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Collaborative working in health and social care: Lessons learned from post-hoc preliminary findings of a young families' pregnancy to age 2 project in South Wales, United Kingdom

Sara W. Jones PhD, Research Assistant[1] | Susanne Darra PhD, Professor[1] | Mike Davies Manager[2] | Catherine Jones MSc student[1] | Wendy Sunderland-Evans Manager[2] | Mike R. M. Ward PhD, Senior Lecturer[1]

[1]Department of Public Health, Policy and Social Sciences, Swansea University, UK

[2]JIGSO Project, Swansea, UK

Correspondence
Sara W. Jones, Department of Public Health, Policy and Social Sciences, Swansea University, Singleton Park, Sketty, Swansea SA2 8PP, UK.
Email: s.w.jones@swansea.ac.uk

Funding information
Welsh School of Social Care Research

Abstract

Children of young and socially disadvantaged parents are more likely to experience adverse outcomes. In response to this, a unique young families' project in Swansea, UK, was created, which drew together a team of multi-agency professionals, to support people aged 16–24 from 17 weeks of pregnancy throughout 1,001 days of the child's life. The aim of the JIGSO (the Welsh word for Jigsaw) project is for young people to reach their potential as parents and to break the cycle of health and social inequality. This evaluation analysed routinely collected data held by the project from January 2017 to December 2018 exploring health and social outcomes, including smoking and alcohol use in pregnancy, breastfeeding, maternal diet and social services outcomes. Outcomes were compared to local and national averages, where available. Data relating to parenting knowledge and skills were available via records of 10-point Likert scales, one collected at the start of the JIGSO involvement and one around 4–6 months later. Findings showed higher than average levels of breastfeeding initiation and lower smoking and alcohol use in pregnancy. Parents also reported enhanced knowledge and confidence in their child care skills, as well as improved family relationships. Parents with high levels of engagement with JIGSO also appeared to have positive outcomes with Social Services (their child's name was removed from child protection register or their case was closed to social services). This was a post-hoc evaluation, not an intervention study or trial, and thus findings must be interpreted with caution. Despite this, the findings are promising and more prospective research exploring similar services is required.

KEYWORDS

breastfeeding, child health, collaborative working, distance travelled, health, midwifery, parenting, pregnancy, social care, social disadvantage, social work, young families, young parents

1 | INTRODUCTION

It is well recognised that families, especially young families, need a wide range of support (Robb, McInery, & Hollins Martin, 2013). In particular, teenage pregnancy is related to poor health and social outcomes for both parents and children (Hutchinson, 2007; Pilgrim et al., 2010; Public Health England & Local Government Association, 2015). For example, younger and socially disadvantaged women are more likely to continue smoking and drinking alcohol throughout pregnancy (ASH Scotland, 2012; Bottorff et al., 2014). Diet in pregnancy has also been found to be poorer in younger mothers and those from more socially deprived backgrounds, (Haggarty et al., 2009). Furthermore, younger mothers are at risk of complications during pregnancy, depression and social isolation (Smyth & Anderson, 2014). Associated risks for babies include a 20% higher risk of premature birth, 15% risk of a lower birth weight, 45% higher risk of infant death and a 30% higher chance of the baby being still born (Department for Children Schools and Families & Department of Health, 2009; Public Health England & Local Government Association, 2015).

A UK review for the National Institute for Health and Care Excellence (NICE) considered that the poor outcomes associated with teenage pregnancy may be due to the relative poverty and social disadvantage of teenage parents, rather than the age of the parent, however, the evidence is not clear on this (Pilgrim et al., 2010). What is known, however, that is teenage and young parents are more often from disadvantaged backgrounds and are also more likely to have had difficult childhoods themselves involving Adverse Childhood Experiences (ACEs; Bellis et al., 2015; Harden, Brunton, Fletcher, & Oakley, 2009). ACEs are stressful events that occur during childhood and may include abuse, domestic violence and substance misuse in the household. ACEs are now well established in the literature as being strongly associated with health inequalities; people with 4 or more ACEs are more likely to have poor physical and mental health outcomes as adults, undertake health-harming behaviours and be involved in crime (Bellis, Hughes, Leckenby, Perkins, & Lowey, 2014; Couper & Mackie, 2016). The cycle of poverty and inequality is likely to continue as there is a 63% higher risk of living in poverty for children born to young mothers (Public Health England & Local Government Association, 2015).

