

This is the peer reviewed version of the following article: Cadée F, Nieuwenhuijze MJ, Lagro-Janssen T, de Vries R. Paving the way for successful twinning: Using grounded theory to understand the contribution of twin pairs in twinning collaborations. *Women and Birth* 2020 pii: S1871-5192(19)31033-9, which has been published in final form at <http://dx.doi.org/10.1016/j.wombi.2020.01.013>.

Paving the way for successful twinning: Using grounded theory to understand the contribution of twin pairs in twinning collaborations

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Abstract

Background: Twinning collaborations, where two groups — from educational institutions, hospitals or towns — work together cross-culturally on joint goals, are increasingly common worldwide. Pairing up individuals, so-called twin pairs, is thought to contribute to successful collaboration in twinning projects, but as yet, there is no empirical evidence or theory that offers insight into the value of the pair relationship for twinning.

Aim: To explore the contribution of one-to-one relationships between twins to twinning projects, as exemplified in projects between Dutch and Moroccan, and Dutch and Sierra Leone midwives.

Methods: We conducted thirteen in-depth interviews with midwives from two twinning collaborations. Interviews were transcribed and analysed using an iterative, grounded theory process, yielding a theoretical understanding of one-to-one twinning relationships for twinning collaborations.

Findings: Participant comments fell into four substantive categories: 1) Being named a twin, 2) moving beyond culture to the personal level, 3) searching for common ground to engage, 4) going above and beyond the twinning collaboration. Their interplay demonstrates the value of twin pairs in paving the way for successful twinning. Discussion: A complex combination of contextual inequities, personality, and cultural differences affect the twin relationship. Trusting relationships promote effective collaboration, however, as 'trust' cannot be mandated, it must be built by coaching twins in personal flexibility and (cultural) communication.

Conclusion: By offering original insights into the ways twinning relationships are built, our research explores how twin pairs can enhance the success of twinning projects.

Keywords: twinning, midwives, trust, collaboration, culture, qualitative research

Statement of significance

Twinning collaborations in different cross-cultural contexts are becoming more common and researchers are beginning to examine both the nature and the effects of these projects. An important feature of some twinning collaborations – the use of personal, one-to-one twin pair relationships – appears to have a positive impact on collaborative efforts, but this aspect of twinning has yet to be studied.

What is already known

Earlier research has generated a clear definition of twinning and has identified critical success factors for twinning. There is a growing number of descriptive studies of international twinning collaborations, including in midwifery.

What this article adds

Our analysis of the contribution of the personal, one-to-one twin relationships for twinning offers innovative and feasible suggestions for improving the success of twinning collaborations.

1. Introduction

There is substantial evidence showing that when midwives work in an enabling environment, they are better able to support childbearing women and their babies realize their human right to quality sexual and reproductive healthcare [1–9]. Strong professional associations of midwives are an essential part of this enabling environment because they promote the development and implementation of quality midwifery care for women and their families, and stimulate midwives to speak up for midwifery with one voice [1,3].

Twinning has been identified as a means to strengthen midwife associations and to promote the professional growth of midwives [10]. Research shows the positive impact of twinning and underscores the importance of creating an evidence base for this type of collaboration [11–16].

A growing number of educational institutions, hospitals, professional organisations, and towns are using twinning to strengthen each other through cross-cultural learning and the exchange of experience and practise [12,14,17–21]. The growing popularity of twinning has also captured the imagination of midwives, resulting in a rise in the number of twinning collaborations between associations of midwives globally. A membership survey by the International Confederation of Midwives (ICM) in 2019 found an increase in the number of midwife associations that want support from ICM to set up new twinning collaborations [22].

Twinning collaborations can vary in the way they are organised, but the essence of this form of collaboration is captured in this recently published operational definition: a '*cross-cultural, reciprocal process where two groups of people work together to achieve joint goals*' [23]. Most twinning collaborations are between *groups* from twinned institutions who work together on joint goals. Research on these collaborations has focussed on the overall outcomes of this group process [17,24–26]. Group twinning can struggle with issues of ownership due to power inequities and cultural and income differences. This may create subjectively constructed and normative group knowledge, which gets in the way of reciprocal learning and growth, important elements of successful twinning [21].

In an effort to avoid this type of problem, a small, but growing, number of twinning collaborations have added individual twin pairing to the collaboration, as a way to encourage bilateral trust and personal commitment to twinning [19,27–29]. This intervention originated spontaneously as an answer to issues of problem ownership during the Dutch-Sierra Leone twinning collaboration [27].

