Health and Social Care in the community

Health and Social Care in the Community (2015) **23**(3), 225–241 doi: 10.1111/hsc.12112

Review

Trained or professional doulas in the support and care of pregnant and birthing women: a critical integrative review

Amie Steel PhD MPH GradCertEd (HigherEd) BHSc (Nat)[1,2], **Jane Frawley** MCSc BCompMed[1], **Jon Adams** BA (Hons) MA PhD[1] **and Helene Diezel** BA (SocSc)[1]

[1]Faculty of Health, Australian Research Centre in Complementary and Integrative Medicine, University of Technology Sydney, Ultimo, New South Wales, Australia and [2]Office of Research, Endeavour College of Natural Health, Fortitude Valley, Queensland, Australia

Accepted for publication 7 April 2014

Correspondence
Amie Steel
Office of Research
Endeavour College of Natural Health 269 Water St
Fortitude Valley, Queensland 4006, Australia
E-mail: amie.steel@uts.edu.au

What is known about this topic

- There may be a benefit to having continuous support from a layperson during labour and birth.
- Doula care has been developing as a professional occupation.
- Diverse courses for individuals wishing to train as a doula are available.

What this paper adds

- Trained or professional doula care is associated with a physical and emotional benefit for women.
- Complex interprofessional dynamics exist between professional doulas and midwives.
- There are substantial gaps in current empirical knowledge regarding the practice and outcomes of trained or professional doulas.

Abstract

The professionalisation of doula care and research interest in this area of maternity care/support have both grown internationally in recent years highlighting important broader issues around the access, continuity and delivery of maternity care services. However, no work to date has provided a critical appraisal of the international literature on this topic. In response, this paper presents the first critical review of international empirical literature examining professional doula care for pregnant and birthing women. A database search of AMED, CINAHL, Maternity and Infant Care, and MEDLINE using the search term, "doula" was undertaken. A total of 48 papers published between 1980 and March 2013 involving trained or professional doulas were extracted. Four descriptive categories were identified from the review: 'workforce and professional issues in doula care'; 'trained or professional doula's role and skill'; 'physical outcomes of trained or professional doula care'; and 'social outcomes of trained or professional doula care'. Of the studies evaluating outcomes of doula care, there were a number with design and methodology weaknesses. The review highlights a number of gaps in the research literature including a lack of research examining doula workforce issues; focus upon the experience and perspective of significant stakeholders such as expectant fathers with regard to trained or professional doula care; clinical trials measuring both subjective experiences and physical outcomes of trained or professional doula support; synergy between the design of clinical trials research examining trained or professional doula care and the clinical reality of professional doula practice. It is imperative that key aspects of trained doula care be subject to further rigorous, empirical investigation to help establish an evidence base to guide policy and practice relating to this area of support and care for pregnant and birthing women.

Keywords: doula, interprofessional, labour support, postnatal support, pregnancy support, professional, systematic review

Introduction

Doula care – defined for the purpose of this review as the care an individual provides of physical, social and emotional support during pregnancy, labour, birth and the postnatal period – has recently been identified as being potentially beneficial to women during labour and birth (Rosen 2004). The doula's role is to provide such support to a birthing woman and her family (Stockton 2011). A doula supports the mother

to make an informed choice, listens to expectant couple's fears and expectations, and develops a trust-based relationship, which facilitates a supportive dynamic during labour and birth. Doulas are not qualified to give advice regarding obstetric interventions or maternity care options. At the request of the couple, a doula can, however, advocate for the couple's decisions and preferences during labour and birth. They also help to protect the birth space from unwanted interruptions while aiming to complement the midwife or obstetrician in their clinical role. This respectful assistance of the maternity care provider does not extend to undertaking clinical responsibilities for the birthing woman. A doula may be trained in complementary and alternative medicine and as such may use these to provide additional intrapartum support (Stockton 2011). A doula may also apply her understanding of the pelvis and its function during labour to assist the woman to achieve optimal birth positioning through all intrapartum stages (Simkin 2011).

Past and current doula care: professionalisation of an ancient practice

Historically, women have assisted women who are giving birth and this assistance usually involved continuous physical and emotional support (Oakley 1984, Odent 2009). A change in the cultural norms influencing the individuals providing birth support has seen increased attendance and involvement of fathers in place of the traditional place of women (Odent 2009). Current research suggests that this results in a sense of isolation and psychological stress for both parents (Genesoni & Tallandini 2009). It is in response to this outcome that interest in continuous support during labour from an experienced labour companion has grown in the last 30 years (Marshall *et al.* 2002). These labour companions have come to be known by the Greek word for a woman caregiver – *doula* (Marshall *et al.* 2002).

Recent years have witnessed the emerging professionalisation of doulas in a number of countries. Many women providing doula care do so as an occupation involving paid work, which is knowledge-based and achieved following higher education and/or vocational training. In addition, modern doulas offer primarily a middle-class service. Through all of these traits, contemporary doulas can define their occupation as a *profession* (Evetts 1999). At the very least, some argue that those undertaking expert doula training may be better described as 'paraprofessionals' due to their role in assisting health professionals such as doctors (Hans & Korfmacher 2002). Whether as professionals or paraprofessionals, the term 'lay-person' – traditionally used to describe doulas – may not be reflective of contemporary doula care.

In line with this professionalisation, there is also an increasing availability of training available for individuals wishing to offer professional doula services (Childbirth International 2010). With these factors in mind, and for the purposes of this review, a doula can be defined as an individual who has undergone training and established a fee-for-service agreement with a woman to provide doula care during the antenatal, intrapartum and/or postnatal periods, and this distinguishes her from individuals providing untrained, informal or non-specific continuous labour support.

Professional doula practice in the international maternity care setting

Professional associations representing doulas have been established in the United Kingdom (Doula UK Ltd n.d.), Switzerland (The Swiss Association of Doulas 2011) and North America [both United States (US) and Canada] (DONA International 2005), although this trend does not extend to countries such as Australia or Sweden where no organised body offers certification beyond training. Across these settings, models of maternity care vary substantially between highly medicalised and obstetrician-led care through to prioritisation of midwifery-led continuity of care and many variations between. Likewise, models of doula care vary substantially across different locations and include hospital-based, community-based and volunteer doula programmes (Morton & Basile 2013). Statutory registration of doulas does not exist at a federal level in any country, although there are recent developments in Minnesota, US (2013), which do require statutory registration for those providing doula care (Minnesota House of Representatives 2013). Beyond this isolated case, there is no known requirement that an individual offering professional doula services has to undertake any training. As such, for the purposes of this review, the term 'professional doula' will refer to individuals offering a fee-for-service contract arrangement to women and the term 'trained doula' will refer to individuals who have undergone explicit training. This differentiation will avoid assumptions regarding the level of training of professional doulas if it is not explicitly stated.

Women's motivations for engaging a professional doula

It has been suggested that the professionalisation of doula services has occurred in response to deficits in

available maternity care (Dahlen *et al.* 2011). Proponents of this view have linked this trend with women seeking continuity of care from a known person throughout their pregnancy and birth and finding access to this care model limited through their conventional maternity health professionals (Dahlen *et al.* 2011). It is perhaps for this reason that commentators have recommended that women should have unrestricted access to continuous emotional and physical support from a doula (Leslie & Storton 2007). This recommendation is also validated from an economic perspective through a US analysis, which indicates that continuous labour support may yield a cost saving of between $424.14 and $530.89 per birth as a result of reduced caesarean section delivery (Chapple *et al.* 2013).

While the value and benefit of doula care have often been posited and have been seen to encompass both social and physical support in labour (DONA International 2005, Australian Doula College 2007, Doula UK Ltd n.d.), a comprehensive understanding of trained or professional doula care remains lacking. Previous reviews of doula care have been defined by their restricted research methodology focus (Scott *et al.* 1999a,b, Bowers 2002, Rosen 2004) and have examined only specific outcomes in isolation such as social experiences or women's physiological birth outcomes. A systematic review previously undertaken examined the value of continuous labour support provided by any professional caregiver or layperson (Hodnett *et al.* 2012) rather than focusing specifically on those individuals who operate as professional doulas or have undergone formal 'trained doulas'. The education providers offering training for professional doulas suggest that in undertaking training, doulas are able to deliver a higher standard of care and a better birth experience for women (DONA International 2005, Australian Doula College 2007, Doula UK Ltd n.d.). Given the rising availability of professional doula services for pregnant and birthing women, there is a need to examine formally trained and professional doulas as a discrete health provider group.

The rise of doula support services and the consideration of the trained and professional doula's role and contribution (both current and potential) to the care of pregnant women highlight broader issues usually examined within health services research such as access, continuity and delivery of maternity care services. However, no work to date has provided a critical review and appraisal of the international literature on this topic. In response, this paper presents the first critical review of recent international empirical literature examining trained and professional doula care for pregnant and birthing women.

Aim

The aim of this review was to critically appraise recent empirical research regarding all aspects of trained and professional doula care. This included practice patterns and workforce issues alongside the outcomes associated with providing trained and professional doula support services to women during pregnancy, labour, birth and postnatal care.