Crucially, recent research from the US and Canada has shown that parents who experienced ACEs as a child often struggle with parenting, or have ongoing social issues when they have children themselves, perpetuating the cycle of negative experiences and outcomes (Folger et al., 2018; Racine, Plamondon, Madigan, McDonald, & Tough, 2018). Despite this somewhat bleak and problematic portrayal of young parenthood, breaking the cycle of deprivation is also important to young parents, many of whom express desires and aspirations to be a 'good' parent and want the best for their children (Anwar & Stanistreet, 2015). However, professional engagement with young and socially disadvantaged parents is often difficult (Barnardos, 2011; Evangelou, Coxon, Sylva, Smith, & Chan, 2013; Pote et al., 2019) and parents report feeling stigmatised by society and having mixed experiences of support from health and social care service providers (Action for Children, 2017; Ward, Darra, Jones, & Jones, 2019). Therefore, support in pregnancy and early parenthood for people in this situation is critical to attempt to break this cycle. It is thought that pregnancy and the early years are a window of opportunity whereby close links between early disadvantage and poor future life chances can be broken (Marmot et al., 2010; Nolan et al., 2012).

Given these challenges, there are national early strategies in place in the UK, which aim to support young parents and improve long-term health and social outcomes, including '*Building a Brighter Future: Early Years and Childcare Plan*' and '*The First 1,001 days*' (All Party Parliamentary Group for Conception to Age 2 – The First, 1001 days, 2015; Welsh Government, 2011). These national strategies reflect wider global debates around child and adolescent health (WHO, 2018). However, critics have pointed out that many interventions developed to support young families imply that there is a 'parenting deficit' and discussion around the impact of poverty, and social marginalisation is often unclear and under reported (Brand, Morrison, & Down, 2014; Kelly-Irving & Delpierre, 2019; Macvarish, Lee, & Lowe, 2015; White, Edwards, Gillies, & Wastell, 2019). It is important therefore that services which aim to support young parents are dedicated specifically to their situation, incorporate wider social factors and are undertaken in a non-judgmental, inclusive manner.

In Wales, a key way in which health and social inequalities may be addressed is through collaborative strategies, which aim

What is known about this topic

- Children of young and disadvantaged parents are at higher risk of poor outcomes.
- Multi-agency working is considered to be desirable to improve engagement and healthy outcomes for young families.
- There is relatively little published evidence of successful multi-agency initiatives in this area, particularly in Wales, despite it being recognised as a high priority for UK and Welsh government.

What this paper adds

- This study describes an example of an unique service in Wales, offering collaborative working between health and social care, from 17 weeks of pregnancy to age 2 of a child's life.
- The findings point to improved outcomes for young families and it therefore offers policy makers an opportunity to potentially adopt elements of the JIGSO model in other locations.
- It highlights areas for future research, in particular the value of multi-agency collaboration from pregnancy right through the early years.

for professionals and service users to become equal partners. The *Well-being of Future Generations (Wales) Act 2015* (Welsh Government, 2015) argues that collaboration is key to improving the social, economic, environmental and cultural well-being of Wales.

Collaborative approaches in parenting are therefore considered to be desirable and best practice. However, there is little published evidence of the evaluation parenting early-intervention initiatives in the UK (many examples are from the US) (Lindsay & Cullen, 2011) and they differ widely in their eligibility criteria and outcomes measured (Asmussen, Waddell, Molloy, & Chowdry, 2017).

JIGSO SWANSEA is a collaborative healthcare and social care strategy approach in Swansea; a small, post-industrial coastal city in South Wales, UK. Funded through the Welsh Government's *Flying Start* Programme, and *Families First*, JIGSO SWANSEA was set up in May 2016 and consists of a team of midwives, family facilitators, nursery nurses and early language development workers, led by two managers. There are other services in the area, which work along similar lines as the English *Family Partnership Model* (Davis, Day, & Bidmead, 2002), however, JIGSO is the first and only service in South Wales that is offered from 17 weeks of pregnancy and includes a group of dedicated midwives in the team. Midwives are involved from early pregnancy right up to 28 days post-natal; they work alongside other JIGSO team members who then continue to work with families throughout the child(ren)'s infancy. The team offers women's antenatal groups, peer-support mother and baby groups, parenting classes and a 6-week healthy relationships course. These are held in various settings across Swansea, which are open for regular attendees and for families to 'drop in', and there are also home visits. Some of the content of the group sessions is pre-planned, but the whole program is largely very responsive in nature, responding to the felt needs and request from the parents along with perceived need by the JIGSO staff members.