In our recent qualitative study exploring the group processes in twinning, twins reflected on the important role of twin pairs in bringing an extra personal dimension to the understanding each other [15]. Our Delphi study consulting 33 midwife experts in twinning identified 25 critical success factors (CSF) for twinning, ten of which pertain directly to the importance of one-on-one interaction and relationship. Included among these ten are such things as being prepared to receive and give feedback, to trust and respect each other, and take into account each other's cultural norms [16]. A focus on personal interaction and conscious reflection is believed to stimulate dialogue between participants, resulting in positive engagement and the creation of trust, which, in turn, facilitates reciprocal learning [29]. To date, however, there have been no empirical studies of the effects of the one-to-one pairing in twinning collaborations. In this study, we explore the value of one-to-one twin pairs in the context of two twinning collaborations between the midwife associations of 1) Sierra Leone and The Netherlands and 2) Morocco and The Netherlands. To improve practise through a better understanding of the role of twin pairs can contribute to the success of future twinning collaborations, amplifying the benefits of twinning, not only for midwifery associations, but for other international twinning projects as well.

2. Methods

To gain an in-depth understanding of the value of twin pairs, we used semi-structured interviews supplemented by notes from discussions with members of the team that managed the twinning collaborations. Because there is no theory that explains the contribution of twin pairs to twinning collaborations, we used an inductive, grounded theory approach (Glaser and Strauss) in our analysis.

2.1. Settings and participants

Seven twin pairs ($N = 14$), were asked if they were willing to participate in individual in-depth interviews, conducted by the first and second authors. Four pairs ($N = 8$) were selected from the twinning collaboration between the midwife associations of Sierra Leone and The Netherlands (2013–2016), a project that involved 50 midwives, or 25 pairs. Three pairs ($N = 6$) were selected from the twinning collaboration between the midwife associations Morocco and The Netherlands (2014–2017), a collaboration involving 36 midwives, or 18 pairs. The in-depth interviews in The Netherlands were done in April 2017 and June 2018, in Morocco in April 2017, and in Sierra Leone in February 2018. To obtain the broadest possible spectrum of insights, we used purposeful sampling, selecting twin pairs based on differences in the observed intensity of commitment to their twin relationships, as perceived by the twinning management team.

Similar to the larger group of twins in both twinning collaborations, participants in the in-depth interviews had been paired on the basis of their professional function or expertise: teachers to teachers, students to students, practising midwives to practising midwives, and managers/board members to manager/ board members [27]. For the purpose of consistency, we will refer to these one-to-one paired midwives as twins or twin pairs throughout this article. The twins – as a group, as pairs, and individually – were supported as needed by a twinning management team in each collaboration. All participated in regular workshops about cross-cultural collaboration, leadership, midwifery practise and communication. Twin pairs took part in exchange visits to each other's countries and homes, attended the Triennial Congress of the International Confederation of Midwives (ICM) and presented their achievements in a final exhibition in their respective countries [15].

2.2. Data collection

In-depth interviews were conducted using an interview guide built on the basis of observations from the twinning management team and the 25 critical success factors for twinning [16]. The experience of each interview was used as input to adapt the interview guide for the following interviews. All interviews were held face to face, audio-recorded and transcribed. The first and second author were present at the interviews.

In Morocco, the interviews were held either in French in the presence of a professional interpreter, or in English, depending on the language skills of the interviewee. The interpreter transcribed the French recordings to English. In The Netherlands, the in-depth interviews were held in Dutch, and the recordings were transcribed into Dutch. Relevant data from these interviews were translated into English for publication. In Sierra Leone, all interviews were held, and subsequently transcribed, in English. The transcriptions were sent to all twins for an accuracy check and optional additional comments. The quotes used here are drawn equally from all participants. Where necessary to ensure clarity, words were added to the quotes using brackets [].

2.3. Ethical considerations

During the initial invitation email, the confidentiality of participating midwives was assured. They were informed that their participation in this practice improvement project, was voluntary and that a decision to not participate would have no consequence for their relationship with the research team or their midwife association. All participants were asked for their consent to use the data from their in-depth interviews for research purposes and were informed that the data would be securely stored at the research centre for midwifery science Maastricht, Zuyd University, The Netherlands. For reasons of confidentiality, the nationality of twins has not been added to illustrative quotes.

According to the act governing research involving human subjects in The Netherlands (WMO), formal, written ethical approval by a research ethics committee is required only for medical research where participants are subject to interventions or procedures, or are required to follow specific, research-related rules of behaviour [30]. Neither of these apply to this research. A self-assessment tool from the Medical Ethics Committee of Maastricht University, The Netherlands, confirmed that our study is exempt from formal medical ethical review [31]. This self-assessment tool takes into account physical, psychological, and economic harms as well as harms relating to privacy concerns.