Design

The review followed a critical, integrative review design (Adams *et al.* 2011). This design allowed for a critical appraisal of available literature and an associated categorical analysis of the identified empirical research. The appraisal and analysis was based upon a critical framework developed and reported previously (Adams *et al.* 2012).

Search methods

A database search was conducted to identify peer-reviewed papers that focused on trained doulas. The database search included PubMed, AMED (Allied and Complementary Medicine Database), CINAHL, Maternity and Infant Care and MEDLINE, as the most authoritative databases encompassing maternal health, medicine and allied health/complementary medicine scholarship. The search was conducted in March 2013 using the search term "doula" and without date restrictions. Manual searching of the reference lists of identified papers was also conducted to verify that no relevant papers had been overlooked. Papers were included without date restrictions if they reported original research and were written in English. Papers were excluded if they reported findings from untrained labour support.

Each paper was screened by the lead author according to its compliance with the inclusion and exclusion criteria. This involved a hierarchical procedure whereby the located papers were initially screened based on title, followed by abstract. Where the abstract or title did not provide sufficient information to determine whether a paper met the review criteria, the full manuscript was accessed and examined prior to determining inclusion or exclusion. Papers were discarded at each stage of the process where they were determined not to comply with the defined criteria.

Search outcome

The search results (n = 1186) were imported into EndNote (Thomson Reuters 2008) referencing and bibliography management software. A total of 1013 were excluded based upon their title due to not reporting original research (n = 991) or being written in a language other than English (n = 22). An additional 18 papers were excluded after reviewing their abstract as not original research papers or reporting the findings involving untrained labour support, with 3 more papers excluded for the same reasons after reviewing the full text. A final 104 papers were discarded as duplicates. After exclusion, a total of 48 papers met the inclusion criteria and were selected for review. The process undertaken for this review is shown in Figure 1. An overview of all papers included in the review including preliminary categorical analysis is outlined in Table 1.

Critical appraisal and analysis

The critical appraisal of study quality for research examining clinical outcomes was conducted by applying a quality scoring system, modified from a system, which was previously developed by Adams *et al.* (2012) (see Table 2). This system was designed to systematically compare and evaluate the studies reviewed and allow for appraisal across three dimensions: methodology; reporting of participants' characteristics; and reporting of doula care. Methodology was appraised according to the use of a representative sampling strategy, adequate sample size, a response or participation rate of >75% and low recall bias (defined as prospective data collection or retrospective data collection within the previous 12 months) (Adams *et al.* 2012). This evaluation of sampling was also modified for the purposes of this review to further strengthen the rigour of the critical framework. Quantitative papers were appraised according to a determination of sample size based upon a power analysis of >80%. Where the power analysis was not reported, a sample of >385 was accepted based upon standard precision analysis principles to account for possible sampling error (Chow *et al.* 2008). The inclusion of power analysis or sampling error calculations provides an estimate for the parameters of the population and the calculation of adequate sample size as it relates to the measured outcomes (Creswell & Plano Clark 2011). Qualitative papers were appraised according to their reporting of thematic saturation, which acknowledges the purpose of qualitative research to provide in-depth information about phenomena rather than to generalise from a sample (Creswell & Plano Clark 2011). Appraisal of sample size for qualitative studies was based upon a minimum sample of 15 participants where thematic saturation was not reported. Critical evaluation of characteristics and profiles of the study participants was based on the inclusion of details of parity, age, ethnicity and socioeconomic status. Finally, the studies were assessed for the quality of reporting of doula care, which encompassed the inclusion of the researcher's definition of the training/professionalisation of doulas, explicit description of the psychosocial outcomes evaluated and clear delineation of the medical/obstetric outcomes examined. These three components were selected for inclusion in the critical framework in line with the aim of this review. The description of the level of training or professionalisation of doulas involved in any identified study was included in the framework due to the specific focus on this subset of doula care within the review. Both psychosocial and medical/obstetric outcomes were included due to the dual nature of doula care in providing social and emotional support with the intention of improving physiological and psychological outcomes of birth for mother and baby (Marshall *et al.* 2002). Each component of the three dimensions was awarded 1 point if the paper achieved the minimum defined requirement and cumulative scores for each paper were calculated with a maximum potential score of 11. Scores for the studies were assigned independently by two authors. The results were then compared and differences resolved by discussion.

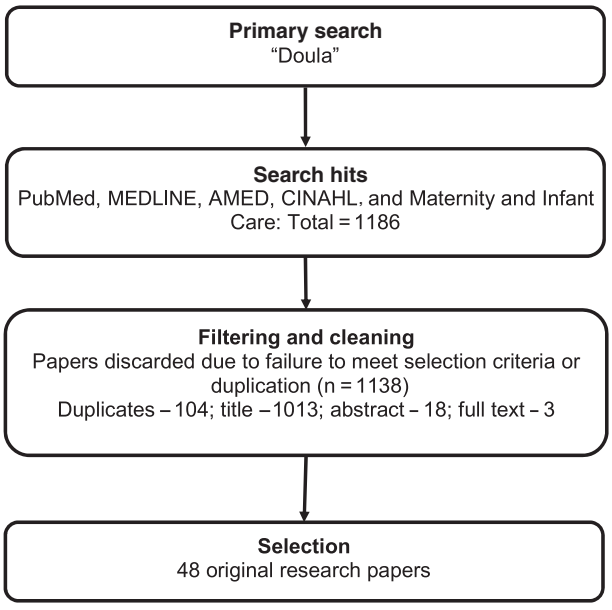

Figure 1 The literature search and selection process.

Table 1 Research-based literature on trained or professional doula care

Author (year)	Country	Method	Target population	Sample	Theme*			
					I	II	III	IV
Dundek (2006)	Somalia	Cohort (retrospective)	Women	*n* = 348	X		X	
Gruber *et al.* (2013)	United States	Cohort (retrospective)	Women	*n* = 225			X	X
Harris *et al.* (2012)	Canada	Cohort (retrospective)	Women	*n* = 1238			X	
Kozhimannil *et al.* (2013)	United States	Cohort (retrospective)	Women	*n* = 279,008			X	
Mottl-Santiago *et al.* (2008)	United States	Cohort (retrospective)	Women	*n* = 11,471			X	
Newton *et al.* (2009)	United States	Cohort (retrospective)	Women	*n* = 349			X	
Nommsen-Rivers *et al.* (2009)	United States	Cohort (prospective)	Women	*n* = 141			X	
Paterno *et al.* (2012)	United States	Cohort (retrospective)	Women	*n* = 648		X	X	
van Zandt *et al.* (2005)	United States	Cohort (retrospective)	Women	*n* = 89			X	
Eftekhary *et al.* (2010)	Canada	Cross-sectional survey	Professional doulas	*n* = 212	X			
Goedkoop (2009)	United Kingdom	Cross-sectional survey	Professional doulas	*n* = 140			X	
Klein *et al.* (2009)	Canada	Cross-sectional survey	Maternity care practitioners	Family physicians: *n* = 897 Obstetricians: *n* = 549 Nurses: *n* = 545 Midwives: *n* = 400 Doulas: *n* = 192	X			
Lantz *et al.* (2005)	United States	Cross-sectional survey	Professional doulas	*n* = 626 (certified 471/student 155)	X			
Liva *et al.* (2012)	Canada	Cross-sectional survey	Nurses	*n* = 545	X			
Steel *et al.* (2012)	Australia	Cross-sectional survey	Women	*n* = 1835	X	X		
Steel *et al.* (2013)	Australia	Cross-sectional survey	Women	*n* = 160			X	X
Bertsch *et al.* (1990)	United States	Mixed-methodology (observation and cross-sectional survey)	Doulas, fathers and women	Observation: Births: *n* = 14		X		
Deitrick and Draves (2008)	United States	Mixed methodology (cross-sectional survey × 2 and interviews)	Doulas, nurses and women	*Survey:* Women: *n* = 142 Doula: *n* = 104 *Interviews:* Women: *n* = 18 Doulas: *n* = 9 Nurses: *n* = 10	X	X		
Campbell-Voytal *et al.* (2011)	United States	Ethnographic study (observation and interviews)	Professional doulas and women	Doulas: *n* = 4 Women: *n* = 13	X	X		
Gentry *et al.* (2010)	United States	Ethnographic study (observation and interviews)	Women	*n* = 30		X		
Hunter (2012)	United States	Ethnographic study (observation and interviews)	Professional doulas and women	Doulas: *n* = 9 Women: *n* = 9		X		
McComish and Visger (2009)	United States	Ethnographic study (observation)	Women	*n* = 13		X		
Stevens *et al.* (2011)	Australia	Focus groups	Professional doulas and midwives	Doulas: *n* = 6 Midwives: *n* = 11	X			
Akhavan and Edge (2012)	Sweden	Interviews (semi-structured)	Women	*n* = 10	X			X

Table 1 (continued)

