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ORIGINAL ARTICLE

Personal RELATIONSHIPS WILEY

The relationship between personal networks of parents and children's behavioral and school-related problems in family interventions

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Abstract

Studies in the field of child welfare services have shown that children's externalizing problems are linked to the immediate social relationships in which they are embedded. However, most studies that examined this association focused on specific dyads or general social support, ignoring more diverse and complex patterns of relationships in which children are embedded. Therefore, this study used Social Network Analysis to analyze how compositional and structural properties of parents' personal networks predict externalizing problems of children in vulnerable family contexts. The sample consists of 70 parents who were enrolled in a home-based family intervention in Switzerland. A hierarchical cluster analysis revealed three clusters based on the network composition: mixed, child-oriented, and family of orientation. Child behavior problems were associated with the network clusters; school-related problems, on the other hand, were additionally linked with support

Statement of Relevance: Children's externalizing problems are a common reason why families are referred to family interventions. To date, research has mainly focused on the role of relationships in the nuclear family to explain these problems. Therefore, this study examined the personal networks of parents participating in a family intervention and their associations with children's externalizing problems. The results have important implications for understanding the structural disadvantages of vulnerable families and for the further development of family interventions.

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density in the personal networks of parents. The results show that children in vulnerable families are embedded in diverse network compositions and relational structures, which influence their externalizing problems in different ways.

KEYWORDS

children's externalizing problems, configurational approach, family intervention, personal network, social network analysis

Children's externalizing problems, such as behavioral issues or low functioning at school, are common causes for families being referred to family interventions (van Assen et al., 2023). Research has emphasized the importance of family relationships in understanding the occurrence of such problems (Garbarino, 1982). The literature emphasizes the importance of family ties in terms of two dimensions. Firstly, research suggests that families that are recipients of child welfare services lack adequate social support to protect their children from adversities (Thompson, 2015). Second, research stresses the prevalence of intense and chronic interpersonal conflicts within families (Burn et al., 2019) and their negative consequences for children (Grych & Fincham, 2001). However, in most research, the specific patterns of the relationships in which children are embedded are ignored because of the emphasis on individual attributes (e.g., parents' access to social support), specific dyads (e.g., parent–child relationships), or predefined family structures (e.g., single-parent vs. two-parent families). This focus disregards the role of familial resources and conflicts associated with more complex and diverse configurations of family ties in children's externalizing problems. Therefore, this study hypothesizes that the externalizing problems of children enrolled in child welfare services are associated with the compositional and structural properties of their parents' personal networks in which they are embedded. Parents' personal networks consist of the important people in their lives and the relationships between them. These relationships are sources of support and conflict, but they are also linked to values, norms, and beliefs that influence family life in both positive and negative ways (Widmer, 2010). This study focuses on behavioral and school-related problems, especially externalizing issues, diagnosed by professionals carrying out family interventions. Research has shown that both types of externalizing problems can have serious and long-term effects on children regarding criminal behavior, substance abuse, mental health, domestic violence, educational success, or employment outcomes (Fergusson et al., 2005). In home-based family interventions, the parents' personal networks play an important role in the success of the intervention, as they contribute to the required changes in the relationship patterns in which their children are embedded (Fellmann, 2023).

1 | BACKGROUND AND THEORY

1.1 | Child welfare services in Switzerland

The Swiss welfare state has a range of measures to safeguard the welfare of children. Services to remedy child endangerment can be roughly divided into residential care, foster care, and

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home-based family interventions. Access to these services is only possible via a social service or an authority that considers these services to be necessary and appropriate. Child welfare services can be provided on either a mandatory or an agreed basis. In both cases, the precondition for accessing services is that the child's welfare is at risk. Compulsory measures are only considered if parents are unwilling or unable to take remedial action; otherwise, services are provided on an agreed basis (Schnurr & Gautschi, 2023). Home-based family interventions are considered a less drastic measure for families in contrast to the placement of the child in a foster family or residential care facility. They are intended to support families in initiating suitable changes to ensure that the child is safe and avoid out-of-home placements. However, home-based family interventions in Switzerland are usually intensive and interfere greatly with the family's autonomy (Wetzel et al., 2020). According to McGregor et al. (2020), home-based family interventions can be viewed as specific services that fall within a broader category of family support services. Home-based family intervention programs have in common that they provide their services primarily in families' homes. These programs are a well-established form of family support. In the United States, for example, home-visiting programs were documented as early as the 1880s (Sweet & Appelbaum, 2004). Research in Switzerland has shown that children who are involved in home-based family interventions often experience two types of externalizing problems (Messmer et al., 2021). On the one hand, these are behavioral problems that often overburden parents in raising their children. This involves, for example, non-compliance with rules, aggression, and a lack of emotional control. On the other hand, there are school-related problems such as lack of attention, non-compliance with rules, and disruption of lessons. These problems are often associated with poorer school performance.