2.4. Data analysis

In accord with our inductive approach (Glaser & Strauss), the first in-depth interview was analysed by the first author, resulting in an initial set of codes and categories [32]. These were then discussed and adjusted in conversation with the second author. These codes and categories were compared for overlap and changed and/or reassembled and subsequently applied to the analysis of the next in-depth interview. We then analysed two interviews from two other midwife associations to maximise our initial exploration of cultural difference. From that point on, the order of our analysis was by date of performance. The codes and categories that emerged were adapted several times during the analysis of the first seven interviews, after which saturation occurred. The remaining interviews were analysed to check for novel themes. No new categories were identified. Dedoose, an online program for managing, analysing, and presenting qualitative and mixed method research data, was used to analyse our data [33].

2.5. Rigor and reflectivity

All authors were experienced in conducting qualitative research as well as familiar with midwifery and the concept of twinning. The first author compiled the interview guide, conducted the interviews, and lead the analysis of the transcriptions. The second author was present at all the in-depth interviews and provided an experienced and critical eye throughout the process. All authors gave feedback on the process and discrepancies were discussed until consensus was reached. We followed the Standards for Reporting Qualitative Research (SRQR) as a guideline for the reporting process [34].

3. Findings

Thirteen twins (N = 13), out of the 14 twins initially approached, took part in the in-depth interviews. Of these twins, four were from Sierra Leone, three from Morocco and six from The Netherlands. We had an uneven number of participants because one twin from The Netherlands decided not to participate after her twin from Sierra Leone had already been interviewed. Even though the interview of this Dutch twin was not available, the interview of the midwife from Sierra Leone was considered valuable and was therefore included. Eight twins responded to the request to confirm the accuracy of their transcribed interview and one made additional comments that were incorporated into her interview.

3.1. Categories

Overall, our interviews and fieldnotes show that twinning was experienced as worthwhile and, at the same time, complicated process due to continuous interaction of contextual, personal and cultural differences. Words like '*Intensive*', '*unlearning*', '*not understanding*' and '*adapting*', were common in the interviews. In our notes, we observed that twins regularly referred to the contextual differences with their twin, such as income, gender equity, education, legal status, socio-political issues, and hierarchy. Cultural differences were most often articulated with specific references to the way twins expressed emotions and opinions differently in public and in private situations. Twins regularly reflected on this: '*We are quick in expressing what is good or not good. They will not say that so openly, which is also nice*' (twin 11).

Four categories emerged in our analysis: 1) the significance of being named a twin, 2) the need to move beyond culture to the personal level, 3) the search for common ground to engage, and 4) going above and beyond the twinning collaboration. Each category continuously interacts with the other categories and, taken together, form the basis for a theory of the contribution of twin pairs to (successful) twinning (Fig. 1).