Author (year)	Country	Method	Target population	Sample	Theme*			
					I	II	III	IV
Akhavan and Lundgren (2011)	Sweden	Interviews (semi-structured)	Midwives	*n* = 10	X			
Barron *et al.* (1988)	United States	Interviews (structured)	Women	*n* = 41			X	
Berg and Terstad (2006)	Sweden	Interviews (semi-structured)	Women	*n* = 11		X		
Breedlove (2005)	United States	Interviews (semi-structured)	Women	*n* = 24		X		X
Campbell *et al.* (2007)	United States	Interviews (structured)	Women	*n* = 494			X	X
Campero *et al.* (1998)	Mexico	Interviews (semi-structured)	Women	*n* = 16		X		X
Gilliland (2010)	United States	Interviews (semi-structured)	Doulas and women	Doulas: *n* = 30 Women: *n* = 10		X		
Koumouitzes-Douvia and Carr (2006)	United States	Interviews (semi-structured)	Women	*n* = 12		X		
Lagendyk and Thurston (2005)	Canada	Interviews (semi-structured)	Doula programme stakeholders	*n* = 16	X			
Lundgren (2008)	Sweden	Interviews (semi-structured)	Women	*n* = 9		X		
Manning-Orenstein (1998)	United States	Interviews (semi-structured)	Women	*n* = 35				X
Schroeder and Bell (2005)	United States	Interviews (semi-structured)	Women	*n* = 18	X	X		
Smid *et al.* (2010)	Mexico	Interviews (semi-structured)	Traditional midwives and hospital staff	Trad. midwives: *n* = 65 Hospital staff: *n* = 24	X			
Torres (2013)	United States	Interviews (semi-structured)	Doulas and lactation consultants	Doulas: *n* = 16 Lactation consultants: *n* = 18	X			
Campbell *et al.* (2006)	United States	Randomised-controlled trial	Women	*n* = 586			X	
Gordon *et al.* (1999)	United States	Randomised-controlled trial	Women	*n* = 314		X	X	
Kennell *et al.* (1991)	United States	Randomised-controlled trial	Women	*n* = 412			X	
Klaus *et al.* (1986)	Guatemala	Randomised-controlled trial	Women	*n* = 465			X	
Langer *et al.* (1998)	Mexico	Randomised-controlled trial	Women	*n* = 724			X	
McGrath and Kennell (2008)	United States	Randomised-controlled trial	Women	*n* = 420			X	
McGrath *et al.* (1999)	United States	Randomised-controlled trial	Women	*n* = 531			X	
Papagni and Buckner (2006)	United States	Survey (semi-structured)	Women	*n* = 9	X			
Sosa *et al.* (1980)	Gautemala	Randomised-controlled trial (Quasi)	Women	*n* = 40			X	
Trueba *et al.* (2000)	Mexico	Randomised-controlled trial	Women	*n* = 100			X	

*Themes identified for research related to professional doulas. Theme I: Workforce and professional issues; Theme II: Doula's role and skill; Theme III: Medical outcomes of doula care; Theme IV: Social outcomes of doula care.

Table 2 Description of quality scoring system for the health outcomes research associated with trained or professional doula care

Dimensions of quality assessment	Points awarded*
Methodology	
A. Representative sampling strategy	1
B1. Sample size >385 (quantitative) *or* determined statistical power of >80%	1
B2. Sample size >15 (qualitative) *or* reported thematic saturation	
C. Response/participation rate >75%	1
D. Low recall bias (prospective data collection or retrospective data collection within past 12 months)	1
Reporting of participants' characteristics	
E. Parity	1
F. Age	1
G. Ethnicity	1
H. Indicator of socioeconomic status (e.g. income, education)	1
Reporting of doula care	
I. Definition of training/professionalisation of doulas	1
J. Psychosocial outcomes reported	1
K. Medical/obstetric outcomes reported	1

*Maximum score: 11 points.

The quality score of each relevant individual study is reported in Table 3. A study receiving a quality score of >8 was determined to be of acceptable quality as it reflects significant representation across at least two of the domains and some attention to all three areas of interest. The quality assessment method was not applied to the research evaluating non-clinical outcomes as it was determined by the authors that there was insufficient consistency in purpose and objectives within the remaining research to effectively appraise these using a structured system.

Critical analysis of the identified studies was also conducted through categorical analysis, which allowed similar research to be grouped where appropriate, and for both clinical and non-clinical studies to be evaluated. All identified papers were read and reread and key objectives were identified within each paper. These objectives were then grouped within similar descriptive categories to allow contrast and comparison of findings within and across studies. Categories were identified independently by two authors with any discrepancies resolved through discussion.

Results

The review papers identified empirical trained doula research from various countries published between 1980 and 2013. However, 33 of the 48 papers reported findings from either the US or Canada, with the remaining from the United Kingdom, Somalia, Guatemala, Mexico, Australia and Sweden. Thirty-one of the 48 papers included in the review reported on clinical outcomes of trained doula care. These clinical studies were appraised according to a quality scoring system, which identified a number of methodological issues such as small sample sizes, non-representative sample methods and low or unreported response/participation rates with less than half of these papers (12 of 31) receiving a score of 8 or more (out of a possible total of 11).

There has been an increasing interest in doula care research over more recent years with 28 of the total studies examining doula care being published between 2007 and 2013. Although the focus of the research is still primarily on women's experiences and clinical (obstetric or psychosocial) outcomes of trained doula care, more recent studies have also examined professional doula perspectives and their place in maternity care provision. The findings across all research can be grouped into four overarching descriptive categories: workforce and professional issues; trained doula's role and skills; medical outcomes of trained doula care; and social outcomes of trained doula care. Each of these categories is outlined in turn below.

Workforce and professional issues in doula care

The development of the professionalisation of doula care provides significant scope within the field of health services research to examine the workforce characteristics, dynamics and practice of professional doulas. The study designs within this category are quite mixed, with some researchers utilising quantitative methods such as cross-sectional survey (Lantz *et al.* 2005, Klein *et al.* 2009, Eftekhary *et al.* 2010, Liva *et al.* 2012, Steel *et al.* 2012) or cohort study (Dundek 2006) design and others drawing upon qualitative approaches such as semi-structured interviews (Lagendyk & Thurston 2005, Schroeder & Bell 2005, Smid *et al.* 2010, Akhavan & Lundgren 2011, Akhavan & Edge 2012, Torres 2013), focus groups (Stevens *et al.* 2011) and ethnographic observation (Campbell-Voytal *et al.* 2011). One additional research group applied a mixed methodology research design, which included two cross-sectional surveys of women and doulas, and semi-structured interviews with women, doulas and nurses (Deitrick & Draves 2008).

Doula workforce research to date has been limited to the North American setting (Lantz *et al.* 2005, Eftekhary *et al.* 2010). Results from this work in the

Table 3 Quality score of studies on outcomes of professional doula care*

Author (year)	Dimensions of quality assessment			Total score
	Methodology	Reporting of participants' characteristics	Reporting of doula care	
Langer *et al.* (1998)	4 [A, B1, C, D]	3 [E, F, H]	3 [I, J, K]	10
McGrath and Kennell (2008)	4 [A, B1, C, D]	4 [E, F, G, H]	2 [I, K]	10
Gordon *et al.* (1999)	2 [A, D]	4 [E, F, G, H]	3 [I, J, K]	9
McGrath *et al.* (1999)	4 [A, B1, C, D]	4 [E, F, G, H]	1 [K]	9
Newton *et al.* (2009)	4 [A, B1, C, D]	4 [E, F, G, H]	1 [K]	9
Paterno *et al.* (2012)	4 [A, B1, C, D]	3 [F, G, H]	2 [I, K]	9
Akhavan and Edge (2012)	3 [A, C, D]	4 [E, F, G, H}	2 [I, J]	9
Breedlove (2005)	2 [B2, D]	4 [E, F, G, H]	2 [I, J]	8
Campbell *et al.* (2006)	3 [B1, C, D]	3 [E, F, G]	2 [I, K]	8
Campbell *et al.* (2007)	3 [B1, C, D]	3 [E, F, G]	2 [I, J]	8
Mottl-Santiago *et al.* (2008)	4 [A, B1, C, D]	3 [E, F, G]	1 [K]	8
Kozhimannil *et al.* (2013)	4 [A, B1, C, D]	2 [F, G]	2 [I, K]	8
Harris *et al.* (2012)	4 [A, B1, C, D]	2 [E, F]	1 [K]	7
Steel *et al.* (2013)	2 [C, D]	2 [E, G]	3 [I, J, K]	7
Kennell *et al.* (1991)	4 [A, B1, C, D]	1 [E]	1 [K]	6
van Zandt *et al.* (2005)	1 [D]	3 [E, F, H]	2 [I, K]	6
Nommsen-Rivers *et al.* (2009)	1 [D]	4 [E, F, G, H]	1 [K]	6
Gruber *et al.* (2013)	2 [D]	2 [F, G]	2 [I, K]	6
Klaus *et al.* (1986)	4 [A, B1, C, D]	0	1 [K]	5
Campero *et al.* (1998)	2 [B2, D]	1 [E]	2 [I, J]	5
Manning-Orenstein (1998)	1 [D]	3 [E, F, G, H]	1 [J]	5
Trueba *et al.* (2000)	2 [A, D]	1 [E]	2 [I, K]	5
Berg and Terstad (2006)	1 [D]	3 [E, F, G]	1 [J]	5
Dundek (2006)	1 [A, D]	2 [E, G]	2 [I, K]	5
Sosa *et al.* (1980)	1 [D]	0	2 [J, K]	3
Goedkoop (2009)	0	1 [E]	2 [I, K]	3
Barron *et al.* (1988)	1 [D]	?	?	?