The name JIGSO is Welsh for 'jigsaw' and implies the collaboration between the different specialist staff and parents. The team works across Swansea to support the well-being of young parents [aged 16–24] during their pregnancy and throughout the child's early years. Families are offered the JIGSO service in early pregnancy by their regular midwife based on eligibility criteria (age, and if there are any 'additional needs', decided on the discretion of the referring midwife and JIGSO). 'Additional needs' include but are not limited to: involvement with social services, partner or parent in prison, homelessness or substance misuse. However, the service is optional and the young people have the ultimate decision of whether to take part or not. It is a holistic service encompassing support on all elements of maternity, health and social care. JIGSO staff take the lead from the family on whatever they need help with, this ranges from expert maternity care by JIGSO midwives (in addition to their regular midwife), to housing support, early years' development and relationship counselling. One aspect that is central to the JIGSO model is the co-location of services in the same office, which has been identified as being important to allow timely information sharing and the fostering of better inter-agency working relationships (Home Office, 2014).

The JIGSO program has drawn on research into what works in early years programs. For example, a key feature is intensive face-to-face support which is deemed important in order to build positive and trusting relationships (Asmussen et al., 2017). Safe, informal and group-based sessions tailored for young parents understanding and needs are also a central element of the program, and these groups are made easy to get to for parents by being in local community, or where necessary JIGSO was able to provide access to transport. This was considered to be vital, since specific support and accessibility is critical to effective engagement (Action for Children, 2017; Pote et al., 2019). Underlying principles for the JIGSO team include being committed and compassionate, with the aim of maintaining supportive relationships with service users, and to minimise attrition. Characteristics and approaches of effective early years workers are being respectful, non-judgmental and patient, as well as being able to sensitively deal with high emotions and conflict (Mills et al., 2012; Pote et al., 2019). JIGSO SWANSEA staff aim to be supportive, rather than interventionist; this is particularly important since it is clear to the team and the young people that the service is entirely optional.

2 | AIM

Children of young and socially disadvantaged parents are more likely to experience adverse social and health outcomes. In response to this the JIGSO young families' project in Swansea, UK, was created in order to offer a unique service from 17 weeks of pregnancy and up to the child's second birthday, in order to support young parents aged 16–24 to reach their potential as parents and to help break the cycle of health and social inequality. This evaluation analysed routinely collected data from the project to explore a range of health and social outcomes, including breastfeeding, smoking and alcohol use in pregnancy, diet, social services involvement and families' improvement in parenting knowledge and skills.

3 | METHODS

This study presents an evaluation of routinely collected JIGSO data, which was part of a yearlong mixed methods exploration of the JIGSO pregnancy to age 2 project in collaboration with Swansea University, UK (Ward et al., 2019). The aim of this arm of the study was to evaluate the impact of the project using all the numerical data collected by the project.

3.1 | Sample

During 2017, 240 families were referred to JIGSO (although the staff were also already working with a further 160 families that they were providing services before the project was launched in the current

JIGSO format). During 2018, a further 212 families were referred to JIGSO while the team continued to work with 168 families already 'on their books'. Data comprised of all the anonymised evaluations routinely collected by JIGSO staff between January 2017 and December 2018, as part of their on-going monitoring of the project. Routinely collected (anonymous) statistics relating to health behaviours and involvement of social services for the same time period were also provided for analysis. All the data were analysed retrospectively.

3.2 | Ethics

Permission from the managers of the service was obtained and all the data were provided in fully anonymised form. Ethical approval was granted from Swansea University, College of Human and Health Science Research Ethics Committee. Ethical considerations were made in line with the principles outlined in the Declaration of Helsinki (World Medical Association, 2018).

3.3 | Measures

JIGSO SWANSEA staff completed forms at the end of involvement with each family comprising the following key information:

- Smoking in pregnancy (asking 'Prior to pregnancy, did you smoke?' and 'Did you stop smoking during pregnancy?').
- Alcohol consumption in pregnancy (asking 'Prior to pregnancy, did you drink alcohol?' and 'Did you stop drinking alcohol during pregnancy?').
- Diet (asking 'Has your diet changed since you became pregnant?' and 'If so, please specify how.').
- Breastfeeding (asking whether mothers were breastfeeding at birth, at 10 days and at 28 days).
- Enquiring about Adverse Childhood Experiences (ACEs) (utilising the Public Health Wales tool, 2015).
- Noting how many families had social services also working with them and recording the outcomes of these cases.