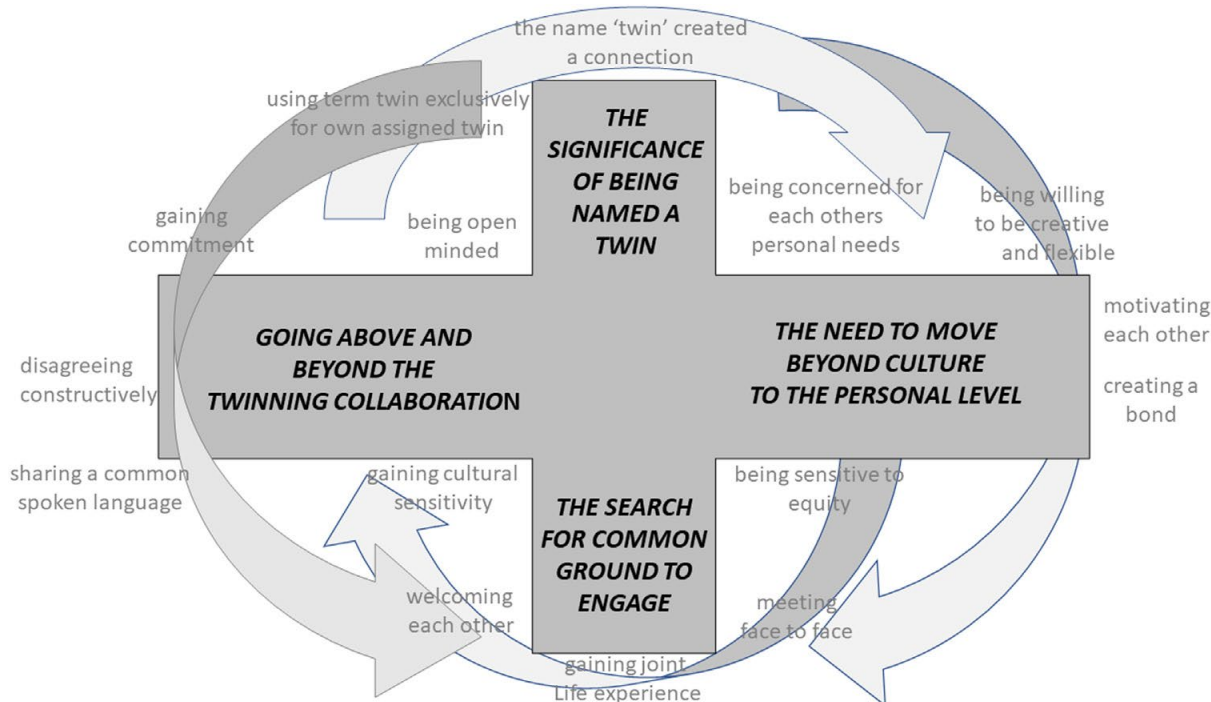


Fig. 1. From categories to four substantive categories

3.1.1. The significance of being named a twin

The idea of 'twins', two persons born from one mother in the same pregnancy who may be identical, generally appealed to our participants. The Sierra Leone twins spontaneously added 'sister' to the word twin and from then onwards the term 'twin sister' was used in most communications about the project and spontaneously adopted by most participants of the two twinning collaborations described in this study as well as new collaborations after the study was completed [13].

Twins clearly voiced their special feeling for their assigned twin during the in-depth interviews, twin 6 shared: 'I more rely on my twin, because she was my twin sister and she was giving me more knowledge on the twinning project . . . I have [more] confidence in her than other . . . twins' and twin 9: 'It is lovely to have a mate within the project, that is my twin'. The impact that this word had on the identity of the participants as twins was remarkable, nearly all twins described a feeling of pride about being a twin and having a twin sister as expressed by twin 3: 'Because she was my twin I naturally had a special personal link with her'. It is noteworthy that the 'twin sister' was used solely for the assigned twin, even when new connections within the group were formed between twins: "I have twin X as my real twin sister, I have twin Y as a semi-twin, I have kind of adopted her" (twin 10). Twins struggled to put into words the special way they felt about having a twin, as illustrated by twin 11: 'it is hard to summarise, you kind of have a twin sister. But you don't share the same mother, yet that [twin sister] is what it is about, that you feel a real connection, which is different from being colleagues'.

Unlike relationships with colleagues generally, twins shared their private lives and their relationship grew through this personal dimension as described by twin 8: *'In the beginning it was worrying, I didn't know what to expect . . . but the first message from my twin reassured me . . . in these four years I made a friend . . . she's incredible we've been able to exchange everything, professional, family, ideas'* and twin 7: *'every time we met, and all the things we experienced in our personal lives, it brought extra depth'*. Some twin pairs were observed walking hand in hand at congresses.

On the down side, not all twin pairs connected well. Twin 1 said: *' . . . the relationship hurt me . . . but when I look back I don't think of my sorrow but about the fun to build things together [with the others in the group] . . . '*. Some had different expectations of the length of the relationship. A clear example comes from the notes related to one in-depth interview where one twin expressed her pain, with tears in her eyes, of losing her twin with whom she had intensive relationship during the collaboration, but who she never saw or heard of again afterwards.

The term twin also had an 'us and them' effect. The exclusivity of twin pairs caused a feeling of missing out by some other members of the midwife association outside the twinning collaboration who had not been paired up as twin. Twin 2 said: *' . . . the moment you do one to one, they say . . . I'm not a friend of [twin X], I'm not close to her. The truth here is, how many of us [at the midwife association] related with all the twins? That was a hindrance'*.

3.1.2. The need to move beyond culture to the personal level

One of the outstanding issues during the interviews was the interplay between twins' cultures and personalities, which included their views on equity and reciprocity. During the interviews, twins expressed the struggle of trying to adapt to being in a different culture whilst holding on to their own identity, assimilating new ideas while letting go of old norms and stereotypes. The individual inclusivity of their relationship with their twin appeared to overcome the problem of cultural exclusivity of the whole twinning group.

The different cultural contexts of twins are an integral part of twinning. Even though much attention was given to cross-cultural communication and cultural sensitivity during the workshops, the focus of twin pairs was primarily on each other as individuals as shared: *'if we want to keep the twin in our life, then we must ensure there is proper and regular communication'* (twin 4). There were a few instances where twins described the others' culture as a hindrance to building their relationship: *' . . . when a twin was very religious, and [her twin] had nothing [to do with religion] this was considered to be too difficult'* (twin 5). Overall twin pairs supported the twinning process by lifting it to a personal, human level: *'the good thing about our relationship is the human aspect, it's our relationship itself . . . '* (twin 8).