*Akhavan and Edge (2012), Akhavan and Lundgren (2011), Berg and Terstad (2006), Bertsch *et al.* (1990), Campbell-Voytal *et al.* (2011), Deitrick and Draves (2008), Eftekhary *et al.* (2010), Gentry *et al.* (2010), Gilliland (2010), Hunter (2012), Klein *et al.* (2009), Koumouitzes-Douvia and Carr (2006), Lagendyk and Thurston (2005), Lantz *et al.* (2005), Liva *et al.* (2012), Lundgren (2008), Papagni and Buckner (2006), Schroeder and Bell (2005) Smid *et al.* (2010), Steel *et al.* (2012), Stevens *et al.* (2011) and Torres (2013) do not evaluate the outcomes of trained doula care and as such the criteria for 'clinical evaluation' do not apply to these studies and they were not assessed via the quality reporting system.

US and Canada provide some preliminary demographic data, suggesting that professional doulas tend to be aged between 30 and 40 years, married and have previously given birth, and have post-secondary qualifications (Lantz *et al.* 2005, Eftekhary *et al.* 2010). This literature review reports that the majority of professional doulas occupy solo practice and attend between 4 and 11 births per year. This may take place in a woman's home and/or a hospital setting, and provides antenatal, intrapartum and postnatal (up to 28 days) support. The sample sizes for these studies are adequate; however, given the limited localities where these workforce audits have been undertaken, the international generalisability of these studies remains limited.

Beyond this basic descriptive information, doula workforce research has also identified a number of professional issues. Professional doulas feel that while they aim to either prevent negative experiences for women (Campbell-Voytal *et al.* 2011) or provide a positive experience for the mother through supporting, empathising and empowering women and their families (Papagni & Buckner 2006, Akhavan & Lundgren 2011, Stevens *et al.* 2011), they nevertheless face a number of significant challenges to providing this care. On a personal level, professional doulas relate that they find it difficult to manage the demands of their practice with their own family and work life with reference to sleep deprivation, being on call and organising childcare when required to attend births (Lantz *et al.* 2005, Campbell-Voytal *et al.* 2011). Many also find the income generated through their doula work insufficient for subsistence, with the average gross income from doula work listed as US$3645 per annum, although some professional doulas also hold other concurrent employment. Despite this, profes-

sional doulas report finding their work rewarding on a personal or emotional level (Eftekhary *et al.* 2010), and the majority expect to still be providing professional doula care in 5 years (Lantz *et al.* 2005).

Interprofessional dynamics with other health practitioners is also an apparent challenge for professional doulas. Qualitative studies from the US and Mexico report that professional doulas perceive themselves as receiving poor acceptance or support from others offering medical maternity care (Smid *et al.* 2010, Campbell-Voytal *et al.* 2011). Further to this, a large workforce survey in Canada found that doulas perceived that they were being excluded from attending births by hospital or administrative regulations more so than by the actions of other health professionals (Eftekhary *et al.* 2010). The negative attitudes of hospital staff towards doulas have also been explored in another US qualitative study identifying women receiving doula care in the hospital environment as describing significant resentment and animosity from nurses towards their doula (Papagni & Buckner 2006).

The views held by midwives towards doulas, as reported by the literature, are somewhat conflicting. A qualitative study by Stevens *et al.* (2011) identified Australian midwives as perceiving that doulas diminish the midwives' relationship with birthing women and often overstep professional practice boundaries. However, a cross-sectional survey of Australian women found that women were more likely to use a doula for their pregnancy or birth if they were consulting with a midwife (Steel *et al.* 2012). Potential interprofessional tensions have been reported to be observed by women who received trained doula support (Hunter 2012, Steel *et al.* 2013); however, women also suggested that the level of training their personal doula received may, through the doula's interactions with midwives and obstetricians, effect change in the perception of the maternity care provider towards the value of doula care more generally (Steel *et al.* 2013).

Conversely, midwives in a Swedish study (Akhavan & Lundgren 2011) have described doulas as an asset to their practice. The Swedish midwives explained that due to doula support for immigrant women, the midwives were able to be more effective in their role. These Swedish midwives also argued that doulas provide security and confidence for birthing women, offering continuity of care if this is not available through a midwife. A similar finding has been described in a US study (Schroeder & Bell 2005) examining a doula care programme for incarcerated women in which the maternity health professionals and correctional officers reported a high level of satisfaction with the programme. Both the Swedish midwives and the US correctional facility staff were reflecting more specifically on doulas that provide support to targeted populations within a structured programme. However, in the Australian studies, midwives and women were reporting on experiences associated with doulas in a general population with highly variable levels of training. In this light, an important and contrasting study from Canada, which reported on general attitudes towards labour and birth, identified a less positive attitude towards doulas being held by obstetricians and more acceptance towards doulas being held by midwives (Klein *et al.* 2009). These discrepancies may be linked to a midwife's view that doulas need to be confident and cooperative and as such be able to give advice without making decisions on the woman's behalf (Akhavan & Lundgren 2011), and that this may not always be a skill doulas bring to the birth suite. However, due to the differing study settings in which this topic has been examined, a cross-comparison of findings needs to be undertaken with caution.

Current research examining interprofessional relations between midwives and professional doulas remains limited due to the small number of studies and the small number of participants in each study. Furthermore, only the Australian and Swedish studies were specifically examining the role of the doula, while the objective of the US and Canadian study was much broader and, as such, this element was only given minimal attention by the researchers. The midwives in the Swedish study were reporting on their experience of specific doulas providing care within a discrete programme. In contrast, the midwives in the Australian study were discussing professional experiences of working with a range of doulas within diverse clinical settings. The inconsistencies in the available research objectives and the maternity care context associated with current studies prevent conclusive insights being drawn regarding the interprofessional dynamics between midwives and trained doulas providing care to the same woman.

Trained or professional doula's role and skill

The role of trained doulas and the skills they provide to women throughout pregnancy, labour, birth and postnatal care have received some research attention, the findings of which are summarised in Figure 2. Primarily, the study design evaluating this aspect of doula care has been qualitative with most involving semi-structured interviews with women receiving care from a trained doula (Campero *et al.* 1998, Breedlove 2005, Schroeder & Bell 2005, Berg & Terstad 2006, Koumouitzes-Douvia & Carr 2006, Lund-

gren 2008, Gilliland 2010). Semi-structured interviews are a useful research method to capture the richness of participants' experiences and perceptions of a topic. They also encourage disclosure of personal and private experiences by the participant to the reviewer, which may not be achieved through other methods such as focus groups. In the context of labour and birth, this method allows women to describe their understanding of the birth event and the care they received in their own words (Creswell & Plano Clark 2011). This work has been supplemented with ethnographic observation studies of doula care (McComish & Visger 2009, Gentry *et al.* 2010, Campbell-Voytal *et al.* 2011, Hunter 2012). Quantitative research methods have also been used either as an aspect of a randomised-controlled trial (RCT), designed to examine the role and skills of a doula (Gordon *et al.* 1999), a cohort study (Paterno *et al.* 2012) or a cross-sectional survey (Steel *et al.* 2012), or as part of a mixed-methodology study design (Bertsch *et al.* 1990, Deitrick & Draves 2008). The four main domains of a professional doula's role and skill (as outlined in Figure 1) as outlined in the available research are emotional support, empowerment, physical support and information provision.

Information sharing and mediation have been identified as common roles undertaken by trained doulas (Campero *et al.* 1998, Berg & Terstad 2006, Deitrick & Draves 2008, Lundgren 2008, McComish & Visger 2009, Gentry *et al.* 2010, Paterno *et al.* 2012). The type of information shared by trained doulas has been identified as diverse and it encompasses the doula's practical experience and knowledge about childbirth, pain management techniques and the birth setting (both for hospital and home births). Women draw on this knowledge in preparation for birth and during the birth itself (McComish & Visger 2009, Gentry *et al.* 2010, Gilliland 2010), as well as in the postnatal period (McComish & Visger 2009, Gentry *et al.* 2010). Research suggests that trained doulas also take on a mediation role on behalf of the women in birth (more so than the antenatal and postnatal period), and this manifests in a number of ways including translation of technical medical information between the medical staff and the women (Lundgren 2008, Gentry *et al.* 2010, Paterno *et al.* 2012) and, more commonly, ensuring that women feel that their perspective has been heard by those providing medical care (Koumouitzes-Douvia & Carr 2006, McComish & Visger 2009, Gentry *et al.* 2010, Gilliland 2010, Hunter 2012, Steel *et al.* 2012).

