

Hanna Rion and The Weekly Dispatch's twilight sleep crusade

Eleanor Taylor

School of Clinical Medicine, University of Cambridge, Cambridge, UK

Correspondence to

Eleanor Taylor, University of Cambridge, Cambridge, CB2 1TN, UK; et463@cam.ac.uk

Accepted 4 May 2023 Published Online First 30 May 2023

ABSTRACT

The story of twilight sleep is an important, yet neglected, episode in the history of obstetric pain relief in Britain. One reason for its neglect in historical writing is that most of the discussion of the therapy took place in newspapers, particularly the Weekly Dispatch. Using digitised newspapers, as well as medical journals, this article reconstructs the largely overlooked story of twilight sleep in Britain, Twilight sleep was comprised of two drugs, scopolamine and morphine, which acted together to remove the pain of labour, as well as memory of it. Twilight sleep gained popularity in 1915 in Britain, a year after it became popular in America, on which most scholarship has focused. One of the main advocates for the use of twilight sleep in Britain was Hanna Rion, who wrote a series of weekly articles in 1916 campaigning for its use. Rion's articles, and the response to them, show how the rise in popularity of twilight sleep reflected concerns about a declining birth rate amidst the backdrop of World War I. Through studying twilight sleep we see how women began to see themselves as consumers and shape medical practice. before the natural childbirth movement, which it has traditionally been attributed to. Therefore, twilight sleep provides us with the missing link in the story of obstetric anaesthetics, between the discovery of chloroform in 1847 and the natural childbirth movement in the 1930s.

In 1915, Hanna Rion, an American writer and artist living in Cornwall, launched an appeal for the use of a method of pain relief during childbirth known as 'twilight sleep'. Rion claimed that the new drug offered a better alternative to ether and chloroform. These drugs had been used in childbirth since 1847 but their safety was highly contested (Snow 2008, 50, 55). Furthermore, many women were unable to access pain relief due to a lack of practitioners offering it or a lack of funds to pay for such a treatment (Williams 1997, 124; Beinart 1990, 116, 118, 128-29). Therefore, by the turn of the century, many women continued to give birth without pain relief (Caton 1999, 135). Even in 1948, 101 years after Simpson's famous discovery, only 52% of women were given pain relief in labour, despite gas and air machines having become commonplace in most hospitals (Bourke 2014b, 1288). Twilight sleep consisted of a mixture of scopolamine and morphine and was first trialled during labour in 1902. The morphine acted to relieve pain and scopolamine acted to erase the mother's memory of the birth. The practice was quickly employed in Freiburg by obstetricians Bernhardt Kronig and Karl Gauss, who published an article in 1906, reporting the safe and effective use of twilight sleep in 500 cases (Claye

While contemporaries recognised Hanna Rion as the British 'pioneer of twilight sleep', little is known about her life (Buchan Observer and East Aberdeenshire Advertiser 1916, 2). She was born in 1875 in South Carolina and moved to Cornwall in 1913 with her husband, Frank Ver Beck. In 1915, Rion published a book on the history and use of twilight sleep, entitled 'Painless Childbirth in Twilight Sleep' (Ver Beck 1915), before writing a weekly column advocating for its use in The Weekly Dispatch, a tabloid newspaper printed in London. The column, published from 11 June to 15 October 1916, launched a high-profile 'crusade' to promote twilight sleep in Britain. A second book on the subject, Golden Motherhood, appeared in late 1916. In 1917 Rion was appointed matron of a maternity hospital in London, having been instrumental in establishing 11 maternity hospitals in England (Tovey n.d). Although Rion, an artist lacking medical training, never explicitly mentions what ignited her interest in twilight sleep, in 'Painless Childbirth in Twilight Sleep' Rion mentions being sent to Freiburg to write an article for an American magazine, 'The Ladies Home Journal', on the experiences of mothers using twilight sleep. It appears that this is where she gained her interest and following the visit she started her investigations into the use of twilight sleep (Ver Beck 1915, 39). In 'Painless Childbirth in Twilight Sleep', Rion describes how she spent 6 months researching twilight sleep prior to publishing her book, reading articles in the British Medical Association (BMA) library, as well as translating medical reports of the method from German medical journals and visiting physicians who practised the method in Britain (Ver Beck 1915, 9, 42)

By focusing on Rion and The Weekly Dispatch's 'crusade', this paper offers the first full history of twilight sleep in Britain in the early twentieth century (Rion 1916e, 7). While various historians-notably Judith Walzer Leavitt and Jacqueline Wolf-have written about the female-led twilight sleep movement in America, comparatively little attention has been paid to developments in Britain. There is to date no comparable history of the twilight sleep movement and its consequences for Britain. Both Jennifer Beinart and Susan Williams discuss twilight sleep while providing a history of obstetric analgesia in Britain, however, both devote relatively little attention to this phase in obstetric history, overlooking its significance in shaping obstetric practice today (Beinart 1990, 120; Williams 1997, 128-29). Other historians have looked at the impact of twilight sleep in countries besides Germany, America and Britain, demonstrating its international impact. For example,

INTRODUCTION

Check for updates

@ Author(s) (or their employer(s)) 2023. Re-use permitted under CC BY. Published by BMJ.

To cite: Taylor E. Med Humanit 2023:49:659-667.

BMI



Linda Bryder wrote about Dr Doris Gordon who used twilight sleep in her practice in Stratford, New Zealand (Bryder 2017, 98). Leavitt's groundbreaking study highlighted the irony that while twilight sleep campaigners advocated for control in childbirth, the treatment they fought for made them unconscious during labour and thus gave more control to their doctors. For Leavitt, the twilight sleep movement helped distance women from their bodies, rather than gain control over it, and moreover helped to drive a larger transformation of birth from a 'natural home event' to an 'illness requiring hospitalization and physician attendance' (Leavitt 1986, 6). Wolf also attributes changes in how physicians treated birth and how women experienced it to twilight sleep. Wolf notes that twilight sleep required and also helped to facilitate greater medical control, for instance by introducing restraints into the labour room. This contributed to the rise of the obstetrician, as opposed to the general physicians who attended the vast majority of births in the early twentieth century (Wolf 2009, 70). For both historians, the twilight sleep movement nonetheless demonstrated the power of consumers to shape medical practice, as well as starting a new cultural practice of resuming normal activity soon after giving birth. At the same time, twilight sleep accustomed upper-class and middleclass women to the hospital, with the promise of more sophisticated anaesthetic techniques meaning some women continued to embrace hospital-based maternity care. The twilight sleep movement is one of the earliest examples of newspapers playing an activist role in a prominent health issue. At the time of the twilight sleep campaign, discussion of medical treatments was primarily confined to medical journals, particularly in cases of disputes between physicians. Rion, as well as other proponents of the treatment, used the newspapers to promote their cause and in doing so, began to transform the relationship between physicians and consumers. Newspapers had played a similar role in 1911 when the Daily Mail promoted wholemeal bread due to its nutritional benefits (Weatherall 1995). Both campaigns were controversial not only because of what they promoted but because it was not commonplace or considered proper to discuss medical matters in the lay press. Though it will be argued that ultimately the campaign was unsuccessful in building medical consensus about the value and safety of twilight sleep, as in the USA the British 'crusade' brought discussion of medical matters into the lay press and prompted women to campaign for choice and control over how they gave birth.

Although there are similarities between the British twilight sleep story and the American story, as told in the accounts by Leavitt and Wolf, there were also unique underlying social factors which shaped the reception of twilight sleep in Britain. War had broken out across Europe in 1914 and was claiming the lives of many British men. Women, who had been fighting for the right to vote in the years previously, stayed at home bringing up families and taking over the jobs men left behind. Studying the twilight sleep movement in Britain enhances our understanding of the intertwined histories of obstetric anaesthesia, consumerism and the media. Moreover, we shall see how twilight sleep was a 'stepping stone' between the discovery of chloroform and the mid-twentieth-century natural birth movement (Moscucci 2003; Skowronski 2015; Snow 2008).