It became apparent to most twins that personal differences were at least as big as cultural differences: *'She [her twin] sure has to be open-minded, flexible . . . accept change, because we're different, . . . we should feel that effort to get closer . . . not [be] judgmental. So if we have these characteristics, we can have success, and [my twin] has all these things . . . '* (twin 10). In navigating difficult issues – like equity, (dis)trust, expectations, disappointment, (de)motivation and temperament – twins learned the importance of their power-balance and how to support each other and avoid normative cultural judgements: *' . . . when there really is an inequity of power or position . . . that does not work. One becomes the dependent child and the other the boss'* (twin 3). This process of gaining insight in personal versus cultural issues resulted in personal growth for some twins described by twin 11:

'I experience that understanding this [having cultural judgements] affected me, yes, it increases my self-confidence, my leadership capacity has really had a boost'. Face to face meetings and visiting their twin's home were mentioned by all twins as crucial for creating a basis of personal familiarity: '[it was] amazing to see how she lives and works, and since that time the bond has become a lot stronger' (twin 5).

Most twins celebrated their differences, be it culture or personality, in an empowered and emancipated way. In separate interviews, each member of a twin pair independently disclosed the same story, each from their own perspective. Both laughed with joy and pride at each other's personal and cultural idiosyncrasies. This story illustrates the potential of twins to not only recognise and accept each other, but to celebrate their authentic differences: '*she was driving with [dyed] blue hair, in the exchange, my twin with blue hair!*' (twin 12); and her twin (twin 11) recalled the same incident: '*We arrived in the cabrio [ie., a convertible car], my twin with a headscarf. We were being watched . . . we discussed it and it was good and fun . . .*'

3.1.3. The search for common ground to engage

Twin pairs were responsible for creating their own sub-projects that related to the overall twinning collaboration goals set by both midwife associations. The negotiation process that preceded the choice of this sub-project created ownership amongst twin pairs: '*That project made us collide because we had the same concern, the same problem, so this concern, to be resolved or achieved, that concern motivated us*' (twin 10). Twin pairs often chose their sub-projects within an area of common interest, which further strengthened their ownership. The midwifery sub-projects stimulated twins' enthusiasm to engage, as described by twin 6: '*I decided to choose prevention of malaria in pregnancy, with my twinning sister . . . We wrote our projects and even made a cotton [wrapping cloth] so that people will know that it important for pregnant women to sleep under bed nets to prevent them from mosquito bites. This lappa cotton has even motivated other twin sisters*'. In a few instances, there was no joint interest in a midwifery sub-project, a situation that nearly always went in conjunction with a mismatch between twins. In these cases, twins tended to find other twins to work with, as described by twin 9: '*the qualities of twin X appealed more to me than my own twin . . . because we could do better business [i.e. midwifery related work] together . . .*'

Not sharing a common spoken or written language hindered finding common ground to engage. Twin 9 managed to overcome this hurdle '*I speak pretty good French, so for me that wasn't a handicap*', but this was not the case for several twin pairs. Trying to communicate ideas and feelings in a second language or even through Google translate was a specific hindrance in the Morocco/ Netherlands twinning collaboration. At the level of a shared way of thinking, twins made a special effort to keep the lines of communication open and constructive disagreement cultivated respect as mentioned by twin 1: '*Just looking at each other is enough now . . . through experience . . . we were open to each other . . . because we discuss things we find difficult*'.

In between face-to-face meetings, most twin pairs explored all manner of electronic communication including video messaging, WhatsApp, Skype, and email – and even letters by post – to continue the dialogue with the aim to progress their sub-project and relationship. Twin 9 illustrates that not all twins managed to find ways to bridge communication issues in between face-to-face meetings: '*. . . we received no answers, . . . whatever we posted or did, nothing happened. After our training in November we heard nothing unto April . . . we were so disappointed . . .*'. Twins pairs realised the importance of making the effort to understand each other: '*If both of them are not speaking with one voice . . . believe me nothing good would*

happen . . . a perfect twinning relationship is a good communication, sharing ideas together, coming out with initiatives that will be beneficial to both of us on the reduction of morbidity and mortality in my country' (twin 6).

3.1.4. Going above and beyond the twinning collaboration

Commitment by twins was expected when they were accepted initially into the twinning collaboration. This commitment was strengthened by a growing bond between them, as was relayed by twin 7: *' . . . every time we met [our relationship] deepened with all the things we experienced in our personal lives'*. As for many twins, twin 12 demonstrates how their bond grew through trust and respect for each other and developed to the level of a friendship: *'We start with professional twinning, and I think now we are friends'*. All twins mentioned that their bond was strengthened by attending joint activities such as the International Confederation of Midwives (ICM) congress together: *'After the [ICM] congress in Durban was when I thought yes, this is the way I had expected it to be'* (twin 1). The twin pairs observed and discussed each other as role models: *'I admired seeing twin X and twin Y [collaborate together]'* (twin 13). Comparing themselves to other twins also highlighted challenges that hindered bonding between twin pairs. Twin 13 told us: *'I don't have a laptop . . . Even in my office I don't have a means of communication. So it's very difficult on my side to respond immediately . . . She [her twin] had wanted more. So things don't work that way for us, it was not smooth as the others.*