Trained doulas have also been described as using strategies to provide emotional support to women and their families during pregnancy and intrapartum (Gilliland 2010, Hunter 2012, Paterno *et al.* 2012). A dominant feature of these strategies is the affirmation of women and their birth choices in a non-judgemental manner (Berg & Terstad 2006, Koumouitzes-Douvia & Carr 2006, Lundgren 2008, McComish & Visger 2009, Gentry *et al.* 2010, Gilliland 2010, Hunter 2012, Paterno *et al.* 2012). Trained doulas were also found to encourage women to have confidence in themselves and the birthing process as well as in assisting women to feel secure in often unfamiliar birth environments (Campero *et al.* 1998, Breedlove 2005, Lundgren 2008, Gentry *et al.* 2010). This sense of security was often linked to the woman's perception of value in receiving 'continuity of care' (Breedlove 2005, Berg & Terstad 2006, Lundgren 2008, McComish & Visger 2009, Gilliland 2010, Akhavan & Lundgren 2011), although the definition of this term varied significantly across studies and women who did not receive continuity of doula support expressed dissatisfaction with this arrangement (Deitrick & Draves 2008).

Beyond their primary roles, research shows that trained doulas are often praised by women for lending support to partners and families (Bertsch *et al.* 1990, Berg & Terstad 2006, Koumouitzes-Douvia & Carr 2006, McComish & Visger 2009, Akhavan & Lundgren 2011, Campbell-Voytal *et al.* 2011, Paterno *et al.* 2012). Despite this, no research to date has evaluated doula care from the perspective of other significant support persons such as expectant fathers or close family members.

Physical outcomes of trained or professional doula care

A review of the literature on trained doula care for women and their families highlights that medical outcomes are the primary focus of both cohort studies (van Zandt *et al.* 2005, Dundek 2006, Mottl-Santiago *et al.* 2008, Newton *et al.* 2009, Nommsen-Rivers *et al.* 2009, Harris *et al.* 2012, Paterno *et al.* 2012, Gruber *et al.* 2013, Kozhimannil *et al.* 2013) and RCT designs (Sosa *et al.* 1980, Klaus *et al.* 1986, Kennell *et al.* 1991, Langer *et al.* 1998, McGrath *et al.* 1999, Trueba *et al.* 2000, Campbell *et al.* 2006, 2007, McGrath & Kennell 2008), while also being examined through cross-sectional surveys (Goedkoop 2009, Steel *et al.* 2013) and structured interviews (Barron *et al.* 1988). Research studies of varied design (observational and RCT) and participant size (between 40 and 600) indicate that the duration of labour may be shortened through trained doula care (Sosa *et al.* 1980, Klaus *et al.* 1986, Kennell *et al.* 1991, Trueba *et al.* 2000, Campbell *et al.* 2006, Nommsen-Rivers *et al.* 2009). This outcome was not, however, replicated in the findings from a large

RCT based in Mexico (Langer *et al.* 1998). Those conducting the Mexican study emphasised the policy limitations of the hospital where the intervention was undertaken as restricting the ability for trained doulas to encourage women's ability to change positions throughout labour – an approach which has been associated with lower rates of assisted deliveries and episiotomies, but a non-significant reduction in second-stage labour duration (Gupta *et al.* 2012) – and other aspects of intrapartum doula care, which may explain this discrepancy.

The research suggesting reduced intervention during birth as a result of trained doula support remains inconsistent. Nevertheless, the trend of empirical data, as reported in studies included in this review currently suggests reduced rates of instrumental delivery (Kennell *et al.* 1991, Langer *et al.* 1998, McGrath *et al.* 1999, Goedkoop 2009, Nommsen-Rivers *et al.* 2009), caesarean section (Klaus *et al.* 1986, Kennell *et al.* 1991, Dundek 2006, Goedkoop 2009, Harris *et al.* 2012, Paterno *et al.* 2012, Kozhimannil *et al.* 2013), epidural (Kennell *et al.* 1991, Gordon *et al.* 1999, McGrath *et al.* 1999, Trueba *et al.* 2000, van Zandt *et al.* 2005, Campbell *et al.* 2006, Goedkoop 2009, Newton *et al.* 2009, Paterno *et al.* 2012) and augmentation (Klaus *et al.* 1986, McGrath *et al.* 1999, Trueba *et al.* 2000, Goedkoop 2009).

Doula-supported women may also have better postnatal maternal–infant interactions (Sosa *et al.* 1980) and women who receive trained doula care during birth and/or postpartum are more likely to initiate or maintain breastfeeding for longer periods with fewer complications than standard care control groups (Klaus *et al.* 1986, Barron *et al.* 1988, Langer *et al.* 1998, Campbell *et al.* 2007, Mottl-Santiago *et al.* 2008, Newton *et al.* 2009, Nommsen-Rivers *et al.* 2009, Harris *et al.* 2012, Gruber *et al.* 2013). These benefits appear less likely to occur if the trained doula does not have a relationship with the woman during the antenatal period but simply provides intrapartum support (Gordon *et al.* 1999).

Another interesting trend relating to these clinical trials is the research design approach, which often includes doulas being allocated to the care of women as the women present to hospital in labour without prior meeting, and only via providing intrapartum and immediate postpartum support (Sosa *et al.* 1980, Kennell *et al.* 1991, Langer *et al.* 1998, Gordon *et al.* 1999, McGrath *et al.* 1999, Trueba *et al.* 2000, van Zandt *et al.* 2005, McGrath & Kennell 2008, Nommsen-Rivers *et al.* 2009). This is a feature that does not necessarily correlate with the practice reality of the majority of professional doulas (Lantz *et al.* 2005, Eftekhary *et al.* 2010) and which introduces a note of caution when interpreting the results from these empirical investigations. In particular, the transferability of the findings of clinical research is limited when doula care interventions do not reflect the practice reality of professional doulas. Similarly, all clinical research regarding trained doula care has taken place in a hospital environment rather than in the home or the community – both common settings for practice for many professional doulas according to the workforce surveys undertaken (Lantz *et al.* 2005, Eftekhary *et al.* 2010).

There is substantial variation in the quality of research examined within this category. Of the 22 papers reporting physical outcomes of trained doula care, 10 were assigned a score of 8 or more through quality assessment. Within the lower scoring papers, there were substantial deficiencies in the reporting of participant characteristics (such as age, ethnicity, socioeconomic status and parity). There were also methodological flaws with much of the research, particularly relating to type 1 bias due to the chosen sampling strategy, small sample sizes limiting statistical power and low (or unreported) response or participation rates. These weaknesses limit the conclusions which can be drawn from the studies in this category.

Social outcomes of trained or professional doula care

Despite the focus of trained doula care being on social and emotional support (DONA International 2005, Australian Doula College 2007, The Swiss Association of Doulas 2011, Doula UK Ltd n.d.), relatively little research to date (5 of 48 papers) has examined the outcomes of trained doula care in these terms. However, from the emerging empirical data available, it appears that doula care promotes a positive experience of pregnancy, birth and mothering for women (Campero *et al.* 1998, Manning-Orenstein 1998, Breedlove 2005, Campbell *et al.* 2007). All of these studies have been conducted using semi-structured interviews as the research method.

Women receiving trained doula support approach birth with positivity in both their view of themselves and their expectations of their birth experience (Campero *et al.* 1998, Manning-Orenstein 1998, Campbell *et al.* 2007). Most recently, this has been reported in a study in which primiparous women were interviewed over the phone 6–8 weeks postpartum after receiving doula support from a friend or family relative who had undertaken preliminary doula training. When compared with women receiving standard care, the intervention group was found to be more likely to report positive prenatal expectations about childbirth,

