judge the quality of the content.

Worryingly however, only 52% of pregnant and 43% of postnatal women had been given information about being active at any point during their pregnancy or after childbirth.

Taken together, this report suggests that lockdowns presented additional challenges for women to engage in recommended levels of PA. Given that engagement in PA is generally lower in pregnant and postnatal population groups, there are valuable lessons to be learned about how we might better encourage and support women to be active during their childbearing years and should further pandemics occur and/or periods of shielding be required.



1. Engagement in physical activity



Whilst national surveys have explored the impact of the pandemic on PA engagement in the general adult population,^{12,22} limited evidence is available about the impact of COVID-19 lockdowns on the activity levels of UK pregnant and postnatal women.

Considered 'vulnerable' to coronavirus infection in March 2020, the UK government advised pregnant women to self-isolate for 12 weeks as a precaution against COVID-19 infection, with in-person maternity care diminishing and appointments largely taking place remotely.¹⁴

These measures caused severe disruption to life, particularly for pregnant women, which is mirrored in findings here that pregnant women's engagement in PA was lowest during lockdown 1.0 (March to June 2020). Although restrictions in England began to ease in September 2020, and pregnant women were no longer expected to shield,¹⁴ a second lockdown period was introduced in November 2020.

A third followed in January to March 2021. Generally, for pregnant women, data presented here shows a decrease in PA during lockdowns, with higher percentages of women reporting meeting guidelines during pre-lockdown periods. Highest engagement in both pregnant and postnatal women came before and during lockdown 3.0, with no differences seen before and during in women's PA levels.

It is probable that postnatal women felt less at risk having had their baby, and so felt better able to maintain their activity levels during this time. Nevertheless, levels of engagement in PA were low in both groups of women, similar to those reported in a study conducted in Northern Ireland over the same lockdown period.¹⁸

Whilst it is generally accepted that engagement in PA will decrease as pregnancy progresses, and that postnatally, women should gradually build up PA levels, overall levels of PA remained low in both UK pregnant and postnatal women during the pandemic, and far below levels deemed necessary to benefit women's physical and mental health.

2. Opportunities to be physically active

Low levels of PA were apparent despite PA being one of the few valid reasons that the UK population, were allowed to leave their house during the COVID-19 pandemic.

In the general population, a Sport England survey found that 32% of respondents strongly agreed that they had the opportunity to be active during this time,¹² compared with levels as low as 21% of women during lockdown 1.0 in this report.

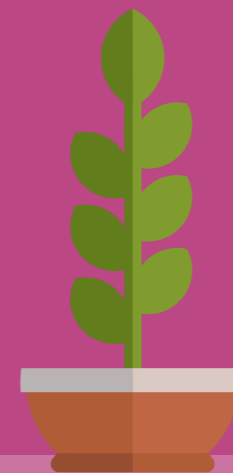
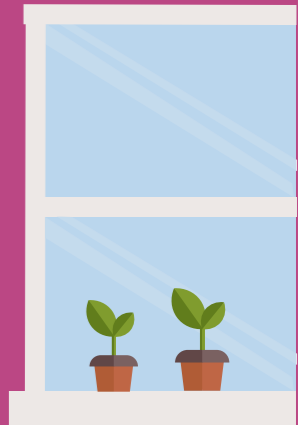
Similarly, the proportion of women who reported that they had the ability to be active during lockdown was also considerably lower in pregnant (21%) and postnatal women (30%) here compared to the general population (40%).¹²

This difference in perceived ability to be physically active may be a result of the general population responding positively to the government encouragement to leave the house once a day, in contrast to pregnant women who were placed in the vulnerable category and advised to reduce social contact.^{13,14}

In addition, the types of activities that pregnant and postnatal women may typically engage in (e.g. swimming, AquaNatal, pre- and postnatal pilates and yoga) were unavailable for a large proportion of the pandemic; this may explain why women report a significant decrease in opportunities and their ability to be active compared to before the pandemic.

However, it is also possible that this is a more general finding not linked to the pandemic, with recent evidence suggesting that around 80% of pregnant and postnatal women report difficulty finding exercise classes or activities which meet their needs whilst pregnant or as a new mum.²³

Together, this highlights the potential lack of PA opportunities for pregnant and postnatal women more broadly, regardless of lockdown status, and that these women need easy access to evidence-based advice to allow them to engage in PA in a safe and enjoyable manner.



3. Resources for physical activity



Over half (56%) of women here reported receiving advice about PA during their pregnancy, with the majority receiving this advice from their midwife. This finding fits with previous research indicating that pregnant women rely heavily on their midwives for help and advice on a vast array of topics, including PA.²⁶

By comparison, only 41% of postnatal women reported receiving advice about returning to PA after childbirth, most likely receiving this from GPs and Physiotherapists, possibly during the 6–8-week postnatal check.