I will be drawing on articles from the *British Medical Journal (BMJ)*, as well as national and local newspapers. In the *Weekly Dispatch*, a national newspaper, we see Rion's crusade, whereas in local newspapers we see local reactions to the crusade, where the method was available, and the persistence of twilight sleep maternity homes. Digitised newspaper archives offer insight into previously unrecognised debates, providing a very different picture of

the twilight sleep story in Britain compared with using articles in medical journals alone. Furthermore, the recent digitalisation of valuable newspaper sources perhaps in part explains why the significance of the twilight sleep movement in Britain has been overlooked by historians. By focusing on the importance of popular newspapers in building support for twilight sleep, this dissertation also builds on recent histories of 'communicating reproduction'. As Hopwood *et al* have argued, historians should 'investigate at all systematically how major traditions and innovations have depended on communication' (Hopwood *et al*. 2015, 381).

Twilight sleep will first be considered as an international movement, with a particular focus on how it came to be known in Britain, before a discussion of the British advocates and critics of twilight sleep. Having outlined the context for the *Weekly Dispatch's* crusade, themes found in Rion's articles will be explored, followed by a discussion of the medical reception of both twilight sleep and Rion's writing. Finally, I turn to the years after the crusade and consider its wider legacy.

AN INTERNATIONAL HISTORY

Following the publication of Gauss' paper in 1906, news of twilight sleep spread among both the American and British medical communities, generating a mixed reaction. Trials of the treatment took place in a Philadelphia lying-in hospital in 1908 and in the Women's and Children's Hospital of Chicago around the same time (Wolf 2009, 50-51). However, in 1914, twilight sleep was introduced to American society as an entirely new discovery in an article published in the McClure's magazine, a New York based monthly periodical. The article detailed the experiences of wealthy American women who, on hearing of twilight sleep, had travelled to Freiburg to give birth under the experimental method. Following coverage in McClure's, twilight sleep became popular in New York and other major cities along the East Coast, including Chicago and Boston (Cassidy 2018, 94; Beinart 1990, 120). The new Twilight Sleep Association publicised the method of twilight sleep and campaigned for its increased use among all classes of women (Caton 1999, 168). The leadership of the association were suffragists and as a result many of their tactics mirrored those used in the suffrage movement. Rallies to spread the idea of painless childbirth encouraged women to fight for this 'revolutionary' treatment by applying pressure on medical professionals mirrored contemporary suffragette demonstrations (Leavitt 1980, 154).

However, just over a year following the McClure's article, support for twilight sleep began to wane. Leavitt suggests that one reason for the demise of twilight sleep lay in its success: pressure from patients demanding the treatment led doctors untrained in the Freiburg way to administer the drug, giving varied results, and reports of adverse effects on babies invited public concern. Furthermore, Mrs Carmody, a leading advocate of twilight sleep died during childbirth in August 1915. While twilight sleep had been used during her birth, doctors and her husband insisted her death was not due to its use, instead attributing it to a haemorrhage. Nonetheless, Carmody's death harmed the twilight sleep movement as women began to question its safety. Furthermore, Carmody's neighbour spoke up against twilight sleep and started a new movement to abolish its use (Leavitt 1980, 163; Wolf 2009, 60). An English doctor attributed the rise and fall of twilight sleep in America to the 'national trait of "whole-heartedness" (Greenwood 1918, 11).

While enthusiasm in America waned in 1915, the twilight sleep movement in Britain was only just beginning. In July 1907, a summary of a second paper by Gauss, reporting favourably on 1000 cases, was published in the *BMJ* (BMJ 1907, 10). The

following year, Professor Kronig spoke at the annual meeting of the BMA. Following Kronig's speech, a Scottish doctor, Robert Buist, then reported his success in using twilight sleep and reassured attendees that there were no ill effects on the mother or child (Buist 1908, 808-9). Subsequently, there was intermittent discussion of twilight sleep, though termed 'Scopolamine-Morphine', among doctors in the BMJ. In the edition following the report of Buist's speech at the annual meeting of the BMA, a piece in the correspondence section written by Buist answered questions he had received in response, indicating his speech promoted considerable interest (Buist 1908a). A discussion between Buist and 'F.M.' continued in the subsequent two issues of the BMJ (F. M 1908, 1409; Buist 1908b, 1525). Other articles of note during this period include a report by Halliday Croom, discussing his successful results in 62 cases where the treatment was used, a study by J R Freeland and B A H Solomons, two doctors who practised at the Rotunda Hospital in Dublin, and a report by Dudley Corbett, a doctor working in Lambeth General Lying-in Hospital (Corbett 1911; Freeland and Solomons 1911; 'An Epitome Of Current Medical Literature' 1909). Both Freeland and Solomons' study and Dudley Corbett's report describe favourable results, and discussion of these results is included in the penultimate chapter, entitled 'the British success', of 'Painless Childbirth in Twilight Sleep' (Ver Beck 1915, 234–38).

In the lay press, interest in twilight sleep began only in 1914 when British newspapers published reports of an article in an American magazine that was having a big impact on American society—this was the *McClure's* article on twilight sleep. Several newspapers gave summaries of the piece, with the *Liverpool Echo* emphasising how quickly the mother recovered and the *Hull Daily Mail* stating the reduced fatality to mother and child (Liverpool Echo 1914, 4; Hull Daily Mail 1914, 4).

Early British coverage appealed to women's changing role in society and highlights women's agency in making choices in childbirth. With increasing numbers of women in employment, further amplified by the war, women were wanting to resume their normal activities sooner after childbirth. At the time, it was the custom for middle-class women to remain in bed for an extended period of time, whereas a woman mentioned in the McClure's article was able to walk around the room the day after giving birth (Scovil 1896, 289). This feature of twilight sleep seemed particularly to appeal to the middle-class audience, demonstrating what women, as consumers, wanted. During the late nineteenth and early twentieth centuries, the image of women changed from the delicate and weak Victorian invalid to the more robust woman of the early twentieth century, the 'Gibson girl' becoming a cultural icon in many magazines for this new image of the American woman (Wolf 2009, 54; Patterson 2005, 3). Twilight sleep fitted this new ideology.

Discussion about twilight sleep in the lay press went quiet after the summer of 1914, however, and it was during that time Rion wrote *Painless Childbirth in Twilight Sleep*, which advocated the method to both doctors and mothers. The book's publication was in many ways the equivalent of the *McClure's* article in the USA as it ignited widespread interest in the technique. Rion's book may not have had as large an audience as the *McClure's* article, published in a popular and widely read magazine. However, many newspapers reported on the publication (Cornishman 1915, 6; Weekly Dispatch 1915a, 13; 'PainlessChildbirth in Twilight Sleep.' 1915, 385). Articles discussing twilight sleep in the *BMJ* also increased following publication of Rion's book and the increased public interest. The following year, in 1916, Rion began her series of weekly articles in the *Dispatch* which further advanced the cause.