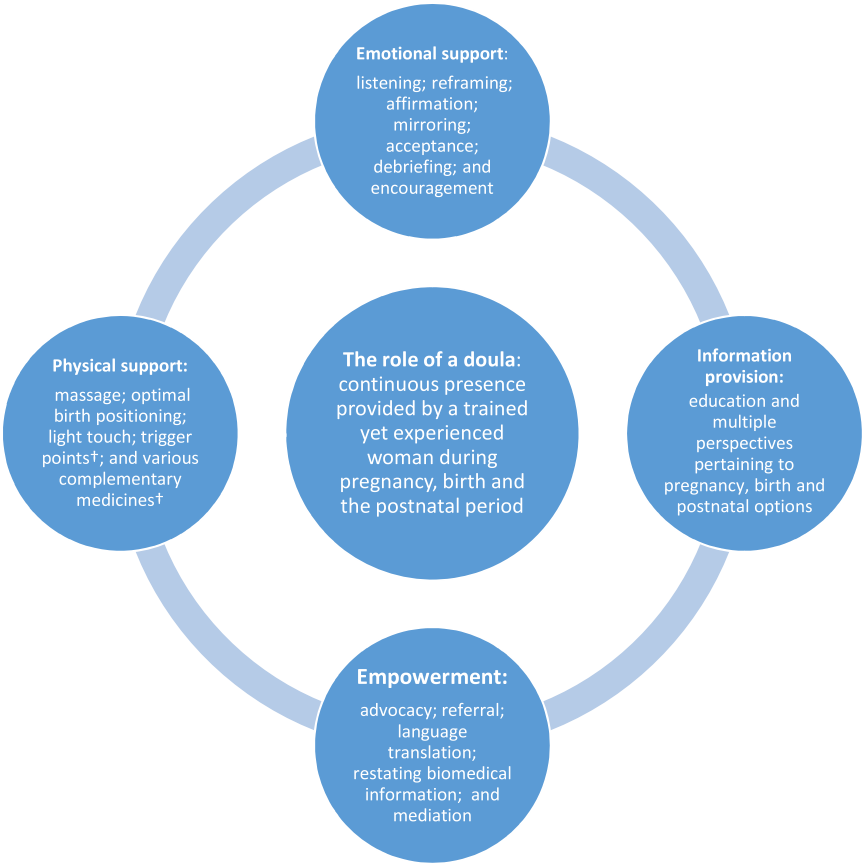

Figure 2 The role of a trained/professional doula during pregnancy, labour and the postnatal period for women, their partners and their families as described in current research. †There are limitations or restrictions on the use of these practices by doulas affiliated to some organisations (e.g. DONA International, CAPPA International) in North America.

positive perceptions of their infants and positive support from others (Campbell *et al.* 2007).

This positive attitude was also extended to the women's sense of self-worth and achievement following doula-supported birth (Manning-Orenstein 1998, Campbell *et al.* 2007). It has been proposed that this may be due to the women's perception that they had a more active role in their labour resulting in the birth being a more positive life experience (Campero *et al.* 1998, Breedlove 2005).

In addition to the low number of studies reporting findings related to the social outcomes of doula care, assessment of the quality of these papers highlights some methodological flaws. Primarily, this is not only associated with poor reporting of thematic saturation or low sample sizes but also extends to insufficient description of participant characteristics.

Alongside the direct social benefits to trained doula care, there is emerging evidence of the economic advantage for society and the health system more broadly. Recently, a US economic analysis of potential cost savings afforded through reduced caesarean section delivery rates associated with professional birth doula care was undertaken (Kozhimannil *et al.* 2013). This analysis drew on three possible scenarios, all of which included reimbursement for professional doulas of $100–$300 to achieve a 22.3%, 31.6% or 40.8% reduction in caesarean rates. The overall trend of the analysis suggests that reimbursement of professional birth doulas results in a substantial cost saving (up to $10.6 million dollars per state), but this is not achieved if higher reimbursements ($300/birth) are coupled with lower reductions in caesarean rates (22.3%).

Discussion

In recent years, there has been a shift in the provision of doula care in the maternity setting and in the context of a changing maternity care landscape. These changes include a stronger policy focus on normal birth by regulatory bodies in the United Kingdom (Maternity Care Working Party 2007), Australia (Kinnear 2010) and Canada (Society of Obstetricians and Gynaecologists of Canada 2008). The policies and position statements

developed in these countries have been underpinned by a women-centred care focus and an acknowledgement of the holistic needs of birthing women. In some circumstances, these policies have also led to the development of frameworks that encourage multidisciplinary team-based maternity care to maximise women's birth outcomes and experience (Australian Health Ministers' Advisory Council 2008, APS Group Scotland 2011). In this context, research examining trained doula care, an under-researched component of contemporary maternity care, has been gaining momentum in recent years with 28 of the 48 papers included in this review published in the previous 5 years. Despite this trend, the work conducted in this area is inconsistent and generally of poor methodological design. Lack of consistency in describing patient characteristics such as parity, ethnicity, age and socioeconomic status – all of which features can affect women's experience of maternity care (Kingston *et al.* 2012) and their pregnancy and birth outcomes (Blumenshine *et al.* 2010) – is one such methodological flaw. In addition, low sample sizes and non-representative sampling strategies were identified in many papers included in this review. As such, this critical review has identified a number of important research gaps in the investigation of professional doula care.

Research gaps and areas for future research

A major area which has so far failed to attract sufficient attention is doula workforce auditing. The surveys undertaken in North America (Lantz *et al.* 2005, Eftekhary *et al.* 2010) provide an introductory understanding of the doula workforce limited to these specific countries, but more research on this topic is needed. This includes an understanding of the size and demographics of the doula workforce as well as the practices and professional issues facing doulas. Such data are required to inform future clinical research intervention and design to allow examination of the effects of doula care as is commonly practised. It will also help ensure an improved understanding of the quality of knowledge and training of individuals providing professional doula services and thereby potentially address interprofessional communication and interaction issues between professional doulas and conventional maternity care providers for the benefit of birthing women. In some regards, this is of particular importance in countries which promote professionalisation of the doula workforce through association membership. However, such an approach is also necessary in other countries where professional doulas operate without practice standards being set by regulatory bodies.

An audit of available doula education will similarly assist in gaining an understanding of the philosophies and principles of doula practice and an audit of hospital administrative policies regarding doula care would provide greater insights into the professional issues and struggles faced by doulas supporting women during hospital births. In addition to these research needs, it is imperative that future enquiry also examine the experience of doulas supporting women beyond the hospital environment (i.e. home or community setting).

The perspective of other maternity health professionals regarding trained doula care is also notable in its scarcity. While preliminary work has been undertaken from the perspective of midwives, no research has examined the views and experiences of obstetricians providing care to women with the support of a trained doula. Given the dominant role that obstetricians play in maternity care in many countries, this is an important area which requires closer attention. Likewise, a comparative examination of the experiences of both midwives and obstetricians towards doulas with various levels of training is an important contribution of professional education to the reported interprofessional dynamics (Schroeder & Bell 2005, Akhavan & Lundgren 2011, Stevens *et al.* 2011).

Despite the assertion by women studied that their partner and families also benefit from doula care, exploration of the experience of these significant stakeholders is another area that requires research attention. While a number of studies have suggested that a key benefit of trained doula care is the support given to the woman's partner, research from the perspective of expectant fathers is necessary before this suggestion can be accepted as the case for both women *and* their partners.

In terms of clinical research, the evaluation of professional doula support has not followed a consistent approach that is able to systematically capture the subjective experiences or the objective outcomes of birth support by a trained doula. While some larger studies have been undertaken (Sosa *et al.* 1980, Klaus *et al.* 1986, Langer *et al.* 1998, van Zandt *et al.* 2005, McGrath & Kennell 2008), only one study (reported in two papers) (Campbell *et al.* 2006, 2007) has applied a mixed-methodology design and, in doing so, has attempted to measure both medical outcomes and women's experiences of care. A mixed-methodology approach within the research field needs to be encouraged and adopted to fully capture all valuable data related to doula support. Given that the scope of doula care includes social and emotional support alongside physical support, it is important that any evaluation of doula care uses a design that describes

the social and emotional outcomes for women and their families. Including this element in any future study does not imply that, given the physical component of support offered through doula care, medical outcomes should be excluded. Rather, it means that quantitative and objective medical measurements, such as maternal and neonatal outcomes and rates of intervention, should be collected and analysed with equal importance to qualitative data to provide a global understanding of the outcomes of professional doula care.

Another final element that must be considered in future outcomes-based studies on this topic is to ensure that the doula interventions employed as part of these studies reflect the practice reality of professional doula care. A number of studies have either assigned doulas to women presenting at hospital in labour, without a prior relationship or alternatively given introductory training in labour support to female relatives or friends and required they provide doula-like care. No study has examined the outcomes of women receiving doula support in the home or community setting. This is not representative of the practice of professional doulas and may not be providing the most accurate evaluation of the value of doula support for birthing women.

Implications for education and practice

This review has identified a number of evidence gaps regarding the role of professional doulas in contemporary maternity care. These research insufficiencies may limit the ability for governing bodies and authorities to develop clear position statements regarding professional doulas; however, the trend of evidence does indicate that women may benefit from the care of a professional doula, and that interprofessional tensions between conventional maternity care providers and doulas may be overcome through adequate doula training. In addition, hospital policies which provide guidelines supporting inclusive approaches to intrapartum doula care in conjunction with minimum standards of doula education may place some responsibility for addressing interprofessional tensions on all members of the women's maternity care team. The characteristics and content needed in both doula training and hospital policies to adequately address this issue require further examination.

Strengths and limitations of this review

The research examining doula care is steadily growing, and although there are a number of studies related to trained doulas providing care to pregnant and birthing women, the heterogeneity in study methodology and design limits the ability to compare findings across studies. The under-reporting and diversity in definition, duration and quality of doula training present a challenge, as does the variety of outcomes included in clinical studies to determine the effects of professional doula care. These limitations are highlighted in this research area due to the dual focus of doula care on both physical and emotional benefits. Alongside these limitations, the ability to comprehensively appraise all work in this field is affected due to inconsistency in the purpose and objectives of the other non-clinical research. This has also led to a need to conflate research with differing study designs within categories to ascertain the current trends and outcomes of work within this topic. In addition, this review is limited by generic weaknesses associated with literatures reviews more broadly such as the potential for omission of relevant research through unintended gaps in the literature search process. Errors in the translation of data from the primary literature to the summary statements in the review are also possible. These limitations have been ameliorated through the systematic process used for this review.