In addition, so-called, 'soft outcomes' were measured. Soft outcomes may represent gains in knowledge, changes in attitudes or improvements in interpersonal skills (Welsh European Funding Office, 2003). 'Distance travelled' is an established way of measuring soft outcomes, useful both for research and in practical terms so that clients and practitioners can track progress (Dewson, Eccles, Tackey, & Jackson, 2000; Welsh European Funding Office, 2003). Parents were asked by JIGSO staff to self-complete distance travelled 'wheels'; a Likert-scale with 10 intervals representing a scale of feelings or agreement with a statement. A baseline score was completed at the start of involvement with JIGSO and then repeated approximately 4–6 months later. Distance travelled 'wheels' were completed by all JIGSO staff groups, with different questions related to each group (e.g. nursery nurses' wheel questions focused on practical baby care issues and family facilitators' questions focused on parenting and family–child relationships).

3.4 | Data analysis

Data were analysed using IBM Statistical Package for Social Sciences (SPSS 25 Version 4). Descriptive statistics provide a summary of the measureable health and social outcomes (such as smoking and breastfeeding), and where available these have been compared to the local health board and Welsh national averages. Associations between JIGSO involvement (number of visits/group attendances) and dichotomous categorical (yes/no) outcomes did not meet parametric assumptions, and were therefore analysed using Mann–Whitney U tests.

The distance travelled 'wheels' data met parametric assumptions, therefore, repeated measures within-subjects' ANOVAs were used to explore the degree of change from the first wheel measurement at the start of families' JIGSO involvement and the second wheel measurement at the end of JIGSO involvement. Statistical significance was set at the conventional alpha level of 0.05. Only complete data sets were included in the analyses.

4 | FINDINGS

From January 2017 to December 2018 there were 192 completed midwifery health evaluations, which contained data on health outcomes. A total of 151 families were also working with the parenting arm of the JIGSO team (called 'family facilitators') and were also involved with local authority social services, and evaluations were collected on the outcomes of these cases.

Distance travelled 'wheels' collected by midwives totalled 160 (Jan–Dec 2017) and 44 (Jan–Dec 2018) (these were reported separately as the questions differed from 2017 to 2018). Nursery nurses collected 109 'wheels' (Jan 2017 to Dec 2018), the early language development team collected 47 'wheels' (Jan 2017 to Dec 2018) and family facilitators collected 67 'wheels' (Jan 2017 to Dec 2018).

All the service users in the JIGSO project lived in Swansea, and particularly in areas ranked in the Welsh Index of Multiple of Deprivation as the most deprived 10 per cent in Wales (StatsWales, 2014). Information on the ethnic background of participants was unfortunately not collected. The mean age of mothers was 19.9 years (*SD*: 2.56; range: 14–26). Data on fathers' ages were not collected.

The number of ACEs experienced by parents in the JIGSO population appeared to be far greater than the Wales average (see Figure 1). In the JIGSO population, 64% of parents had 4 or more ACES, compared with only 14% of the Welsh population. Conversely only 5% of the JIGSO parents had no adverse experiences in their childhood, compared with 53% of the Welsh population (Public Health Wales, 2015).

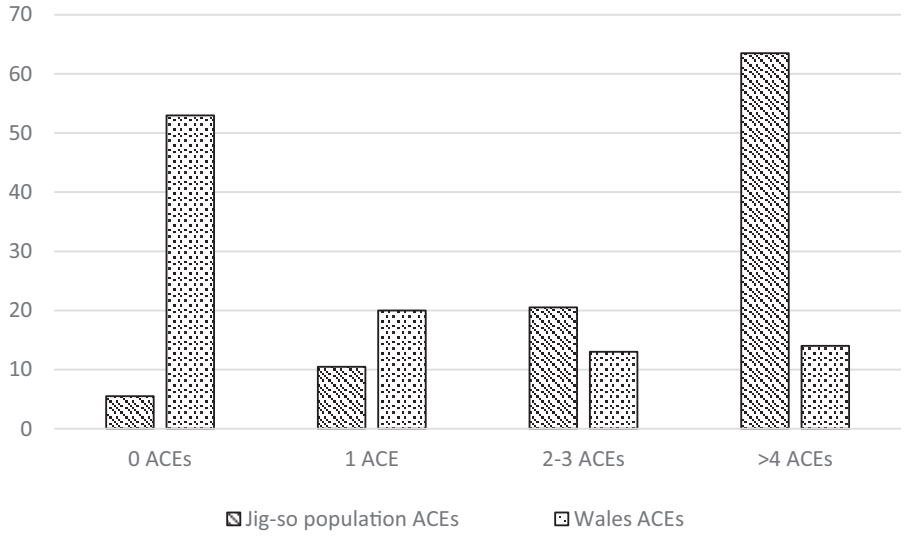

FIGURE 1 Proportion of parents (% of the population) exposed to adverse childhood experiences (ACEs): comparison between Wales and JIG-SO population