ADVOCATES AND CRITICS

In the USA, it was largely wealthy middle-class and upper-class women who led the campaign for twilight sleep. Similarly, in Britain, it was also middle-class and upper-class women, such as Rion, who spearheaded the movement. Both the McClure's article and Painless Childbirth, are interspersed with photographs of healthy mothers and babies who used twilight sleep, consolidating the message of those advocating twilight sleep that it was safe for the mother and child. As well as reassuring mothers that the technique is safe, in Painless Childbirth, Rion named several doctors known to be advocates of twilight sleep and recalled details of visits and conversations she had with them. Rion, although a lay writer, used her connection to prominent physicians to assert her authority on the subject. These were Edinburgh obstetrician Sir John Halliday-Croom, Robert Buist, London physician Dudley Corbett and Constance Long, president of the British Association of Registered Medical Women. Except for Long, articles written by these doctors appeared in the BMJ before 1915. Although Long did not write in the BMJ, Rion claimed that she promoted the use of twilight sleep among other female physicians and more broadly within private practice. Long is quoted to have said: 'only when women demand and demand that the doctors adopt this method will the doctors have to give in and meet the demand'. Rion made clear her great admiration for Long as one of the relatively few female doctors at the time and using her position to promote the interests of women within the medical community (Heggie 2015; Ver Beck 1915, 49). Rion also wrote about Halliday-Croom with much respect and admiration: 'he is such a great man in every sense' (Ver Beck 1915, 43). By contrast, Rion considered Buist 'not at all in sympathy with the efforts of mothers'. Buist believed that twilight sleep should only be used in cases where labour becomes distressing and that women should leave the decision as to whether to use twilight sleep with the practitioner, whereas Rion was campaigning for the mother's choice. Furthermore, Buist believed the suffering of women in childbirth to be overstated. Rion strongly disagreed with this sentiment. Later on in the book, when discussing Dr Corbett, who left his maternity home where twilight sleep was used for a position in St. Thomas' hospital, Rion described him as having 'forsaken this branch of medicine'. The term forsaken again shows Rion's disappointment in doctors who were not committed to her vision of providing twilight sleep to all women.

Furthermore, the fact that many of the doctors who advocated the use of twilight sleep were from Scotland, and specifically had links with Edinburgh, reflects the experimental culture that existed within the Edinburgh obstetric community at the time. Two physicians mentioned in 'Painless Childbirth in Twilight Sleep' were Scots with strong links to Edinburgh. Halliday Croom trained in Edinburgh and later became Professor of Midwifery in the University of Edinburgh, while working as consulting physician in the Maternity Hospital—a position Simpson once occupied ('SIR JOHN HALLIDAY CROOM, M.D., LL.D., F.R.C.P., F.R.C.S.Edin' 1923). Robert Buist also completed some of his medical studies in Edinburgh, as well as serving as an assistant physician in the Royal Edinburgh Asylum, before being appointed as a lecturer in Dundee ('Robert Cochrane Buist' n.d). An Edinburgh doctor wrote part of the Weekly Dispatch article published on 6 August 1916, where he named Edinburgh as the 'city of twilight sleep', linking the eagerness of Edinburgh doctors towards twilight sleep, to the discovery of chloroform in the city around 70 years previously. During the late nineteenth and early twentieth centuries, medicine in London was dominated by the 'greats'. The greats were elite practitioners who often had lucrative practices, where they attended to wealthy patients. The greats viewed medicine as an art, and not an

experimental science, and resisted new scientific developments to diagnose, treat and prevent illness (Lawrence 1985, 507). Edinburgh was a much smaller city than London, and therefore, there was a limited supply of wealthy patients. As a result, Edinburgh physicians relied on teaching and publications more heavily than London physicians, which created an experimental academic culture within Edinburgh's medical community, with a willingness to entertain new ideas (Al-Gailani 2013, 31-46). Furthermore, the Royal Maternity Hospital provided relatively large numbers of patients on which to practise the technique on, again highlighting the difference between Edinburgh and London, where twilight sleep was a desirable treatment, often given in private maternity homes and limited to the wealthy by its price. Against this backdrop, twilight sleep thrived in Edinburgh, particularly with the support of Halliday-Croom. Discussions in the BMI highlight that Halliday-Croom's technique for administering twilight sleep differed from the Freiburg method. Again, this demonstrates the experimental culture of Edinburgh in the early twentieth century. Halliday-Croom's experimentation also highlights that at the time, there was no drug regulatory authority to approve drugs or stipulate dosage. The lack of central testing and dosage could have been one reason for the failure of the twilight sleep campaign, as it was never unanimously determined to be beneficial or harmful, and frequently dosage was blamed for failure of the technique by its advocates (Krönig 1908, 807). As well as a lack of a drug regulatory body, further hallmarks of the era are present in the debate over twilight sleep.

Throughout the writings of Rion, and other sources from the time, we see a concern about the declining birth rate. Fear of childbirth was named by many as one cause of the declining birth rate, alongside other factors such as use of contraceptives and venereal disease (Greenwood 1918, 23). Advocates of twilight sleep, both women and doctors, frequently appealed to these concerns. They argued that giving women access to twilight sleep and thus removing pain, the source of fear, from birth, would cause the birth rate to increase. In the early twentieth century, a young, healthy population was needed to work in industry, make up the military and maintain the British empire (Pickstone and Cooter 2013, 7). It was seen as the women's role within society to bear children to supply the needs of the state. Particularly when many thousands of young men were being killed on the battlefields, having children was seen as the female patriotic contribution to the war effort (Gravzel 2013, 26). An article advocating twilight sleep, featured in a 1917 edition of the Quiver, a weekly magazine, argued that the declining birth rate should cause alarm in the Empire as 'empty cradles mean an empty country' (Barnard 1917, 438).

Such views also were infected with eugenic concerns. The Quiver article also stated that the alarm should be intensified by the fact that 'the yellow and black races are increasing apace'. Similar ideas were also expressed in the Burton Observer in 1916 (Burton Observer and Chronicle 1916, 2). Writing in favour of twilight sleep, Lady Warwick asserted that women have a responsibility to the race to bear children, and anything that encourages that end should be promoted. Lady Warwick pointed out that 'there is no shirking from the women's duty in black and yellow races' and that a woman's responsibility to bear children was also a responsibility to keep the 'white man in his position'. These comments reflect anxieties about race degeneration that existed in the early twentieth century. An article in the Western Mail in April 1915 voiced concerns that after the war the greatest growth of population will be in the lowest classes. The author stated that there was 'no valid excuse for the better classes avoiding the duties...of parentage', which reflects ideologies of the time (Western Mail 1915, 7). In the early twentieth century, eugenic thought encouraged health policies that aimed to

prevent reproduction of those who had 'undesirable' traits, which were often considered to be found among the poor, and encourage reproduction of desirable traits, considered to be found among the more wealthy in society (Pickstone and Cooter 2013, 7; Soloway 1995, 639).

As mentioned previously, the twilight sleep movements in Britain and America were both led by women. While some physicians also advocated for the use of twilight sleep, many physicians were cautious of twilight sleep, leading to them being labelled as timid and insensitive to the plight of women (Caton 1995, 780). Critics of twilight sleep were found both in the medical profession and also among laypeople. Objections to twilight sleep were mainly based on the risks and lack of evidence, as well as the availability of facilities, skill and time needed. There were also cultural and religious objections towards pain relief in labour.

Safety concerns were a very common objection to twilight sleep. A *BMJ* article in May 1915, a month after Rion's book was published, stated that twilight sleep posed risks to both mother and child and that although it was desirable to make labour painless, it was not yet possible to do so without risk ('Reports Of Societies' 1915a, 893). Safety concerns also led the author of an article in the *Athenaeum*, a literary magazine, in 1915 to label Rion's *Painless Childbirth* as 'dangerous' as it advocated the use of two 'deadly' drugs. While the article recognised the benefits of twilight sleep in some cases, it stated that 'on the whole, the verdict of medical opinion is against routine use', which, having looked at discussion in the *BMJ*, appears to be true. The article concluded by stating that 'the illustrations add nothing to the value of the book', implying that the images did little to convince this reader of the safety of twilight sleep ('Painless Childbirth in Twilight Sleep.' 1915, 385).

Other physicians believed twilight sleep to be safe and effective but impractical for use due to the physician's time, need for specialist training and ward conditions required. A *BMJ* article in May 1915, commenting on *Painless Childbirth*, casts doubt on Rion's scientific authority by highlighting inaccuracies in her writing. However, having assessed Rion's claims and other reports of the success of twilight sleep, the author did conclude that twilight sleep appeared successful in the majority of cases where there were ideal conditions, although the author held reservations about the technique on account of its failures. He also concluded that ward conditions were far from ideal for using twilight sleep, thus limiting its use.