The development of an evidence base for doula support services is vital if a clear understanding of the role, value and contribution of doulas to women's experience and outcomes of birth is to be objectively assessed. This review provides a current overview and key insights regarding professional or trained doulas and the care they provide for birthing women, their families and the health professionals and administrators who support them. It also provides direction for future research into doula care and thereby promotes a broader evidence base on the topic. Of primary importance is the need for future clinical research to include a mix of both qualitative and quantitative research methods to capture all dimensions of women's health which may be affected by trained or professional doula support during birth.

Conclusion

This review identifies a number of significant gaps in professional doula care research: doula workforce, education surveys and auditing; the perspectives of other key stakeholders including partners, families and maternity health professionals; and clinically relevant mixed-methodology research exploring the social, emotional and medical outcomes of receiving doula support during the antenatal, intrapartum and postnatal period. It is imperative that key aspects of professional doula practice be subject to further rigor-

ous, empirical investigation to help establish an evidence base to guide policy and practice relating to this area of support and care for pregnant and birthing women.

References

Minnesota House of Representatives (2013) *Doula services medical assistance (MA) coverage requirement*. Minnesota-2013-SF699. 88th Legislature ed.

Adams J., Lui C.-W., Sibbritt D., Broom A., Wardle J. & Homer C. (2011) Attitudes and referral practices of maternity care professionals with regard to complementary and alternative medicine: an integrative review. *Journal of Advanced Nursing* **67**, 472–483.

Adams J., Barbery G. & Lui C.-W. (2012) Complementary and alternative medicine use for headache and migraine: a critical review of the literature. *Headache: The Journal of Head and Face Pain* **53**, 459–473.

Akhavan S. & Edge D. (2012) Foreign-born women's experiences of community-based doulas in Sweden – a qualitative study. *Health Care for Women International* **33**, 833–848.

Akhavan S. & Lundgren I. (2011) Midwives' experiences of doula support for immigrant women in Sweden – a qualitative study. *Midwifery* **28**, 80–85.

APS Group Scotland (2011) *A Refreshed Framework for Maternity Care in Scotland*. Scottish Government, Edinburgh. Available at: http://www.scotland.gov.uk/Resource/Doc/337644/0110854.pdf (accessed on 18/2/2014).

Australian Doula College (2007) *What is a doula?* Available at: http://www.australiandoulacollege.com.au/what_is_a_doula_/ (accessed on 8/5/2014).

Australian Health Ministers' Advisory Council (2008) *Primary Maternity Services in Australia – A Framework for Implementation*. NSW Health, Sydney. Available at: http://www.ahmac.gov.au/cms_documents/Primary%20Maternity%20Services%20in%20Australia.pdf (accessed on 8/5/2014).

Barron S.P., Lane H.W., Hannan T.E., Struempler B. & Williams J.C. (1988) Factors influencing duration of breast feeding among low-income women. *Journal of the American Dietetic Association* **88**, 1557–1561.

Berg M. & Terstad A. (2006) Swedish women's experiences of doula support during childbirth. *Midwifery* **22**, 330–338.

Bertsch T.D., Nagashima-Whalen L., Dykeman S., Kennell J. & McGrath S. (1990) Labor support by first-time fathers: direct observations with comparison to experienced doulas. *Journal of Psychosomatic Obstetrics and Gynaecology* **11**, 251–260.

Blumenshine P., Egerter S., Barclay C.J., Cubbin C. & Braveman P.A. (2010) Socioeconomic disparities in adverse birth outcomes: a systematic review. *American Journal of Preventive Medicine* **39**, 263–272.

Bowers B.B. (2002) Mothers' experiences of labor support: exploration of qualitative research. *Journal of Obstetric, Gynecologic, and Neonatal Nursing* **31**, 742–752.

Breedlove G. (2005) Perceptions of social support from pregnant and parenting teens using community-based doulas. *Journal of Perinatal Education* **14**, 15–22.

Campbell D., Lake M.F., Falk M. & Backstrand J.R. (2006) A randomized control trial of continuous support in labor by a lay doula. *Journal of Obstetric, Gynecologic, and Neonatal Nursing* **35**, 456–464.

Campbell D., Scott K.D., Klaus M.H. & Falk M. (2007) Female relatives or friends trained as labor doulas: outcomes at 6 to 8 weeks postpartum. *Birth* **34**, 220–227.

Campbell-Voytal K., Fry Mccomish J., Visger J.M., Rowland C.A. & Kelleher J. (2011) Postpartum doulas: motivations and perceptions of practice. *Midwifery* **27**, e214–e221.

Campero L., García C., Díaz C., Ortiz O., Reynoso S. & Langer A. (1998) "Alone, I wouldn't have known what to do": a qualitative study on social support during labor and delivery in Mexico. *Social Science and Medicine* **47**, 395–403.

Chapple W., Gilliland A., Li D., Shier E. & Wright E. (2013) An economic model of the benefits of professional doula labor support in Wisconsin births. *Wisconsin Medical Journal* **112**, 58–64.

Childbirth International (2010) *Birth doula – compare training programs*. Available at: http://www.childbirthinternational.com/birth_doula/compare.htm (accessed on 18/2/2014).

Chow S.-C., Shao J. & Wang H. (2008) *Sample Size Calculations in Clinical Research*. Chapman & Hall, Boca Raton, FL.

Creswell J.W. & Plano Clark V.L. (2011) *Designing and Conducting Mixed Methods Research*. Sage, Thousand Oaks, CA.

Dahlen H., Jackson M. & Stevens J. (2011) Homebirth, freebirth, and doulas: casualty and consequence of a broken maternity care system. *Women and Birth* **24**, 47–50.

Deitrick L.M. & Draves P.R. (2008) Attitudes towards doula support during pregnancy by clients, doulas, and labor-and-delivery nurses: a case study from Tampa, Florida. *Human Organization* **67**, 397–406.

DONA International (2005) *DONA International*. Colorado. Available at: http://www.dona.org (accessed on 18/2/2014).

Doula UK Ltd (n.d.) *About doula UK*. Cheltenham, PA. Available at: http://doula.org.uk/ (accessed on 18/2/2014).

Dundek L.H. (2006) Establishment of a Somali doula program at a large metropolitan hospital. *Journal of Perinatal and Neonatal Nursing* **20**, 128–137.

Eftekhary S., Klein M.C. & Xu S.Y. (2010) The life of a Canadian doula: successes, confusion, and conflict. *Journal of Obstetrics and Gynaecology Canada* **32**, 642–649.

Evetts J. (1999) Professionalisation and professionalism: issues for interprofessional care. *Journal of Interprofessional Care* **13**, 119–128.

Genesoni L. & Tallandini M.A. (2009) Men's psychological transition to fatherhood: an analysis of the literature, 1989–2008. *Birth* **36**, 305–318.

Gentry Q.M., Nolte K.M., Gonzalez A., Pearson M. & Ivey S. (2010) "Going beyond the call of doula": a grounded theory analysis of the diverse roles community-based doulas play in the lives of pregnant and parenting adolescent mothers. *Journal of Perinatal Education* **19**, 24–40.

Gilliland A.L. (2010) After praise and encouragement: emotional support strategies used by birth doulas in the USA and Canada. *Midwifery* **27**, 525–531.

Goedkoop V. (2009) Side by side – a survey of doula care in the UK in 2008. *MIDIRS Midwifery Digest* **19**, 217–219.

Gordon N., Walton D., McAdam E., Derman J., Gallitero G. & Garrett L. (1999) Effects of providing hospital-based doulas in health maintenance organisation hospitals. *Obstetrics and Gynecology* **93**, 422–426.

Gruber K.J., Cupito S.H. & Dobson C.F. (2013) Impact of doulas on healthy birth outcomes. *Journal of Perinatal Education* **22**, 49–58.

Gupta J.K., Hofmeyr G.J. & Shehmar M. (2012) Position in the second stage of labour for women without epidural anaesthesia. *Cochrane Database of Systematic Reviews* **5**, CD002006.

Hans S. & Korfmacher J. (2002) The professional development of paraprofessionals. *Zero to Three* **23**, 4–8.

Harris S.J., Janssen P.A., Saxell L., Carty E.A., Macrae G.S. & Petersen K.L. (2012) Effect of a collaborative interdisciplinary maternity care program on perinatal outcomes. *Canadian Medical Association Journal* **184**, 1885–1892.

Hodnett E.D., Gates S., Hofmeyr G., Sakala C. & Weston J. (2012) Continuous support for women during childbirth. *Cochrane Database of Systematic Reviews*, **10**, CD003766.

Hunter C. (2012) Intimate space within institutionalized birth: women's experiences birthing with doulas. *Anthropology and Medicine* **19**, 315–326.