2 | FAMILIES IN SWITZERLAND

According to the latest statistical report, around three-quarters of the families in Switzerland consist of married couples (74.2%). Non-married couples account for 9.5% of families, and same-sex couples for 0.1%. The remaining 16.2% are single parents. Switzerland is heterogeneous in terms of the migratory background of households. Forty-nine percent of children under the age of 25 live in a household without a migratory background. Thirty-five percent grow up in a household with a migratory background, and 16% in a mixed household in which only one parent has a migratory background. Family formation has a strong impact on the employment situation of parents in Switzerland. The most common model is that the father works full-time and the mother part-time, while in households without children, both partners often work full-time (Swiss Federal Statistical Office, 2021). Switzerland is characterized by both liberal and conservative attitudes regarding family policy (Bonoli, 2007). Social policy tends not to interfere in the family sphere, as this is seen as a private concern. In this regard, Switzerland is an interesting case because it can be argued that parents' personal networks have a stronger influence on children's development than in other welfare state systems where family matters are dealt with more actively. As a matter of fact, comparative research has shown that national contexts shape the personal networks of their residents. Compared to other countries, family ties in Switzerland are characterized by weaker intergenerational obligations and normative orientations that support autonomy and self-reliance (Wall et al., 2018).

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3 | PERSONAL NETWORKS OF VULNERABLE PARENTS

Families that are recipients of child welfare services are regularly referred to as vulnerable because they lack the resources to prevent the latent or current endangerment of their children. Research has shown that families referred to child welfare services often face multiple problems simultaneously, such as financial debt, mental illness, unemployment, alcohol and drug abuse, domestic violence, and housing-related issues (Messmer et al., 2021; Tausendfreund et al., 2016). Vulnerable families lack adequate resources to sustainably solve such problems (Tausendfreund et al., 2016). Children who grow up in vulnerable families are often embedded in relationships that are challenging for their development and well-being. For instance, research suggests that parents who are labeled as vulnerable have inadequate access to social support (Harknett & Hartnett, 2011; Nunes et al., 2021) and feel more isolated (Geens et al., 2019; Mercer et al., 2020); in particular, parents have been found to lack instrumental support (Messmer et al., 2021; Sheppard, 2004). Instrumental support refers to concrete and practical help such as childcare and financial and material aid (Ayala-Nunes et al., 2017). Furthermore, vulnerable parents lack bridging social capital (Geens et al., 2019; McArthur & Winkworth, 2017). This type of social capital refers to the social ties between individuals belonging to different social circles (Szreter & Woolcock, 2004). A lack of bridging social capital results in networks that are more homogeneous in terms of socioeconomic background and social identity (Harknett & Hartnett, 2011). Research has shown that vulnerable parents are often embedded in networks that cannot provide adequate support because most of these network members are vulnerable (Lubbers et al., 2020). Therefore, vulnerable parents often rely on formal support provided by professionals, such as social workers. Parents who rely significantly on formal support emphasize it as an important source of information and advice and depend on its function as a conduit to other sources of formal support (McArthur & Winkworth, 2017).

In addition to a lack of social support, research has shown that interpersonal conflicts play an important role in the networks of vulnerable individuals (Rossier et al., 2023). In vulnerable families, conflicts are often associated with tensions related to the distribution of scarce resources and socioeconomic disadvantages (Conger et al., 2010; Widmer, 2010). Intense conflicts between parents who are recipients of child welfare services often arise because of separation or divorce, which requires the restructuring of parenthood. The negotiations that are part of this process can trigger conflicts because strong feelings are involved (Hydén, 2001). Conflicts between parents and their children enrolled in child welfare services are often expressed through mutual hostility and anger (Burn et al., 2019).

4 | PERSONAL NETWORKS OF PARENTS AND CHILD OUTCOMES

Parents' personal networks are highly important in understanding the development of children's externalizing problems. Children are embedded in the personal networks of their parents and are therefore affected by them in terms of socialization, resources, and conflicts. Multiple studies have shown that parents' personal networks significantly affect their children's development and well-being. For instance, research has shown that the composition of parents' personal networks, access to social support, and the presence of intense and frequent interpersonal conflicts must be considered. Lower compositional diversity in parents' personal networks increases the risk of child behavioral problems (Koyama et al., 2020). Furthermore, the number