While many objections were based on the risks and lack of evidence and facilities, some objections were based on cultural expectations of women. A common argument, used both for and against twilight sleep, was that as women became more civilised they became more sensitive to the stimulus of pain (Leavitt 1986, 130). In 1920, a physician wrote to the BMJ expressing his opinion that as women had become more sensitive to the pains of labour, they had come to demand pain relief. The physician blamed this state of affairs on 'the teaching of twilight sleep and emancipation of women and raising them to be equal in work with the opposite sex' (Bonney 1920, 97). Through this comment, we can see how the twilight sleep campaign was not just a campaign for pain relief in labour but linked to wider cultural issues, such as a woman's position in society and right to education. Historian Lauren MacIvor Thompson argues that advocating for better health for women had been part of the feminist movement since the emergence of such movements in the 1840s. Included in this advocacy for better health was encouraging women to study medicine, as well as campaigning for better treatments and access to services (MacIvor Thompson 2019, 68)

Besides the men who perceived women as becoming more sensitive to pain, some women also held this view (Bourke 2014a, 211). Mrs Hampton, whose letter was published in the

2nd July issue of the Weekly Dispatch in 1916, stated that the whole idea of twilight sleep was 'utterly opposed to nature's laws and will have a detrimental impact on race' (Rion 1916c, 6). Mrs Hampton, perhaps an older woman, looked with contempt on the 'modern wife' who was not inclined to work, instead distracting herself with dances and suffrage meetings, as well as wishing to enjoy the pleasures of married life without any of its inconveniences. Again, the correspondence from Mrs Hampton displays the concerns about race degeneration and the decline in moral standards of the modern woman.

Kronig also believed that women were becoming sensitive to pain due to increased civilisation, but saw this as a warrant for pain relief. However, he saw upper-class women as more civilised than those of perceived lower classes or races, and therefore more in need of pain relief (Leavitt 1986, 130; MacIvor Thompson 2019, 68). While it was a commonly held view that white, middle-class and upper-class women were becoming more 'delicate' and sensitive to pain, Rion herself did not appear to express it in any of her writings (Wood 2018). Instead, Rion called on the state to make twilight sleep available to women of all classes (Ver Beck 1916, 111-12). In retrospect, the perceived increase in sensitivity to the pains of labour could have resulted from the changing position of women in society. Just as women were demanding the right to vote, they were demanding doctors to make pain relief during labour freely available. Women emphasised and appealed to the medical duty of doctors to alleviate pain during labour, now that this option was available, a possibility once unimaginable. MacIvor Thompson argues that at the heart of the twilight sleep campaign was a belief that eliminating female reproductive pain had the power to establish a new political order, where women were equals with men (MacIvor Thompson 2019, 68).

Some critics of twilight sleep argued that women should not use pain relief during labour as it was God's curse on women for the sin of Eve, recorded in Genesis 3, an argument that James Young Simpson had also faced on his discovery of chloroform (Snow 2008, 80). In a letter directed towards Rion in the Weekly Dispatch in 1916, Revd. Brooks stated that suffering in childbirth was a 'divine and natural law' and that to relieve the pain of labour would be to 'interfere with and deflect the course of natural law, ordained by God'. In the opinion of Brooks, it was against the will of God to use anaesthetics such as twilight sleep in childbirth. From religious concerns, Brooks moved to concerns about social morality, claiming that by removing the 'deterrent' of the pain of childbirth, twilight sleep risked encouraging immorality and intensifying evils. For Brooks, the movement was evil and was not to be encouraged by anyone who heeded the moral law of God and teachings of Christ (Rion 1916b, 7). However, the following week, a surgeon replied by quoting another verse from the Bible: 'come unto me all ye who labour and are heavy laden and I will give you rest', using it to argue that everything which relieved human pain and suffering was in harmony with the word of God (Weekly Dispatch 1915b).

THE WEEKLY DISPATCH CRUSADE

It was amidst these debates that Hanna Rion embarked on her *Weekly Dispatch* campaign. From 11 June, Rion wrote a weekly column until 15 October that same year. Columns, such as Rion's, featured as 'open letters' in newspapers, often expressing the views of the author, and promoting discussion and correspondence. In her articles, Rion used a variety of tactics to convey the struggle of women and advocate the use of twilight sleep. These tactics included recounting tales of successful

twilight sleep cases where healthy babies were born, to silence any doubts about safety. Rion also rallied women to demand this treatment, echoing the calls of the suffragettes. Additionally, Rion appealed to the benefits that twilight sleep could have on the birth rate, and called for changes within society to overcome barriers to women being able to access pain relief in labour.

Rion's first article, on 11 June 1916, discussed the village of Poppleton where the first Twilight Sleep home in the country was located (Rion 1916a, 5). In the article, Rion included positive accounts from mothers to reassure her readers of the success and safety of the treatment and encourage more women to use twilight sleep. Rion ended the article by describing the beauty of a twilight sleep baby she had visited and then included a quote from the father stating that the child had never had to have any medicine. As with the images which appear in Painless Childbirth, Rion again emphasised how twilight sleep did not harm the babies, in fact, they appeared the image of health. Throughout the series, Rion continued to provide accounts from twilight sleep mothers, often detailing their fears about childbirth and how twilight sleep was even better than they could have imagined. For example, on 27 August, Rion discussed a Mrs Stanley Wrench, who was so fearful of giving birth that she had resigned herself to childlessness. However, on reading about twilight sleep, Wrench and her husband decided to have a child. On waking from her twilight sleep, she described herself as being in the 'perfect state of health' (Rion 1916f, 6). In giving these accounts, Rion offered hope for women in similar situations, such as those forgoing motherhood due to fear of the pain.

As well as informing women of the benefits of twilight sleep, and providing evidence in the form of testimonies from women who had used it successfully, Rion encouraged women to fight for their right to access the treatment. Rion placed herself as the figurehead of all women, speaking up for their concerns, as well as using her platform to rally women and call them to arms. On 9 July, Rion stated that 'childbirth is a mother's affair and they have a right to fight for it' (Rion 1916d, 6). The following month, Rion's article contained an advert calling for women to purchase her translation of Gauss' 1906 paper, 'Childbirth in Artificial Twilight Sleep', and send it to their doctors, encouraging women to actively participate in the campaign (Rion 1916f, 6). Many aspects of the twilight sleep movement in Britain, as in America, mirrored the suffrage movement, with Rion calling women to unite and fight for the good of all women.

Rion also presented nurses as allies to the twilight sleep movement, claiming they understood the pains of childbirth, being women themselves. In the 16 July article, Rion wrote that nurses were responding to her calls and offering homes or helping search for new ones, to be used as twilight sleep homes. Rion asserted that nurses 'are evidently with the mother's heart and soul – because they are women, and they know what women have suffered' (Rion 1916e, 7). However, Rion also noted that nurses are reliant on doctors to work in twilight sleep homes, reflecting again on how women were 'helpless in the hands of doctors', or men in general (Rion 1916c, 6).