TABLE 1 Descriptive statistics: Breastfeeding. 2017/2018

	JIGSO SWANSEA	Health Board	Wales
	2017		
At Birth	69.3%	64.6%	56.7%
At 10 days	48.5%	28.9%	42.6%
At discharge from JIGSO SWANSEA (around 28 days) or at 6 weeks (Health Board/Wales)	39.6%	33.0%	34.2%
	2018		
At Birth	58.2%	54.2% (Jan – Sept)	57.8% (Jan – Sept)
At 10 days	26.4%	34.1% (Jan – Sept)	44.5% (Jan – Sept)
At discharge from JIGSO SWANSEA (around 28 days) or at 6 weeks (Health Board/Wales)	22.0%	33.0% (Jan – Sept)	34.16% (Jan – Sept)

4.1 | Engagement with families

Engagement with JIGSO by families was generally very high, with 87% of service users who opted-in engaging well with the service and 68.2% completing the JIGSO program. Many JIGSO service users were also registered with other services working in low-income communities in Swansea; for example, 42.2% were also registered with *Families First*, and 55.7% were in *Flying Start* areas. However, this indicates that, if not for JIGSO, a significant proportion of these families may not have been involved with any services additional to the standard health board midwifery and health visiting services.

4.1.1 | Midwifery

Data were collected on the midwifery visits. Across 2017 and 2018, dedicated JIGSO SWANSEA midwives visited women during pregnancy a median average of 6 times. These visits were in addition to the normal appointment schedule (which in the JIGSO locality adheres to NICE guidelines [NICE, 2019]). The number of extra antenatal visits, from a JIGSO midwife received by each family varied widely, ranging between 1 and 31 visits. The median number of postnatal visits was 3 (range 1–12). The primary method of involvement with a JIGSO midwife was via home visit, with 59.9% of clients only seeing their JIGSO midwife at home one-to-one. However, 39.6% also attended JIGSO midwife-led groups.

4.1.2 | Parenting

In 2017, family facilitators were involved with 138 families, and in 2018, 135 families. Across 2017/18, of these 273 families, 151 were also involved with social services. For these families, family facilitators undertook a median average of 6 one-to-one visits. One family received 47 visits; however, 27 families had no one-to-one visits, due to their poorer engagement with the service. 41.7% of the 151 families also attended JIGSO parenting groups. Of those who attended the groups, the median number of group visits was 6.

4.2 | Health

4.2.1 | Maternal healthy behaviours in pregnancy

In 2017/18, 52.6% of JIGSO clients smoked prior to becoming pregnant. Of these, 25.5% stopped smoking during pregnancy. This is a far greater rate of smoking cessation than the local health board average, which gave figures of only 6% of women registered with the local health board in 2017–18 stopping smoking during pregnancy. Only 2 of the 192 JIGSO clients in 2017/18 reported continuing to drink alcohol during their pregnancy. Furthermore, 70.8% of the JIGSO clients in 2017/18 reported that they had improved their diet since becoming pregnant, reporting eating more fruit and vegetables and reducing intake of 'junk food' and sugar.

4.2.2 | Breastfeeding

In 2017, breastfeeding data were available for 101 women involved with JIGSO SWANSEA. In 2018, data were available for 91 women. Table 1 shows the percentage of women breastfeeding, compared with the local health board and Welsh data (StatsWales, 2019). As seen in Table 1 a high proportion of women in the JIGSO population were breastfeeding at birth, and in 2017, this figure was higher than that of the local health board. However, it was a little lower in 2018, at 58.2%.

The 'wheels' indicated an increase in knowledge about benefits of breastfeeding during involvement with JIGSO. When asked 'How much do you know about the benefits of breastfeeding?' JIGSO clients showed an increase in self-reported scores from a mean at the start of their involvement with the JIGSO midwives of 6.79/10 (*SD*: 2.57), to a final mean score of 9.45/10 (*SD*: 1.09). A repeated measures within-subjects ANOVA found this difference to be statistically significant [F (1, 203) = 207.9, $p < .000$].

