Evidence Brief

University of Southampton

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Is the quality of maternity care related to the number of midwives and their workload?

Maternity staffing is variable from day to day and between organisations; there are also fluctuations in the demand for care. This evidence brief outlines the quantitative evidence on the relationship between staffing levels and the quality of maternity care, including four new studies based on existing NHS data in England. Maternity services need to provide safe, effective and person-centred care for women and families. When staffing is below expected or workload is high, it is important to understand the consequences across a wide range of patient outcomes.

Background

Maternity services are reported to be under-resourced and there is a national shortage of midwives. Under-resourcing can lead to a reduction in quality and safety. Within maternity services, the National Institute for Health and Care Excellence [1] concluded there was a lack of research evidence to guide detailed staffing recommendations. Lack of guidance contributes to variation in staffing across the country.

Clarifying the relationship between staffing levels and the quality of care will help service planners base their decisions on robust evidence. This is especially important as the quality of maternity care has come under scrutiny and reassurance is needed that services are appropriately staffed.

Review of the evidence

We used a systematic scoping review published in 2021 [2] and an updated search in 2024 to identify and summarise research papers assessing the association between staffing levels of midwives and the quality of care and outcomes for mothers and babies. The searches were conducted in Medline, Embase, CINAHL, Cochrane Library, TRIP, Web of Science and Scopus. 28 studies met the inclusion criteria [3].

Studies found a reduced incidence of perineal damage at birth, postpartum haemorrhage, maternal readmission, preterm birth and neonatal resuscitation when there were more midwifery staff. Higher staffing was also associated with higher rates of exclusive breastfeeding, respectful care and satisfaction with care. There were no differences observed in rates of stillbirth or neonatal death when staffing varied. Many of the studies have presented mode of birth as an outcome, for which results were inconsistent.

Only three studies included maternity support workers, and higher staffing by support workers was not associated with improved outcomes, although the evidence base is small.

The evidence review prompted four new studies [4-7] to add to the evidence base. These studies addressed whole service staffing, inpatient staffing (with a focus on postnatal wards) and the inclusion of support workers where possible.

The studies used existing health data generated by the National Health Service maternity services in England, and studied outcomes where evidence is sparse or absent. The studies were designed to control for other factors that might influence these outcomes, thus isolating the effects specifically due to staffing.

New studies using NHS data

Staffing and survey data from 129 NHS trusts were linked in a large cross-sectional study [4]. An association was found between having more midwives employed in a service and women reporting a better experience of postnatal inpatient care. Fewer women reported delays in discharge in organisations with more midwifery staff, and more women reported that staff always helped in a reasonable time, and they always had the information and explanations they needed [4]. This was the first study to examine the effects of organisational staffing on women's experience of postnatal care.

This relationship was explored further in a second study which examined staffing data from 123 postnatal wards within 93 NHS trusts, including both midwives and support workers [5]. As before, better care experience was reported with higher midwifery staffing, as measured by full-time-equivalents employed. When measured at ward level, those wards with higher support worker staffing were associated with higher rates of women reporting they always had help when they needed it and were always treated with kindness and understanding [5]. This study adds to the literature on support worker staffing and measured staffing closer to women at ward level, whereas most previous studies had looked at staffing in the whole organisation or focussed on midwifery staffing alone.

The next two studies [6,7] accessed individual patient data from three NHS trusts over forty-six months covering 106,904 maternal admissions, of which 64,250 admissions resulted in a birth. This was matched to staffing during each day. This precise measurement allowed variables to be matched closely in location and time. The analysis took account of individual factors such as the type of birth and maternal age and separated out the factors related to staffing.

Variation was noted in midwifery staffing and the demand for care. Understaffing by midwives was significantly associated with higher rates of postnatal readmissions within 7 days of discharge (11% increase in odds of readmission) [6]. This increased chance of readmission is in line with findings from other studies in the maternity and nursing literature. These findings were not replicated for understaffing by maternity support workers.

The rate of reported harmful incidents in the three services ranged from 2.1 to 3.0 per 100 admissions [7]. Understaffing by registered midwives was associated with an 11% increase in harmful incidents, which was statistically significant. Understaffing by maternity support workers was not associated with an increase in harmful incidents. Analysis of specific types of incidents (e.g. medicines incident, discharge incident, incidents with moderate harm or worse) showed no statistically significant associations, but most of the estimates were in the direction of increased incidents when services were understaffed.

The NHS data enabled analysis of shift-level staffing and detailed analysis of service user movement through maternity services. Peaks in admission and discharges were noted, and days with a higher than average service user movement were associated with a 19% increase in rate of reported harmful incidents, which was statistically significant. These increased admissions and discharges on a shift were also significantly related to increased reporting of specific incidents such as haemorrhage, third or fourth degree tear and delays in care [7].

Discussion

Midwifery and support worker staffing levels have been noted to vary from day to day, within and between organisations. These studies explored associations between staffing and the quality of care, addressing some key gaps in the evidence base. The chosen measures are important given the focus on women's experiences of maternity care, the fact that postnatal care is often overlooked, and staffing can be drawn from this area to cover other areas of the service [8]. Higher midwifery and support worker staffing were associated with better experiences of postnatal care.

The increase in harmful incidents and readmissions are not only costly to the health service but also to women's health and wellbeing. Delays in care and the quality of discharge could be mediating factors in the relationship between low staffing and harmful events or readmissions. The workload associated with admissions and discharges needs to be recognised in staff planning, as staffing matched to the number of beds does not account for this additional workload.

Results come from the analysis of large existing health datasets. Some measurements such as readmissions are consistently and completely reported, however, other measures such as women's experience and reported incidents will not capture all cases, through non-response or under reporting. More research on staffing, incomplete care and the relationship with outcomes is needed to understand more about these relationships.

Conclusions

The evidence presented in the scoping review and these four research studies highlights the potential impact of understaffing on a range of outcomes, not just those relating to labour care. The relationships have not been confirmed as being causal, as evidence comes from observational studies.

This work justifies the need to address low staffing levels and match staffing to women's needs and service activity. The evidence suggests that maternity support workers contribute to women's experience of care but not to safety or readmissions. For this reason, they should not be deployed as a substitute for midwives in staff planning.

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