Twin 7 shared how twins made a special effort to welcome each other to their respective homes, meeting family, friends and colleagues, and attending each other's professional work: *'it was a warm welcome . . . She had brought me lovely sweets and I had a book about birth for her. Yes, she liked that. It was a warm welcome'*, and twin 4 relayed: *' . . . as if we've been together before . . . twin X was so excited to meet me . . . so it was not like, oh, she is from Europe, I'm from Africa . . . You understand? Sometimes we have that inferiority complex. But we are able to accept each other'*. Being able to focus on one twin made it possible to give that personal touch is demonstrated by twin 8: *'the relationship was already there and the plus was the presence at her place, with her family . . . she took me to see her parents, I visited her sister also'*. In the interviews, twins spoke in an animated way about how they were welcomed and how their twin had gone out of their way to make the visit a positive experience. Twin 12 spoke with fervour when she relayed her memory: *'it was my scarf, she told [her boyfriend] . . . to knock on the door before he went in. Yes, for me it's a big thing. That means to me respect'*.

Twins often supported each other through times of difficulty or less motivation: *'When cultures are further apart it is better to go deeper and to attempt to connect, and that is great, really great . . . and a good motivator'* (twin 3). As a result, activities unanticipated in the twinning plan were developed in addition to the overall collaboration goals, as illustrated by twin 5: *'I still don't understand why those people wanted to help . . . they had never met me . . . I just called them . . . amazing how it all turned out'*. These additional extras gave a boost to the collaboration and other twins: *'I saw that twins that had a lot of contact had many projects, they even developed extra activities because of this personal contact'* (twin 1).

Some twins did not make an extra effort for their twin, either because they had no shared interests or because their personalities did not match well. When this happened, a few twins disengaged from the twinning collaboration to different degrees, but most found others within the collaboration to engage with: *' . . . there are different ways, I have my own way of looking at things . . . whatever you do, there is a downside. What my way is, having more people to work on somethings instead of the one to one'* (twin 2).

3.2. Toward a theory of twinning: the contribution of twin pairs for successful twinning

The four categories — 1) the significance of being named a twin, 2) the need to move beyond culture to the personal level, 3) the search for common ground to engage, and 4) going above and beyond the twinning collaboration — demonstrate a dynamic process that is described as an impactful experience by twins. Most twin pairs nurture in each other the motivation and willingness, or even the obligation, to persevere. In this way the four categories come together to make up an emergent theory, illuminating the ways twin pairs contribute to achieving their joint goals, and ultimately, to a successful twinning experience. Twin pairs pave the way for successful twinning (Fig. 2).