While all women who engaged with the project were either offered or received (in some cases extensive) support for breastfeeding, the degree of support did not seem to affect hard outcomes. The number of antenatal visits by a JIGSO Midwife was not significantly associated with whether the woman breastfed at birth [U = 3,696, $p = .10$]. Nor did the number of post-natal visits by a JIGSO Midwife have any statistical association with breastfeeding at 10 days [U = 2073, $p = .25$] or at discharge [U = 1723, $p = .06$]. However, 82% of women reported that their JIGSO Midwife had influenced their decision to breastfeed.

4.3 | Parenting

4.3.1 | Confidence as parent, practical skills and safety

Parents who were asked ($N = 70$) reported increases in self-reported confidence from a mean at the start of their involvement with the JIGSO family facilitators. The mean confidence scores increased from a baseline of 6.79 (*SD*: 2.1) to 8.72 (*SD*: 1.44). Nursery nurses worked closely with JIGSO parents to increase skills in practical baby care and awareness of safety issues. Table 2 shows the outcomes of the distance travelled 'wheels'. Significant improvements were reported in every area. Self-reported increases in knowledge on safer sleeping and sterilisation were especially large; both questions showed an improvement of around 38 percentage points, indicating the low baseline level of knowledge in these areas, which are critical to infant safety, and seeming to indicate the success of JIGSO involvement. In addition to the wheel questions, as part of the midwifery evaluation forms, women also unanimously reported to midwives that they understood information on reducing the risk of Sudden Infant Death Syndrome (SIDS), safe handling of the newborn and reduction in accidents.

4.3.2 | Relationships

JIGSO workers also encouraged activities thought to facilitate bonding and responsiveness to the baby, such as singing and talking and reading, during pregnancy, through infancy and into early childhood. JIGSO clients demonstrated statistically significant increases in self-reported wheel scores to questions/statements relating to relationships and bonding with the children and attention to their child's developmental needs (Table 3). JIGSO clients also reported statistically significant improvements in family relationships [F (1, 66) =23.7, $p < .000$] and reported feeling more supported [F (1, 66) =31.4, $p < .000$] during involvement with JIGSO.

TABLE 2 Distance travelled: Child caring skills

Question/statement	*N*	Mean score at start (*SD*)	Mean score at Review (*SD*)	Repeated measures ANOVA for the within-subjects difference
How confident do you feel about handling and the early days with your new-born?	107	7.01 (2.11)	9.43 (1.13)	F (1, 106) 188.8, $p < .000$
How confident are you in feeding your baby and knowing how many feeds needed in a day?	107	6.21 (2.31)	9.68 (0.58)	F (1, 106) 286.4, $p < .000$
Do you know about advice on safer sleeping?	107	5.92 (2.35)	9.76 (0.49)	F (1, 106) 297.6 $p < .000$
How confident are you about sterilization of equipment for your baby?	107	5.93 (2.70)	9.63 (0.86)	F (1, 106) 297.6 $p < .000$

TABLE 3 Distance travelled: Relationship with child and attention to developmental needs

Question/statement	*N*	Mean score at start (*SD*)	Mean score at Review (*SD*)	Repeated measures ANOVA for the within-subjects difference
Do you know how to communicate with your baby in the womb?	204	5.44 (2.57)	9.50 (0.80)	F (1, 203) 543.5, $p < .000$
I have a good relationship with my child	47	7.79 (2.23)	8.62 (2.05)	F (1, 46) 7.57, $p = .008$
I read and share books/stories with my child	47	6.70 (2.35)	8.60 (1.69)	F (1, 46) 25.1, $p < .000$
I spend time playing with my child	47	6.96 (2.39)	8.38 (2.28)	F (1, 46) 12.5, $p = .001$

4.4 | Social services involvement

Across 2017/18 JIGSO, family facilitators worked with 151 families who were also involved with local authority social services as shown in Table 4. The majority of families working with JIGSO were subsequently discharged from social services with a positive outcome (the child remained with the family). In the families open to both social services and JIGSO, 132 families engaged well with JIGSO, and of these 15 children (11%) were removed from their parents' care, leaving 87% of those who engaged with the service having either a positive outcome, or work ongoing. In contrast, 19 families did not engage with JIGSO and 15 (79%) of these families had the child removed from their care.

The number of one-to-one visits by family facilitators was significantly associated with positive outcomes; families whose child's name was removed from the child protection register had received more one-to-one visits from JIGSO family facilitators (Median = 11) than those whose child's name remained on the register (Median = 5) [U = 722.5, $p = .001$]. Statistically significant results were also found for group attendances; families who had their child's name removed from the child protection register had attended JIGSO groups more often (Median = 34) than those whose child's name remained on the register (Mdn = 14) [U = 149, $p = .04$].