Kennell J., Klaus M., McGrath S., Robertson S. & Hinkley C. (1991) Continuous emotional support during labor in a US hospital. *Journal of the American Medical Association* **265**, 2197–2201.

Kingston D., Heaman M., Fell D., Dzakpasu S. & Chalmers B. (2012) Factors associated with perceived stress and stressful life events in pregnant women: findings from the Canadian Maternity Experiences Survey. *Maternal and Child Health Journal* **16**, 158–168.

Kinnear A. (2010) *Maternity – Towards Normal Birth in NSW*. Health, N., Sydney. Available at: http://www0.health.nsw.gov.au/policies/pd/2010/pdf/PD2010_045.pdf (accessed on 8/5/2014).

Klaus M., Kennell J., Robertson S. & Sosa R. (1986) Effects of social support during parturition on maternal and infant morbidity. *British Medical Journal* **293**, 585–587.

Klein M.C., Kacsorowski J., Hall W.A. *et al.* (2009) The attitudes of Canadian maternity care practitioners towards labour and birth: many differences but important similarities. *Journal of Obstetrics and Gynaecology Canada* **31**, 827–840.

Koumouitzes-Douvia J. & Carr C.A. (2006) Women's perceptions of their doula support. *Journal of Perinatal Education* **15**, 34–40.

Kozhimannil K.B., Hardeman R.R., Attanasio L.B., Blauer-Peterson C. & O'Brien M. (2013) Doula care, birth outcomes, and costs among Medicaid beneficiaries. *American Journal of Public Health* **103**, e113–e121.

Lagendyk L. & Thurston W. (2005) A case study of volunteers providing labour and childbirth support in hospitals in Canada. *Midwifery* **21**, 14–22.

Langer A., Campero L., Garcia C. & Reynoso S. (1998) Effects of psychosocial support during labour and childbirth on breastfeeding, medical interventions, and mothers' wellbeing in a Mexican public hospital: a randomised clinical trial. *BJOG: An International Journal of Obstetrics & Gynaecology* **105**, 1056–1063.

Lantz P.M., Low L.K., Varkey S. & Watson R.L. (2005) Doulas as childbirth paraprofessionals: results from a national survey. *Womens Health Issues* **15**, 109–116.

Leslie M. & Storton S. (2007) Step 1: offers all birthing mothers unrestricted access to birth companions, labor support, professional midwifery care: the coalition for improving maternity services. *Journal of Perinatal Education* **16**, 10S–19S.

Liva S.J., Hall W.A., Klein M.C. & Wong S.T. (2012) Factors associated with differences in Canadian perinatal nurses' attitudes toward birth practices. *Journal of Obstetric, Gynecologic, and Neonatal Nursing* **41**, 761–773.

Lundgren I. (2008) Swedish women's experiences of doula support during childbirth. *Midwifery* **26**, 173–180.

Manning-Orenstein G. (1998) A birth intervention: the therapeutic effects of doula support versus lamaze preparation on first-time mothers' working models of caregiving. *Alternative Therapies in Health and Medicine* **4**, 73–81.

Marshall H., Kennel M. & Klaus P.H. (2002) *The Doula Book*. Perseus Books Group, Cambridge, MA.

Maternity Care Working Party (2007) *Making normal birth a reality*. Available at: http://www.rcog.org.uk/files/rcog-corp/uploaded-files/JointStatmentNormalBirth2007.pdf (accessed 18/2/2014).

McComish J.F. & Visger J.M. (2009) Domains of postpartum doula care and maternal responsiveness and competence. *Journal of Obstetric, Gynecologic, and Neonatal Nursing* **38**, 148–156.

McGrath S. & Kennell J.H. (2008) A randomized controlled trial of continuous labor support for middle-class couples: effect on cesarean delivery rates. *Birth* **35**, 92–97.

McGrath S., Kennell J., Suresh M., Moise K. & Hinkley C. (1999) Doula support vs epidural analgesia: impact on cesarean rates. *Pediatric Research* **45**, 16a.

Morton C. & Basile M. (2013) Medicaid coverage for doula care: re-examining the arguments through a reproductive justice lens, part one. *Science and Sensibility*. Available at: http://www.scienceandsensibility.org/?p=6461 (accessed on 8/5/2014).

Mottl-Santiago J., Walker C., Ewan J., Vragovic O., Winder S. & Stubblefield P. (2008) A hospital-based doula program and childbirth outcomes in an urban, multicultural setting. *Maternal and Child Health Journal* **12**, 372–377.

Newton K.N., Chaudhuri J., Grossman X. & Merewood A. (2009) Factors associated with exclusive breastfeeding among Latina women giving birth at an inner-city baby-friendly hospital. *Journal of Human Lactation* **25**, 28–33.

Nommsen-Rivers L.A., Mastergeorge A.M., Hansen R.L., Cullum A.S. & Dewey K.G. (2009) Doula care, early breastfeeding outcomes, and breastfeeding status at 6 weeks postpartum among low-income primiparae. *Journal of Obstetric, Gynecologic, and Neonatal Nursing* **38**, 157–173.

Oakley A. (1984) *The Captured Womb: A History of Medical Care of Pregnant Women*. Basil Blackwell Publisher Ltd, Oxford.

Odent M. (2009) The masculinisation of the birth environment. *Journal of Prenatal and Perinatal Psychology and Health* **23**, 185.

Papagni K. & Buckner E. (2006) Doula support and attitudes of intrapartum nurses: a qualitative study from the patient's perspective. *Journal of Perinatal Education* **15**, 11–18.

Paterno M.T., van Zandt S.E., Murphy J. & Jordan E.T. (2012) Evaluation of a student-nurse doula program: an analysis of doula interventions and their impact on labor analgesia and cesarean birth. *Journal of Midwifery and Women's Health* **57**, 28–34.

Rosen P. (2004) Supporting women in labor: analysis of different types of caregivers. *Journal of Midwifery and Women's Health* **49**, 24–31.

Schroeder C. & Bell J. (2005) Doula birth support for incarcerated pregnant women. *Public Health Nursing* **22**, 53–58.

Scott K.D., Berkowitz G. & Klaus M. (1999a) A comparison of intermittent and continuous support during labor: a meta-analysis. *American Journal of Obstetrics and Gynecology* **180**, 1054–1059.

Scott K.D., Klaus P.H. & Klaus M.H. (1999b) The obstetrical and postpartum benefits of continuous support during childbirth. *Journal of Women's Health and Gender-Based Medicine* **8**, 1257–1264.

Simkin P. (2011) *The Labor Progress Handbook: Early Interventions to Prevent and Treat Dystocia*. Wiley-Blackwell, West Sussex.

Smid M., Campero L., Cragin L., Hernandez D.G. & Walker D. (2010) Bringing two worlds together: exploring the integration of traditional midwives as doulas in Mexican public hospitals. *Health Care for Women International* **31**, 475–498.

Society of Obstetricians and Gynaecologists of Canada (2008) Joint policy statement on normal childbirth. *Journal of Obstetrics and Gynaecology Canada* **30**, 1163–1165.

Sosa R., Kennell J., Klaus M., Robertson S. & Urrutia J. (1980) The effect of a supportive companion on perinatal problems, length of labor and mother-infant interaction. *New England Journal of Medicine* **303**, 597–600.

Steel A., Adams J., Sibbritt D., Broom A., Gallois C. & Frawley J. (2012) Utilisation of complementary and alternative medicine (CAM) practitioners within maternity care provision: results from a nationally representative cohort study of 1,835 pregnant women. *BMC Pregnancy Childbirth* **12**, 146.

Steel A., Diezel H., Johnstone K., Sibbritt D., Adams J. & Adair R. (2013) The value of care provided by student doulas: an examination of the perceptions of women in their care. *Journal of Perinatal Education* **22**, 39–48.

Stevens J., Dahlen H., Peters K. & Jackson D. (2011) Midwives' and doulas' perspectives of the role of the doula in Australia: a qualitative study. *Midwifery* **27**, 509–516.

Stockton A. (2011) The value of lay support in protecting normal birth: the doula's role. In: S. Donna (Ed.) *Promoting Normal Birth: Research, Reflections and Guidelines*, pp. 97–104. Fresh Heart Publishing, UK.

The Swiss Association of Doulas (2011) *Doula geburtsbeleitung*. Available at: http://www.doula.ch (accessed on 18/2/2014).

Thomson Reuters (2008) *EndNote X2*. Thomson Reuters, Carlsbad.

Torres J.M.C. (2013) Breast milk and labour support: lactation consultants' and doulas' strategies for navigating the medical context of maternity care. *Sociology of Health and Illness*, **35**, 924–938.

Trueba G., Contreras C., Velazco M.T., Lara E.G. & Martinez H.B. (2000) Alternative strategy to decrease cesarean section: support by doulas during labor. *Journal of Perinatal Education* **9**, 8–13.

van Zandt S.E., Edwards L. & Jordan E.T. (2005) Lower epidural anesthesia use associated with labor support by student nurse doulas: implications for intrapartal nursing practice. *Complementary Therapies in Clinical Practice* **11**, 153–160.