In calling women to fight for twilight sleep, Rion used emotive language to present doctors who opposed the movement as enemies. Rion 'dared to scale the Chinese Wall of medical resistance' (Rion 1916d, 6). Her metaphor highlights that questioning medical authority in the lay press and demanding treatment was not a common practice at the time. Towards the end of the *Weekly Dispatch* crusade, Rion reflected that she had 'fought the prejudice of the doctors single-handed' and 'stood alone with almost the entire British Medical Profession at *her* throat' (Rion 1916j, 9). In these two extracts, we are presented with a picture of Rion

boldly standing up to the medical profession, with the best interests of all mothers at the heart of her cause. These two extracts also imply that by the end of the campaign, the overwhelming opinion of the medical community had changed to be in favour of twilight sleep. However, having looked at articles in the BMJ from the time, medical opinion continued to be divided as to the safety and efficacy of twilight sleep. Rion, then, presented the story to further promote twilight sleep by leading the reader to conclude that doctors were overwhelmingly supportive of twilight sleep. As well as establishing her medical authority, by claiming to have spent 10 months researching twilight sleep before publication of Painless Childbirth, Rion also used examples of doctors supportive of twilight sleep to add medical authority and weight to her cause (Rion 1916h, 7). In her article on 16 July, Rion discussed a doctor who used twilight sleep on his wife, such was his trust in the therapy. The doctor himself, in a quote Rion includes in her article, stated that he does 'not think a man could furnish more striking testimony of his faith' (Rion 1916e, 7).

As other British advocates of twilight sleep did, Rion appealed to the benefits that twilight sleep could have on the birth rate to add further weight to her arguments. The frequency that Rion appealed to the birth rate in her articles reflected broader concerns present within the nation at the time of writing. Rion appealed to anxiety about the falling birth rate, linked to the British army and empire in employing this argument for the use of twilight sleep and offering a solution to the men who governed the country. Rion issued a warning to those in authority that if they withheld twilight sleep, and therefore painless births, from women, the birth rate would continue to fall (Rion 1916b, 7). The Weekly Dispatch primarily appealed to a working class audience, frequently denouncing the wealthy classes (Grant 1872, 42). In the early twentieth century, it was the most popular Sunday newspaper, with two million copies being sold each week by 1947 (Stavely-Wadham 2020). It's popularity and large circulation meant that those in the upper classes were aware of its contents. Articles in the BMI make it clear that eminent doctors were aware of discussions within the Dispatch, as there are references to discussions of twilight sleep in the 'lay press' (Haultain and Swift 1916, 515). Therefore, it can be inferred that those in positions of authority were also aware of the campaigns within the Dispatch, due to the large number of the public who were reading and discussing Rion's articles. In her articles, Rion frequently recounted the horrors of childbirth and stories of fearful pregnant women with deep sympathy. Rion used terms such as 'burden' to describe the women's ability, or duty, to bear children (Rion 1916c, 6). In the article on 9 July, Rion mentioned a doctor who criticised her for making women aware of the pains of birth, stating that 'ignorance is bliss' (Rion 1916d, 6). Rion replied that demand for knowledge and truth had taken the place of ignorance, again reflecting how the image of women was changing at this time: from an innocent girl to an intellectual equal to man. The doctor implied that Rion had caused more problems by her public discussion of the pains of labour. Furthermore, the complaint illustrates that in 1916 it was not considered 'proper' to discuss medical matters in the lay press. However, Rion suggested that it is a 'good sign of the times when women can compel the medical professional to study problems such as pain relief in labour', indicating that this new format of discussion is seen as progress by her.

While some at the time held views that working-class women were less civilised and therefore less in need of pain relief during labour, Rion herself did not express these views, even suggesting that those were the women most in need of the therapy (Rion 1916i, 8; Bourke 2014b, 1289). An account of the first mother

in London's East End to use twilight sleep featured Rion's article on 3 September (Rion 1916g, 7). The mother spoke of how crowds gathered around her house when they heard she was having the baby in twilight sleep and stayed until the baby had been born, such was the interest in the method. The mother was only able to experience twilight sleep as it was given at a reduced fee. Rion also recounted this story in her later book, Golden Motherhood. Following the account in this book, she discussed how some poorer women saw twilight sleep as an unnecessary, selfish expense, one which indulged themselves while robbing their children of necessities. Therefore, Rion called for the state to assist women in meeting the cost of twilight sleep (Ver Beck 1916, 111-12). To add further weight to her argument, Rion highlights that women were the ones providing soldiers of the future, therefore calling the state to provide for their needs. Through this argument, Rion was again appealing to those in power who believed that a powerful army and large population were needed to maintain a successful Empire.

Rion's demands of the government reflected the demands of the National Twilight Sleep Association in America, which although led by upper-class women, aimed to enable women of all classes to access twilight sleep. The National Birthday Trust Fund was founded in Britain 13 years later in 1928, also by wealthy women. The National Birthday Trust Fund had the goal of improving health services for women and relieving their pains in birth, as well as improving nutrition for children. Historian Donald Caton draws parallels between these two organisations but, in overlooking the significance of the twilight sleep movement in Britain, neglects the continuity between the British twilight sleep movement and the National Birthday Trust Fund (Caton 1999, 167). Therefore, in calling for state assistance in covering the costs of maternity care and pain relief, Rion built on work of previous feminist campaigns, but also set a new precedent for campaigns by women's organisations in the interwar years through her use of the media.

Rion ended her series in the *Weekly Dispatch* on 15 October. Her final article reflected on the changes in the use of twilight sleep in Britain over the previous 4months. Rion noted that at the start of the series there was only one Twilight Sleep home in Britain and put the increased number of homes and availability of twilight sleep down to the campaign. Rion ends the article, and her crusade, by stating: 'In years to come I'm sure the twilight sleep campaign will be remembered as one of the greatest services *The Weekly Dispatch* has rendered the people of the nation' (Rion 1916k, 9).

THE MEDICAL RESPONSE TO RION AND TWILIGHT SLEEP

Following the crusade, the verdict of medical professionals remained divided, with debates that had occurred before the campaign continuing. However, even some of those sympathetic to twilight sleep disapproved of Rion's newspaper campaign as discussion of medical matters in the lay press was looked down upon at the time. In the 1870s and 1880s, the Royal Colleges demanded that disputes between medical men were kept within the profession, and not aired in public, to maintain a public image of a single, unified medical profession. Furthermore, the Central Ethical Committee, formed in 1902, discouraged doctors from giving named interviews or articles, addresses or photographs to the press. A report printed in the BMJ in 1923 advised that 'discussions in the lay press on disputed points of pathology or treatment should be avoided; these find their appropriate opportunity in the professional societies and the medical journals' (Nathoo 2009, 36). However, during the twilight sleep campaign, there were many occasions when medical men gave

opinions in the lay press, and the safety and efficacy of twilight sleep were openly disputed. Often physicians remained anonymous, however, sometimes names were provided.

Rion's book, Painless Childbirth in Twilight Sleep, named several doctors, which some members of the profession would have viewed as shameful. Even physicians favourable to twilight sleep worried that 'prominent specialists had allowed themselves to be exploited through the lay press'. The publicity of twilight sleep in the lay press, moreover, was a 'shame' as the 'public now tried to force the hand of the practitioner'. In this comment, we see how doctors did not like their authority and clinical judgement challenged by those without medical qualifications, especially not women—a theme that is widely taken up in the medical press. While some medical professionals were convinced that twilight sleep was safe and effective, they expressed reservations about publicity. Another article in the BMI noted that it was regrettable from an ethical point of view that laywomen were writing about twilight sleep in the press (Johnson 1919, 531). However, the author of the article encouraged medical men not to let the lay press's interest deter them from continuing their investigations. It could be said that the twilight sleep campaign backfired in that it made male doctors prejudiced against testing the treatment. Reporting on a book on nitrous oxide-oxygen anaesthesia, another physician stated that he hoped this drug might 'reach its proper level without the assistance of Sunday papers', a clear reference to the Weekly Dispatch's articles.

Doctors, then, were protective of their profession, wanting to come to their own conclusions about a treatment, rather than being subject to the demands of their patients. Furthermore, physicians did not want the opinion of outsiders who they perceived as having little knowledge of medical matters. This paternalistic attitude is seen in the 1915 edition of the textbook, *Principles and Practices of Obstetrics*, written by Joseph De Lee. De Lee was a highly esteemed American obstetrician, whose textbook was widely regarded and subsequently underwent 13 editions (Walzer Leavitt 1988, 1353). The author 'uncompromisingly damns' twilight sleep and does not approve of the treatment being advocated by 'ignorant...writers incompetent to judge its merits or demerits' ("Reports Of Societies' 1915b, 929).