TABLE 4 Families involved with JIGSO SWANSEA, social services and outcomes, 2017/2018

	N		*N*	%
Engaged with JIGSO SWANSEA	132	Closed with a positive outcome	78	59
		Ongoing work	31	23.5
		Children removed from parent's care	15	11.4
		Children undergoing Public Law Outline (PLO) proceedings/ foster placement with ongoing work	3	2.3
		Closed to JIGSO SWANSEA but still open to Social services	3	2.3
		Moved out of county	2	1.5
Did not engage with JIGSO SWANSEA	19	Ongoing work with Social Services	4	21
		Child removed from parents' care	15	79

5 | DISCUSSION

This study represents a brief evaluation of data obtained during a unique young families pregnancy to age 2 project, which demonstrates promising outcomes in a number of areas. In particular, smoking cessation appeared to be greater than the health board average, and alcohol use during pregnancy was reported to be very low, despite younger and socially disadvantaged women being much more likely to continue smoking and drinking alcohol throughout pregnancy (ASH Scotland, 2012; Bottorff et al., 2014).

The health outcomes data in which the young people reported significant improvements in diet and reduction in drinking alcohol needs to be treated with caution, since it is possible that respondents did not answer truthfully, due to social desirability bias which can be especially prevalent in relation to sensitive or taboo subjects such as smoking and drinking in pregnancy (Krumpal, 2013). These behaviours are likely to be underreported in general, however, not just in this study (ASH Scotland, 2012; Institute of Alcohol Studies, 2017). The same could be said for dietary improvements, as self-reporting of fruit and vegetable intake has been found to be inaccurate (Miller, Abdel-Maksoud, Crane, Marcus, & Byers, 2008).

In the JIGSO project some very high rates of breastfeeding initiation and duration were seen. Improving breastfeeding rates is a priority for the UK due to the proven extensive and long-term health benefits it conveys (UNICEF UK, 2019). As well as exceeding local and national averages, JIGSO breastfeeding rates were seen to be much higher than would be expected in a population of low-income younger mothers (McAndrew et al., 2012; Oakley, Renfrew, Kurinczuk, & Quigley, 2013). While the reasons for low breastfeeding rates in low-income younger mothers are multifactorial, studies have shown that teenage mothers have poorer knowledge about breastfeeding when compared with mothers over 20 years old (Dewan, Wood, Maxwell, Cooper, & Brabin, 2002). Improving knowledge about breastfeeding was therefore a key aim for the JIGSO project. The 'wheels' data confirmed that mothers felt more knowledgeable about the benefits of breastfeeding, and the majority of mothers reported that the JIGSO midwife had influenced their decision to breastfeed. The literature suggests that mothers often report inadequate professional support for breastfeeding, and advice was considered especially frustrating if is not backed

up by practical help (MacGregor & Hughes, 2010; Shortt, McGorrian, & Kelleher, 2013). It was therefore recognised in the JIGSO project that women needed intensive practical support in the early weeks after birth, reflected by the relatively high number of post-natal home visits undertaken. Despite this, however, the data did not reveal a relationship between the *number* of midwife visits and breastfeeding continuation. This phenomenon requires further investigation.

As well as contributing to improving measurable statistics such as breastfeeding rates, JIGSO groups provided social support for young parents who may already feel stigmatised by their peers. The transition to parenthood can be a time of substantial fear and uncertainty, especially for young parents who may have had difficult childhoods themselves. Parents who were exposed to Adverse Childhood Experiences (ACEs) in their own childhood (as very many of those in the JIGSO population were) may be predisposed to stress, anxiety and depressive symptoms in parenthood and problematic intimate relationships (Hughes et al., 2017; Young-Wolff et al., 2019). Support groups for expectant and new parents are known to be important for reducing social isolation (Craswell, Kearney, & Reed, 2016; Nolan et al., 2012).

It is important to note that there is no intention to apportion blame or to paint a picture of the young parents in this project as hapless and needing guidance from 'experts'. Featherstone, Morris, and White (2013) point out that concepts of 'early intervention' and 'child protection' create a somewhat dangerous combination. In a risk-averse culture, rather than truly supporting families, professionals may see their role as one of 'intervention'. This creates an unequal discourse whereby parents are at fault and professionals are 'rescuers'. In contrast, the JIGSO project appears to be a holistic and co-operative service, working *with* young parents. The high level of engagement with JIGSO, despite its being optional appears to indicate the project staff's ability to develop and sustain supportive relationships with the families.