However, evidence has shown that many healthcare professionals are unfamiliar with the national guidelines for PA and lack the appropriate knowledge, confidence, skills, and training to support women to remain or become active in the transition to motherhood.^{24–27}

This is particularly important as 80% of pregnant and postnatal women feel there is a lack of information about what PA and exercise is safe to perform at different stages of pregnancy, and almost three quarters of new mums report being unsure of how to safely take part in PA after childbirth.²³

This indicates that adequate knowledge of the PA guidelines is vital for women's 'go-to' healthcare professionals, to ensure that women have the information they require to make informed decisions around their PA engagement.

The pandemic undoubtedly presented additional challenges to women gaining appropriate advice, with reduced face-to-face antenatal appointments and fewer 6–8-week postnatal checks.²⁸ This likely led to women seeking information on PA from alternative sources, including social media.

Indeed women surveyed here used a variety of sources to seek information on PA, with the most popular being free, streamed and online content (e.g., YouTube and Instagram), which aligns with previous survey results from Northern Ireland.¹⁸ However, a recent systematic review exploring the content, features and expert involvement in PA Apps designed for pregnant women highlighted that only 11% of Apps aligned with current evidence-based PA guidelines and none included screening for contraindications to PA.²⁹

Imagery and content relating to pregnancy and postpartum bodies may also set unrealistic expectations for the majority of women.³⁰

With an increased use of the platform during lockdowns, and sustained use post-pandemic,³¹ inclusion of realistic and appropriate evidence-based health messaging is required to prevent potentially harmful impacts on women's health and mental wellbeing.³²

Finally, postnatal women in particular indicated that they relied on fitness professionals to provide advice about their return to PA. Despite the relatively quick response from fitness professionals to move workout content online, the findings from this and other research during the COVID-19 pandemic indicate that women were unable to locate safe, evidence-based, PA advice and classes.³³

This led to industry stakeholders reacting with tools and resources to facilitate engagement. For example, Sport England set up the Join The Movement campaign³⁴ and commissioned the This Mum Moves project to set up an online Active At Home workout database,³⁵ compiled and reviewed by a panel of experts; the Active Pregnancy Foundation created a Top Tips series shared as an infographic and distributed via a social media campaign.

Despite these efforts, in a recent Sport England report, 77% of pregnant and 72% of postnatal women expressed concerns about doing PA whilst pregnant or as a new mum. It also indicated that the majority of women (84%) report a preference for tailored rather than mainstream provision, with 80% of women suggesting it is important to be led by an instructor with a specific pre- or postnatal exercise qualification.²³ As it stands in the UK, this provision is not widely available, during pandemic times or otherwise, with approximately 8% of fitness instructors currently holding a relevant pre- or postnatal qualification.³⁶

There is therefore a need for women to have ways to identify trusted and qualified individuals, and for more work to be done to ensure that PA opportunities, designed specifically for pregnant and postnatal women and delivered by instructors with appropriate qualifications, become the norm and an integrated part of a women's transition to motherhood.

Strengths & limitations

This study was conducted in a large sample of women from across the UK during all three lockdown periods. The survey was adapted from a national survey to explore PA during COVID-19 in the general population and was tailored to pregnant and postnatal women. It provides novel information about PA engagement in the perinatal population during the COVID-19 pandemic, and additional insight around their opportunities to be active, and where women were accessing related information during this time.

Women were asked to report their PA levels, and this is often used as a method to capture the proportion of people meeting movement guidelines, particularly for large-scale national surveillance.

However, some evidence suggests that pregnant and postnatal women may overestimate their activity levels, similar to those in the general population. Participants here were recruited through a range of online outlets, and were predominately white, with high academic attainment; findings may therefore not be generalisable to certain under-represented population subgroups.



Recommendations

A whole systems approach (including women, health and fitness professionals, and wider stakeholders) is required to better support pregnant and postnatal women to engage in the recommended levels of PA.

Further work is required to understand the potential mis-match between women's perceived level of PA and actual reported levels to better understand how to ensure women are sufficiently active and support increased engagement were appropriate.

Better understanding of the barriers and facilitators to activity across pregnancy and the postnatal period is required to ensure women have the opportunity and ability to engage in PA as they wish, irrespective of time and situation.

Increased awareness of guidelines by, and support for, healthcare professionals is required to facilitate conversations about PA, allowing all women to discuss their physical activity options both during pregnancy and postnatally with a qualified health professional.

Better regulation of online content, particularly targeted towards pregnant and postnatal women, is required to ensure that women can be confident, comfortable and safe when engaging in activities provided online.

Upskilling of (more) fitness professionals to support women to be active during the transition to parenthood is required. Clear certification of their training and qualifications is also necessary to ensure women can be confident in their fitness professional's ability to support their perinatal needs.

Increased provision of high-quality, evidence-based pregnancy- and postnatal-specific classes both in-person and online would allow more women to access the content they desire, at a time appropriate to them.

Use of new tools such as the Get Active Questionnaire for Pregnancy (GAQ-P), by women, healthcare and fitness professionals, will allow women to feel confident in their ability to be physically active. Using pre-activity screening tool such as this can also identify individuals who should seek medical advice before continuing or becoming active during pregnancy.

Lessons learned during this COVID-19 pandemic need to be built upon, to ensure that pregnant and postnatal women are supported should the need to isolate or enter subsequent lockdowns arise again.



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