AFTER THE CRUSADE

Following the cessation of her weekly articles, Rion published her second book, *Golden Motherhood*, in late 1916, which compiled many stories featured in her *Weekly Dispatch* series and pictures of healthy-looking twilight sleep mothers and babies. Rion discussed claimed side effects of twilight sleep, listing each one in turn and reassuring her readers of the safety of the method.

The pride of having a child born 'in twilight sleep' is evident in quotes from mothers in the book, as well as birth announcements in provincial newspapers that proudly used the phrase: 'born in twilight sleep'. In the final chapter of *Golden Motherhood*, Rion outlines steps for action. Rion suggested that women ask their doctor his or her thoughts on twilight sleep and make an 'unprejudiced investigation of it and of the medical standing of the men who have been employing it since 1907–8'. However, Rion instructed her readers not to demand anything from her doctor or to argue with him. Finally, Rion encouraged women to support twilight sleep doctors as they were fighting their battle.

Following her crusade, Rion wrote two further articles in the *Dispatch* a year later. The first article claimed that she had overcome the prejudice she faced from doctors in attempting to introduce twilight sleep into the country, implying doctors were no longer in opposition (Weekly Dispatch 1917, 7). However, articles in the *BMI* still suggested much resistance. The second

article, published the following week, looked back over the previous 12 months. Rion stated that the whole Empire owed her and the *Weekly Dispatch* a great debt, reaching people all over the globe. Rion listed some of the countries she had replies from: Australia, New Zealand, Canada, Jamaica, India, among many others. Rion also informed her readers that the campaign even led to a twilight sleep home being established in South Africa (Rion 1917, 4). The range of locations that Rion claimed to have received correspondence from is evidence of the wide-reaching impact of her campaign. In August 1918, Rion wrote another two articles in the *Dispatch*, which reported the continuing progress of the twilight sleep movement through success stories in different maternity homes (Rion 1918a, 2; Rion 1918b, 5).

Discussion in the medical and lay press continued, but with less intensity in the following years. Adverts for twilight sleep homes persisted into the 1930s, but slowly dwindled over the 1930s and completely disappeared around mid-1939, coinciding with the start of World War II.

Newspaper adverts for private maternity homes, which were mainly found in provincial newspapers, provide insight into the history of twilight sleep. Voluntary maternity, or lying-in, hospitals were places or charity where the poorer in society could receive maternity care, such as the Royal Maternity Hospital in Edinburgh, where Halliday Croom used twilight sleep extensively (Nuttall 2011, 372; Western Mail (Wales) 1915). However, in the early twentieth century increasing numbers of women in the upper classes chose to give birth in private maternity homes, having given birth at home before (Gorsky et al. 2020, 190). Outside of Scotland, it was in private maternity homes that twilight sleep was most commonly found in Britain. As it was middle-class women who typically gave birth in private maternity, we see the group of women who were able to access and use twilight sleep (Marks 1996, 206-7; Beinart 1990, 121). Moreover, twilight sleep home advertisements illuminate the broad range of locations where homes were located, providing evidence that the technique was more widespread than historians have recognised. The persistence of advertisements for homes in the interwar years demonstrates the impact that the movement had. A study looking at the frequency of references to twilight sleep in the *Lancet* and the *Times* during the twentieth century shows limited discussion of twilight sleep in the Lancet, a medical journal, until around 1915 when references suddenly increased and appear for the first time in the Times, consistent with the publication of Painless Childbirth and the Weekly Dispatch campaign. Slowly references in the Lancet declined after the period of 1915-1919, the years which represent the twilight sleep movement. However, references in the Times increased in the years following the movement, mainly comprising adverts for twilight sleep maternity homes. Between 1925 and 1929, all 360 references to twilight sleep were in adverts for maternity homes (Barnett 2005, 310-15). As well as demonstrating the impact the movement had, this shows that the history Of twilight sleep must be considered as more than a movement lasting a few years in the mid-1910s. Furthermore, it shows that the demand for the technique came from patients rather than medical professionals and that the demand remained strong for years. In April 1917, it was announced that the Poppleton maternity home was moving to a new building due to 'ever-increasing demand', demonstrating the continued enthusiasm for the technique despite the end of the Weekly Dispatch campaign (Gentlewoman 1917, 30). A letter in the Liverpool Echo on 1 December 1916 described the government as being in a 'twilight sleep' due to their inactivity and procrastination relating to naval welfare, and after 1935, all references to twilight sleep in the Times are in

a non-medical, metaphorical context (Liverpool Echo 1916, 6). This reflects how widely known the therapy had become.

Twilight sleep did not cease to be used due to replacement by another anaesthetic. Nitrous oxide-oxygen, an analgesic widely used during birth in Britain today, did not come to be commonly used until after World War II, despite having been first used for pain relief during labour in 1881 (Collins et al. 2012, 127). Furthermore, having campaigned for a form of pain relief during labour that rendered all control in the delivery room to the doctor, women increasingly campaigned for the de-medicalisation of birth. During the interwar years, there was a natural birth movement, which is particularly associated with Grantly Dick-Read's book, Natural Childbirth, published in 1933. Birth was presented as a physiological norm, rather than a pathological condition requiring pain relief.

Ann Oakley, commenting on the evolution of obstetric interventions, argues that maternity care can be explained as a strategy for the 'social control of women' (Oakley 1984, 2). While the control that twilight sleep gave doctors could be interpreted to fit this historical narrative, the case of twilight sleep in Britain suggests something more complex. The natural birth movement has often been seen as the start of women, as selfdefined 'consumers', driving change in maternity provision and care (Al-Gailani 2018, 563; O'Hara 2013, 294-98). However, the twilight sleep movement demonstrates women attempting to gain control over how they gave birth, indicating that the consumer movement within maternity care began earlier than is currently appreciated (Johnson and Quinlan 2015, 1085). Additionally, Hilary Marland points out that in the twilight sleep movement it was women who were demanding an intervention, not physicians (Pickstone and Cooter 2013, 567).

Furthermore, the same themes that featured in the twilight sleep movement were also seen in the subsequent natural birth movement. Hence, we can historically place the natural birth movement as a progression from the twilight sleep movement. Concerns about the declining birth rate, which had featured frequently in discussions of twilight sleep, were ongoing in the interwar years and were also seen in arguments in support of natural childbirth. To increase the birth rate, childbirth was presented as natural and therefore not something to be feared. Moreover, proponents of natural childbirth stressed that bearing children and motherhood was women's primary role and that the ill effects of civilisation had led to increased pain and difficulty in birth (Moscucci 2003, 168-73). This echoed Kronig's belief that civilisation had increased woman's sensitivity to pain (Caton 1999, 136-37). Furthermore, the movement was again led by middle-class and upper-class women (Johnson and Quinlan 2015, 1085)

CONCLUSION

Having explored the twilight sleep movement in Britain, Hanna Rion emerges as a key advocate for its use and leader of the campaign. Rion's articles in the Weekly Dispatch formed a key aspect of the movement in Britain, reaching a wide audience, as well as separating it from previous campaigns by groups such as the Women's Cooperative Guild (Scott 1998).