According to the self-reported 'wheels', parents stated that they felt more confident and supported generally since involvement with the JIGSO project. Belenky et al.'s early work (1986) on women's acquisition of knowledge suggests that within groups of women who have common shared experiences (i.e. other people from the same or a similar community) there is a sense of mutuality and reciprocity and these relationships can be very powerful in creating or affirming knowledge (Belenky, Clinchy, Goldberger, & Tarule, 1986). This was reflected in work from Action for Children (2017), where young mothers reported that they felt isolated from normal mother and baby groups and would prefer to attend one specifically for young people.

The young parents also reported statistically significant improvements in knowledge on practical baby-caring skills, such as safe sleeping and bathing. Bonding is also a significant challenge for young parents who may have experienced poor childhoods themselves (Hughes et al., 2017). However, the data demonstrated that singing and talking and reading to the foetus during pregnancy and to the child throughout infancy and into early childhood was shown to improve relationships and parental bonding with the children, reflecting earlier research (Baker & McGrath, 2011; Persico et al., 2017).

Another way in which improvements in parenting may be measured is through the extent of their involvement with local authority social services. Families with children on the child protection register are subject to statutory rigorous assessments, support work, home visits and multidisciplinary meetings in order to optimise child safety within the home and to assess improvements in parenting competence. Where sustained and evidenced improvements to child well-being are made, the multidisciplinary team may decide that the child's name can be removed from the register and this in turn means less involvement, but also less support from social workers. Family facilitators within the JIGSO project worked closely with parents who were also involved with social services, and had a high rate of positive outcomes compared with those who did not engage with the JIGSO project. Furthermore, statistically significant relationships were found between the degree of JIGSO involvement (whether one-to-one or group) and removal of the child's name from the child protection register. This is potentially a highly significant finding, which clearly warrants further investigation in other, similar services.

5.1 | Limitations

Limitations of this evaluation were that all the data were collected by staff employed by the JIGSO project, and not by an independent researcher, which may have influenced parents to answer favourably, particularly in relation to distance-travelled 'wheels' and enquiries about smoking, drinking alcohol and diet (Krumpal, 2013; Miller et al., 2008).

Findings also cannot be attributed to being as a direct result of the JIGSO project, as this is a simple post-hoc evaluation and not an intervention study or trial (Curran-Everett & Milgrom, 2013). For example, the findings which indicate improved social services outcomes for families involved with JIGSO cannot be interpreted as definitive evidence of the effectiveness of the project because those whose situations improved may have been more likely and motivated to change by virtue of the fact that they engaged well with any services (JIGSO and/or their Social Worker). Other variables were not accounted for in the data that were collected, for example, whether these families had more support from other sources (such as family or friends), and the nature and severity of the issues predominant within the families.

Finally data were not available for any families who had not completed particular distance travelled wheels, and it is possible that those whose data were not collected had rather different outcomes.

5.2 | Conclusion

This evaluation has outlined some promising results from analysing post-hoc data from a collaborative, multi-agency collaborative

project working with young pregnant women, young mothers and their partners in South Wales. The work of such young families' projects is of vital importance due to the cyclical nature of deprivation and health and social outcomes and this evaluation points to some potentially important findings. These include uptake of and retention in the service, some improved breastfeeding rates, potential improvements in health behaviours and parenting and implied reductions in the need for social services intervention. It may be that the involvement of health workers (midwives) and local authority workers in a service that begins during the second trimester of pregnancy is key to its apparent success (taking account of the limitations noted). However, future researchers may wish to collect data in rigorous prospective intervention studies to compare outcomes of similar collaborative multi-agency working projects. Policy makers may also be interested in replicating some aspects of JIGSO's approach in the field of family support.

CONFLICT OF INTERESTS

No conflicts of interest declared. Funding for the study came from the Welsh School of Social Care Research.

AUTHOR CONTRIBUTIONS

Sara W. Jones is a registered nurse and health visitor and Ph.D. a research assistant post at Swansea University and was responsible for data analysis, draft writing and critical revisions. Catherine Jones was an MSc student during the study period and was responsible for draft writing. Dr. Michael R.M. Ward, Ph.D., was responsible for draft writing and critical revisions. Professor. Susanne Darra, Ph.D., was responsible for draft writing support and critical revisions. Mike Davis & Wendy Sunderland-Evans (registered midwife) are managers at the JIG-SO project and were responsible for data collection.

ORCID

Sara W. Jones https://orcid.org/0000-0003-2182-6314

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