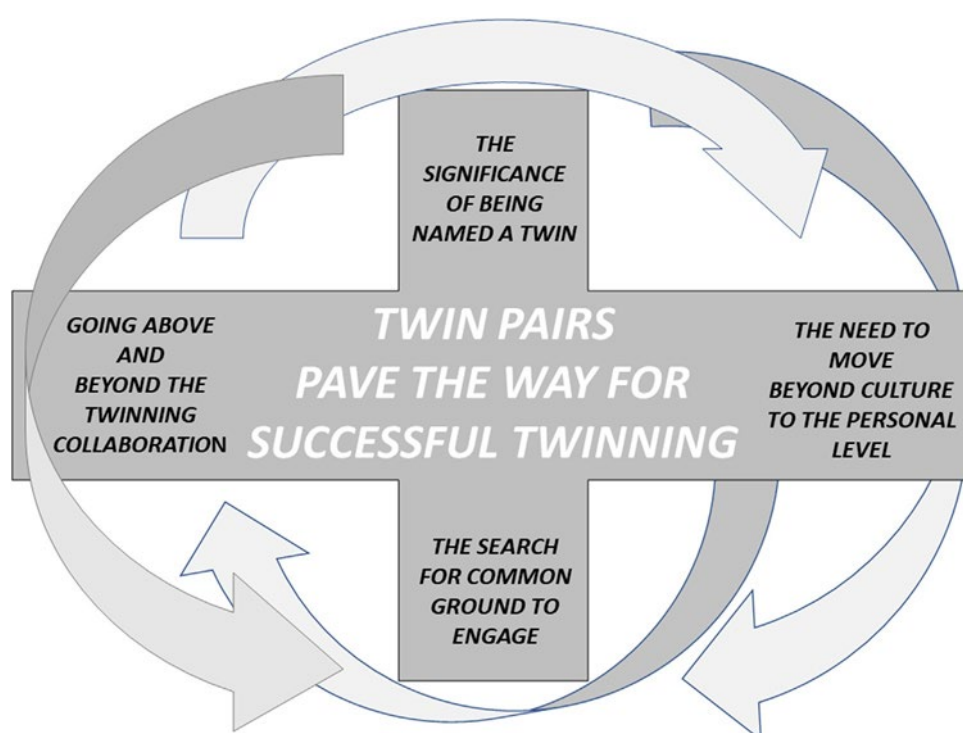


Fig. 2. The emergent theory: twin pairs pave the way for successful twinning

4. Discussion

Adding twin pairs to twinning collaborations appears to have had a positive impact on the twinning collaborations in this study. Paired twins reported both personal and professional growth and the twinning collaboration as a whole benefitted because the strength of the pair relationships safeguarded the group from human differences. However, even though twins paved the way for successful twinning, they did not act in isolation. Their activities, both together and separately, were interwoven with the whole group and the project team throughout the different aspects of the twinning collaboration.

4.1. *Twin sisters, a new dimension to twinning*

Different cultural beliefs about twins may have complicated the personal identification with this term because twins are regarded differently in different cultures. In some cultures, twins are seen as a sign of virility of the father and in many, including Sierra Leone, being one of a twin is seen as a sign of good luck [35]. For some, becoming a twin meant that you are a twin for life, whereas for others this was not the case. This can explain the dismay some twins had after their relationship ended. Adding to these cultural beliefs surrounding twins, the twin pairs that took part in these two twinning collaborations were midwives who had varying professional experiences with caring for women in their midwifery practise. This too will have influenced the appeal of the term *twin sister*, which may not be experienced by other professionals involved in twinning in the same way.

It is questionable if men would have adapted the term *twin brother* as readily as these midwives, all women, adopted *twin sister*. The degree to which one-to-one twinning would be embraced by men, or mixed-sex pairs remains as yet unexplored.

4.2. *Group culture versus individual personality*

It appears from the interview data that, at a personal level, twin pairs are more able to be nuanced than we found in our study of the group dynamics of the Moroccan-Dutch collaboration [15]. One to one, twins can no longer mask their personal views behind a cultural or professional façade and are therefore more likely to move away from cultural generalisations to see things in a contextual and personal perspective [36].

The process of building trust between individuals, learning to value each other as autonomous human beings instead of seeing one another to be part of a generalised cultural group, has been well described [37]. Our findings from these two twinning collaborations reiterates that the hindrances experienced in building trust between twin groups, where normative values are more often at play, are more easily overcome between individual twin pairs [38]. Their individual bond supported twin pairs to make the twinning collaboration safer for human differences. Similar to Wilson we found that having sufficient professional similarities - by twins having similar midwifery interests - supported this bond [21]. Trust grows more easily between individuals when there is an understanding of the context, when we manage expectations, and suspend judgement by giving the benefit of the doubt [39,40]. Twins indicated that by visiting each other's homes and work, trust was more easily achieved with their twin than with the whole group at large. The individual relationship gave twins personal support and reassurance which helped them build their self-confidence to play their part within the twinning collaboration as a whole [41]. Learning to be more adaptable and moving beyond the group culture to the personal level added a personal dimension that gave the overall twinning collaboration a boost. It is, however, difficult to determine what came first: did twins gain adaptability by learning from the collaborations, or do twinning collaborations attract more adaptable people? Twin pairs bonded to differing degrees and their adaptability appeared to play an important part in the process. It is well known that flexible people tend to adapt more easily [42]. However, we do not claim that twins only build trust with their assigned twin exclusively. Trust clearly grew within the group as a whole during group gatherings such as their joint visit to midwifery conferences, exchange visits and workshops.

Even though the data indicate that twin pairs pave the way for successful twinning, twin pairs that did not have a good match did not pave the way, although they did not hinder others moving forward. A few twins that found the relationship with their own assigned twin too challenging, found other twins to relate to. The reasons given for the differences were mostly assigned to personality and rarely to culture.

4.3. Twinning is complex

When asked to describe the essence of the twin pair relationship, all twins struggled to put their ideas and feelings into words. Many twins pointed to their own relationship and a few pointed to other twin pairs as exemplary. Twins were able to say what their twin was not: she was not just a colleague, different from a friend, and not a real sister. Even though common midwifery interests and adaptability supported twins to build trusting relationships, predicting which twins pairs will or will not build a trusting relationships remains difficult.

Cause and effect are not linear in the twinning process; the interactions and interdependencies within the twinning group and between twin pairs occur in an ever-changing context. Twinning is described as a reciprocal process [23]. When we view this reciprocity as a complex adaptive process negotiated by twin pairs, we are better able to understand how twinning can be successful [43,44]. Complexity theory has its origins in physics and does not have the limitations of linear, reductionist thinking. Complexity theory can therefore deal better with the ambiguity and uncertainty expressed by twins, and with the unpredictability, creativity, and spontaneous self-organisation of twinning collaborations at large.