One impact of the Weekly Dispatch campaign was therefore to assist in opening up the lay press to medical discussion, identifying women as consumers rather than passive recipients of care. In both Britain and America, twilight sleep was highly contested among medical professionals and never fully adopted in either country. Furthermore, in both countries it was primarily advocated for by women, demonstrating that women did have agency in matters of childbirth, and that their voices and demands, as

consumers, impacted the interventions provided. Through studying the twilight sleep movement in Britain we benefit from greater insight into the cultural views towards women and childbirth, as well as the concerns that were prevalent within society, and can understand them more fully. The backdrop of World War I and concerns about a declining population set apart the British twilight sleep movement from the movement in America. The declining birth rate was the issue most frequently quoted by those who encouraged the use of twilight sleep in Britain. The study of twilight sleep also enhances our understanding of the natural birth movement which followed, positioning the twilight sleep movement as a bridge between the discovery of chloroform and the natural birth movement. The twilight sleep movement can be viewed as a precedent for subsequent campaigns over the remainder of the twentieth century and the beginning of women in Britain becoming increasingly assertive in demanding 'choice' in childbirth. Still today, we see the controversial history of women's choice and control in childbirth reflected in present conflicts between female agency and medical authority.¹

Acknowledgements The author thanks Salim Al-Gailani for taking the time to read through drafts and providing valuable feedback.

Contributors ET is the sole author and guarantor of this work.

Funding The authors have not declared a specific grant for this research from any funding agency in the public, commercial or not-for-profit sectors.

Competing interests None declared.

Patient and public involvement Patients and/or the public were not involved in the design, or conduct, or reporting, or dissemination plans of this research.

Patient consent for publication Not applicable.

Ethics approval Not applicable.

Provenance and peer review Not commissioned; externally peer reviewed.

Data availability statement No data are available

Open access This is an open access article distributed in accordance with the Creative Commons Attribution 4.0 Unported (CC BY 4.0) license, which permits others to copy, redistribute, remix, transform and build upon this work for any purpose, provided the original work is properly cited, a link to the licence is given, and indication of whether changes were made. See: https://creativecommons.org/ licenses/by/4.0/.

Eleanor Taylor http://orcid.org/0000-0001-5717-4755

NOTE

1. For example, see https://www.bbc.co.uk/news/health-60462720

BIBLIOGRAPHY

- "An Epitome of Current Medical Literature." 1909. BMJ 2 (2551): E77-80.
- "Hull Daily Mail." 1914. In Social Record. British Newspaper Archives.
- "Liverpool Echo." 1914. In Painless Childbirth. British Newspaper Archives.
- "Cornishman." 1915. In Twilight Sleep. British Library Newspapers.
- "Painless Childbirth in Twilight Sleep." 1915. In The Athenaeum, 385
- "Reports Of Societies." 1915a. *BMJ* 1 (2838): 891–94. "Reports Of Societies." 1915b. *BMJ* 2 (2869): 927–29.
- "Buchan Observer and East Aberdeenshire Advertiser." 1916. In Interesting War Items. British Newspaper Archives.
- "Burton Observer and Chronicle." 1916. In Twilight Sleep" Women and Her Duty: Lady Warwick's View. British Newspaper Archives.
- "Liverpool Echo." 1916. In U Boats and Blockade
- "Gentlewoman." 1917. In *Poppleton Twilight Sleep Nursing Home*. https://www.britishn ewspaperarchive.co.uk/viewer/bl/0003340/19170407/170/0030.
- "Sir John Halliday Croom, M.D., LL.D., F.R.C.P., F.R.C.S.Edin." 1923. BMJ 2 (3275): 633-35. Al-Gailani, S. 2013. "Pregnancy, Pathology and Public Morals: Making Antenatal Care in Edinburgh around 1900." In Western Maternity and Medicine, 1880–1990, edited by Janet Greenlees and Linda Bryder, 31-46. Pickering & Chatto.
- Al-Gailani, Salim. 2018. "Hospital Birth." In Reproduction: Antiquity to the Present Day, edited by Lauren Kassell, Nick Hopwood, and Rebecca Flemming, 553-66. Cambridge: Cambridge University Press.

- Barnard, A. 1917. "The Truth About 'Twilight Sleep': An Unbiased Investigation." In *The Quiver*. Vol. 52. Internet archive.
- Barnett, R. 2005. "A Horse Named 'Twilight Sleep': The Language of Obstetric Anaesthesia in 20th Century Britain." *Int J Obstet Anesth* 14 (4): 310–15.
- Beinart, J. 1990. "The Politics of Maternity Care." In Services for Childbearing Women in Twentieth-Century Britain, edited by Jo Garcia, Robert Kilpatrick, and Martin Richards. Oxford, [England]: New York: Clarendon Press; Oxford University Press.
- BMJ. 1907. "An Epitome Of Current Medical Literature." BMJ 2 (2429): E9–12.
- Bonney, V. 1920. "'New Lamps For Old' In Obstetrics." BMJ 1 (3081): 97.
- Bourke, J. 2014a. *The Story of Pain: From Prayer to Painkillers*. Oxford, England: Oxford University Press.
- Bourke, J. 2014b. "Childbirth in the UK: Suffering and Citizenship before the 1950s." Lancet (London, England) 383 (9925): 1288–89.
- Bryder, L. 2017. "An Area Peculiarly Our Own': Women and Childbirth in Early to Mid-Twentieth-Century New Zealand." New Zealand Journal of History 51 (1): 92–112.
- Buist, R. C. 1908. "The Use Of Hyoscine-Morphine Anaesthesia In Natural Labour." *BMJ* 2: 808–9.
- Buist, R. C. 1908a. "Scopolamine-Morphine In Natural Labour." BMJ 2 (2492): 1044–45. Buist, R. C. 1908b. "Scopolamine-Morphine In Natural Labour." BMJ 2 (2498): 1525.
- Cassidy, T. 2018. Birth The Surprising History of How We Are Born. München: Grove Press.
- Caton, D. 1995. "In the Present State of Our Knowledge." *Anesthesiology* 82 (3): 779–84. Caton, D. 1999. *What a Blessing She Had Chloroform the Medical and Social Response to the*
- Caton, D. 1999. What a Blessing She Had Chloroform the Medical and Social Response to the Pain of Childbirth from 1800 to the Present. New Haven: Yale University Press. http://search.ebscohost.com/login.aspx?direct=true&scope=site&db=nlebk&AN=53042.
- Claye, A. M. 1939. The Evolution of Obstetric Analgesia, by Andrew M. Claye. . . With a Chapter by W. Stanley Sykes. London, New York: Oxford University Press.
- Collins, M. R., S. A. Starr, J. T. Bishop, and C. L. Baysinger. 2012. "Nitrous Oxide for Labor Analgesia: Expanding Analgesic Options for Women in the United States." Reviews in Obstetrics & Gynecology 5 (3–4): 126–31.
- Corbett, D. 1911. "The Use Of Scopolamine-Morphine In Labour." *BMJ* 1 (2624): 868–69. F. M. 1908. "Scopolamine-Morphine In Natural Labour." *BMJ* 2 (2496): 1409–10.
- Freeland, J. R., and B. A. H. Solomons. 1911. "Scopolamine-Morphine Anaesthesia in Labour." *BMJ* 1 (2613): 187–89.
- Gorsky, M., M. Vilar-Rodríguez, J. Pons-Pons, B. Doyle, A. Nemi, A. Hüntelmann, B. Hoffman, et al. 2020. "The Political Economy of the Hospital in History." In Public, Private and Voluntary Hospitals: Economic Theory and Historical Experience in Britain, c.1800-2010".
- Grant, J. 1872. *The Newspaper Press: Its Origin, Progress and Present Position*. Vol. 3. London: George Routledge and Sons.
- Grayzel, S. R. 2013. Women and the First World War. London.
- Greenwood, W. O. 1918. Scopolamine-Morphine, Semi-Narcosis during Labour. London: Frowde.
- Haultain, F. W. N., and B. H. Swift. 1916. "The Morphine-Hyoscine Method Of Painless Childbirth. Or So-Called 'Twilight Sleep.'" BMJ 2 (2911): 513–15.
- Heggie, V. 2015. "Women Doctors and Lady Nurses: Class, Education, and the Professional Victorian Woman." *Bull Hist Med* 89 (2): 267–92.
- Hopwood, N., P. M. Jones, L. Kassell, and J. Secord. 2015. "Introduction: Communicating Reproduction." Bull Hist Med 89 (3): 379–404.
- Johnson, B., and M. M. Quinlan. 2015. "Technical Versus Public Spheres: A Feminist Analysis of Women's Rhetoric in the Twilight Sleep Debates of 1914-1916." Health Communication 30 (11): 1076–88.
- Johnson, C. W. 1919. "Scopolamine-Morphine In Childbirth." BMJ 1 (3043): 531.
- Krönig, P. 1908. "Scopolamine-Morphine Narcosis In Labour." BMJ (Clinical Research Ed.) 2 (2490): 805–808.
- Lawrence, C. 1985. "Incommunicable Knowledge: Science, Technology and the Clinical Art in Britain 1850-1914." *J Contemp Hist* 20 (4): 503–20.
- Leavitt, J. W. 1980. "Birthing and Anesthesia: The Debate over Twilight Sleep." Signs 6 (1): 147–64
- Leavitt, J. W. 1986. "Brought to Bed Childbearing in America, 1750 to 1950 / Judith Walzer Leavitt." In Childbearing in America, 1750 to 1950. New York: Oxford University Press.
- MacIvor Thompson, L. 2019. "The Politics of Female Pain: Women's Citizenship, Twilight Sleep and the Early Birth Control Movement." *Medical Humanities* 45 (1): 67–74.
- Marks, L. V. 1996. "Metropolitan Maternity: Maternal and Infant Welfare Services in Early Twentieth Century London." In *Metropolitan Maternity: Maternal and Infant Welfare Services in Early Twentieth Century London*. Vol. 36. Amsterdam: Atlanta, GA: Rodopi.
- Moscucci, O. 2003. "Holistic Obstetrics: The Origins of 'Natural Childbirth' in Britain." Postgrad Med J 79 (929): 168–73.
- Nathoo, A. 2009. "Hearts Exposed." In *Hearts Exposed Transplants and the Media in* 1960s Britain / Ayesha Nathoo. London: Palgrave Macmillan.
- "Robert Cochrane Buist." n.d. Archives Hub. Available from: https://archiveshub.jisc.ac.uk/ search/archives/d4b47f0e-d2a9-3aa8-9db8-a6eeea18b759