Complexity theory helps clarify why, in twinning, one size does not fit all. Every midwife association and twin pair steps into twinning differently - coming from different places and working in different contexts - therefore successful results cannot be directly related to specific activities. The inevitability of unanticipated events underscores the unpredictable process of twinning and the need for adaptability [45].

5. Strengths and limitations

The strength of this study is that the data are extensive and rich as it was gathered from 13 participants from two twinning collaborations in low, middle, and high income countries from Europe, Northern and Sub-Sahara Africa. Saturation of the data was achieved after the analysis of the seven in-depth interviews, and the following six interviews affirmed the categories that emerged. This adds to the reliability and global applicability of the findings. The data was gathered between one and four years after finalization of the twinning collaborations providing a long term perspective of participant views – and not just a positive “afterglow” that might be found immediately after the collaboration was completed. All authors have extensive backgrounds in qualitative research. The first author was deeply immersed in managing twinning collaborations, all other authors have gained a substantial familiarity with the concept of twinning.

Our study also has limitations. Despite the fact that purposeful sampling – based on differences in the intensity of commitment to their twin relationships – was used to generate a balanced representation of the range of twin pair collaborations, the sampling was solely based on the impressions of the twinning management team. It is noteworthy that twin pairs who appeared to have overtly challenging relationships or little contact did not describe themselves as such. Even though we guaranteed confidentiality and made an effort to create an open constructive

atmosphere during the in-depth interviews, it is still possible that twins' familiarity with the first author as well as cultural and personal differences in sharing these negative aspects of their experiences may have hindered them from expressing themselves freely or choosing to frame it positively as a learning experience. An argument can be made that the double role of twinning manager and researcher/first author could be problematic. However, qualitative methods in general, and grounded theory more specifically, call for intimate familiarity with the topic under study [32,46]. The position of the first author allowed that familiarity and the inclusion of two experienced researchers who were not involved in the twinning collaboration allowed a more objective view of the data. Finally, language issues meant that a professional interpreter was necessary for some of the in-depth interviews. Some nuance may have been lost during translation.

6. Conclusion and recommendations

Twin pairs relate positively to being named a twin, move beyond culture to the personal level, search for common ground to engage, and go above and beyond the twinning collaboration. This opened opportunities for twin pairs to pave the way for successful twinning. The dynamics of twinning collaborations are complex because of the interplay of personal, professional, group, organizational, and cultural processes within an ever-changing context. The relatively new development of adding twin pairs gives an extra dimension to twinning, yet does not appear to complicate twinning further. Instead, twins help to navigate this complexity contributing to the joint goals of the project while bringing along additional unexpected positive results.

Bonding between twin pairs is enabled by twins building trusting relationships. This is facilitated by the adaptability of each twin as well as by issues such as meeting face to face, sharing a common language, making history together through joint activities in the private and midwifery sphere, and having shared interests. Clearly, not all twins built strong relationships, but in our study twins with relational challenges did not have a negative impact on the twinning collaboration as a whole.

It is tempting to think that there is a right way to set up twinning collaborations. However, the one size fits all idea is an illusion and set up to fail. The strength of twinning is that its appearance becomes apparent through a unique process that adapts itself to the reality of different contexts. This was reiterated by twin pairs themselves who were unable to pinpoint the essence of their relationship except for pointing out what it was not.

With the growing demand for twinning by midwife associations globally, we recommend the pairing of twins in twinning collaborations. Coaching twins personally and professionally, without coercion, can support them in building trusting relationships, crucial for bonding. Sharing a common spoken and written language, while not always possible, will reduce unnecessary communication complications. Pairing twins can also benefit other forms of collaborations such as exchanges, working visits, and partnerships.

Author statements

All authors have contributed substantially to the study conception and design, data acquisition, analysis and interpretation. All authors have contributed to the drafting of the article for intellectual content. All authors agree to be accountable for all aspects of the work related to the accuracy or integrity of any part of the work. All authors approved of the final version.

Author contributions

The conception and design of the study, acquisition of data, analysis and interpretation of data — All authors.

Drafting the article or revising it critically for important intellectual content — All authors.

Final approval of the version to be submitted — All authors.

Funding

This study received funding from the *Stichting Bijzondere Voorzieningen Moederschapszorg* (SBVM) in Heerlen, the Netherlands (Charity Special Provisions Maternity-care) to enable the first author to dedicate time to writing this article. The funders had no involvement in the study design, in the collection, analysis and interpretation of data, in the writing of the report and in the decision to submit the article for publication. No other funding was received from funding agencies in the public, commercial, or not-for-profit sector.

Conflict of interest

None declared.

Acknowledgments

We would like to acknowledge all the midwives who took part in this study.

Appendix A. Supplementary data

Supplementary material related to this article can be found, in the online version, at doi:<https://doi.org/10.1016/j.wombi.2020.01.013>.

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