- Nuttall, A. 2011. "Maternity Charities, the Edinburgh Maternity Scheme and the Medicalisation of Childbirth, 1900-1925." Soc Hist Med 24 (2): 370–88.
- Oakley, A. 1984. *The Captured Womb: A History of the Medical Care of Pregnant Women*. Oxford: Oxford: Basil Blackwell.
- O'Hara, G. 2013. "The Complexities of 'Consumerism': Choice, Collectivism and Participation within Britain's National Health Service, c.1961-c.1979." Social History of Medicine 26 (2): 288–304.
- Patterson, M. H. 2005. Beyond the Gibson Girl: Reimagining the American New Woman, 1895-1915, 1st ed. Baltimore: University of Illinois Press.
- Pickstone, J., and R. Cooter. 2013. Companion Encyclopedia of Medicine in the Twentieth Century. Hoboken: Routledge Ltd.
- Rion, H. 1916a. "A Painless Childbirth Pioneer." In Weekly Dispatch. British Newspaper Archives.
- Rion, H. 1916b. "Minister Denounces Twilight Sleep." In Weekly Dispatch. British Newspaper Archives.
- Rion, H. 1916c. "Wanted—More Twilight Sleep Homes." In Weekly Dispatch. British Newspaper Archives.
- Rion, H. 1916d. "An Open Letter to Doctors." In Weekly Dispatch. British Newspaper Archives.
- Rion, H. 1916e. "Our Twilight Sleep Baby." In Weekly Dispatch. British Newspaper Archives.
- Rion, H. 1916f. "How Twilight Sleep Saved My Baby." In Weekly Dispatch. British Newspaper Archives.
- Rion, H. 1916g. "How the Fame of Twilight Sleep Drew a Crowd." In Weekly Dispatch. British Newspaper Archives.
- Rion, H. 1916h. "Twilight Sleep Does Not Harm the Child." In *Weekly Dispatch*. British Newspaper Archives.
- Rion, H. 1916i. "The Richest Twilight Sleep Place in All England." In Weekly Dispatch. British Newspaper Archives.
- Rion, H. 1916j. "The Other Side of the Twilight Sleep Campaign." In Weekly Dispatch. British Newspaper Archives.
- Rion, H. 1916k. "Unique Service to the Women of the Nation." In *Weekly Dispatch*. British Newspaper Archives.
- Rion, H. 1917. "1030 Babies Born without Pain." In Weekly Dispatch. British Newspaper Archives.
- Rion, H. 1918a. "Twilight Sleep Romances." In Weekly Dispatch. British Newspaper Archives.
- Rion, H. 1918b. "Twilight Sleep Romances." In Weekly Dispatch. British Newspaper Archives.
- Scott, G. 1998. Feminism and the Politics of Working Women: The Women's Co-Operative Guild, 1880s to the Second World War. London:
- Scovil, E. 1896. Preparation for Motherhood. Philadelphia, Pennsylvania: Henry Altemus. Skowronski, G. A. 2015. "Pain Relief in Childbirth: Changing Historical and Feminist Perspectives." Anaesthesia and Intensive Care 43 Suppl (1_suppl): 25–28.
- Snow, S. J. 2008. Blessed Days of Anaesthesia How Anaesthetics Changed the World. Oxford: Oxford University Press.
- Soloway, R. A. 1995. "The 'Perfect Contraceptive': Eugenics and Birth Control Research in Britain and America in the Interwar Years." *Journal of Contemporary History* 30 (4): 637–64.
- Stavely-Wadham, R. 2020. "Hot Off The Press New Titles This Week." British Newspaper Archives (blog). Available from: https://blog.britishnewspaperarchive.co.uk/2020/10/12/new-titles-12-oct-2020
- Tovey, D. n.d. "American Artists in St Ives." David Tovey Art Historian (blog). Available from: https://www.stivesart.info/american-artists-in-st-ives
- Ver Beck, H. R. 1915. Painless Childbirth in Twilight Sleep: A Complete History of Twilight Sleep from Its Beginning in 1903 to Its Present Development in 1915, Including Its Successful Use in Great Britain to-Day. London: T. Werner Laurie.
- Ver Beck, H. R. 1916. Golden Motherhood. London: Mills & Boon.
- Walzer Leavitt, J. 1988. "Joseph B. DeLee and the Practice of Preventive Obstetrics." American Journal of Public Health 78 (10): 1353–61.
- Weatherall, M. 1995. "Bread and Newspapers: The Making of "A Revolution in the Science of Food." In *In The Science and Culture of Nutrition, 1840-1940*, 179–212. Leiden, The Netherlands: Brill.
- Weekly Dispatch. 1915a. Twilight Sleep in Britain. British Newspaper Archives.
- Weekly Dispatch. 1915b. *Minister's Attack on Twilight Sleep*. British Newspaper Archives.
- Weekly Dispatch. 1917. Twilight Sleep for Raid Babies. British Newspaper Archives.
- Western Mail (Wales). 1915. *Childbirth Made Painless*. British Newspaper Archives. Western Mail. 1915. *Born in Twilight Sleep*. British Newspaper Archives.
- Williams, A. S. 1997. Women & Childbirth in the Twentieth Century: A History of the National Birthday Trust Fund 1928-93. Phoenix Mill, Thrupp, Stroud, Gloucestershire: Sutton.
- Wolf, J. H. 2009. Deliver Me from Pain: Anesthesia and Birth in America. Baltimore: Johns Hopkins University Press.
- Wood, W. 2018. "Shifting Understandings of Labour Pain in Canadian Medical History." Medical Humanities 44 (2): 82.