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of dependable friends of parents is associated with their children's happiness, school adjustment, negative emotions, and social skills (Homel et al., 1987). Research has also shown that higher levels of social support are positively associated with child resilience (Armstrong et al., 2005), psychological adjustment (Nunes et al., 2021), and academic achievement (Dufur et al., 2013; Richman et al., 1998), and negatively associated with delinquent behavior (Dufur et al., 2015). Research has also stressed the negative associations between interpersonal conflicts in families and children's outcomes in various domains. For instance, frequent conflicts between parents are associated with child behavioral problems (Xuan et al., 2018), emotional insecurity (O'Hara et al., 2023), or lower academic attainment (Harold et al., 2007). Hostile interparental conflict negatively affects various domains of child functioning, including externalizing problems (van Eldik et al., 2020). Research has also compared predefined family structures to examine their associations with child outcomes. For instance, children who grow up in families with two parents are less likely to develop behavioral or school problems (Stoddard-Bennett et al., 2023).

5 | THEORETICAL FRAMEWORK AND HYPOTHESES

The research presented in the previous section provides strong evidence of the association between parents' personal networks and children's outcomes in various domains. However, information on the personal networks of parents or families is mostly collected using attribute data (e.g., parents' access to social support) or predefined dyads (e.g., mother–father conflict). For instance, social support is often measured as an attribute of a parent, which is expressed as the level of access to potential social support, rather than as a feature of a social structure in which parents and children are both embedded with other individuals. Therefore, the existing research assumes that social support is transferred from parents to their children. Consequently, children are seen as passive recipients of the beneficial effects of social support rather than active contributors to family relationships. This ignores the fact that dyads are not separate entities but rather are embedded in larger patterns of interdependent relationships. To understand the function of a dyad, its relational context must be taken into account (Widmer, 2010).

5.1 | Configurational perspective on families

To add a new perspective to the existing research, this study was built from a configurational perspective on families (Widmer, 2010). The configurational approach stresses that families are not predefined by institutional criteria but rather by family members' own definitions of who belongs to the family and how they are connected. Dyadic relationships between family members, such as parent–child or parent–parent relationships, are embedded in a larger web of interdependent relationships that extend beyond the boundaries of the nuclear family or household. From a configurational perspective, families are understood as networks in which members are connected through relationships of support and conflict. Therefore, a configurational approach considers the complex patterns of family relationships in which children grow up. In this framework, children's externalizing problems are understood as the result of complex interactions between the child and the social environment rather than the result of a single dyadic relationship. Parents' personal networks expose their children to influential individuals who are interconnected through patterns of supportive and stressful ties. These networks operate within

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larger social systems and shape opportunities in several domains of life (Cochran & Walker, 2005). Cochran and Brassard (1979) identified four important direct influences of parents' personal networks on children: cognitive and social stimulation, direct support, observational models for the child, and the provision of opportunities for active participation. Furthermore, the experiences of children and the social skills they learn from their parents' personal networks are fundamental for children to build and maintain their own personal networks. The use of a configurational perspective on families emphasizes variations in terms of size, composition, patterns of support and conflict, and the structural positions of family members. These variations are important for the well-being and development of children. For example, dense support patterns in networks provide children with safety, trust, and embeddedness (Kadushin, 2012). Parents who have a central position in a web of support relationships can better link their children with beneficial resources such as recreational activities or academic support (Burt, 2001). However, dense patterns of relationships associated with conflict are linked with a more stressful family environment for children (Widmer, 2010). When parents are central in a web of conflict relationships, they are more likely to be affected by psychological distress (Sapin et al., 2016), which can negatively affect their children.

5.2 | Summary and hypotheses

This research aimed to examine the associations between three dimensions of parents' personal networks and children's behavior and school-related problems. These dimensions include the following: (a) composition of personal networks, (b) structural indices that relate to support, and (c) those associated with interpersonal conflicts.

The *composition* refers to the type of relationship between the focal individual (ego) and the members of the personal network (e.g., ego's brother, mother, or friend). This study argues that parents' personal networks, which consist of a high diversity of network members, are beneficial for children. Such ties enable children to spend time in other social circles and provide them with access to a wide variety of resources and experiences (Cochran & Brassard, 1979). Personal networks consisting of a low diversity of individuals tend to create higher levels of behavioral homophily, which indicates that behavioral patterns are shared among network members (Daw et al., 2015). Furthermore, compositional diversity is also helpful in promoting the academic life of children because such networks consist of a greater variety of knowledge, skills, and perspectives (Burt, 2001).

> **H1.** Children embedded in networks with high compositional diversity are less likely to be affected by behavioral and school-related problems.

The second dimension includes the structural indices of networks that refer to *support*. In this regard, the indicators *support density*, and the *centrality* of individuals within support relationships are important. *Support density* describes the extent to which network members are connected through supportive relationships. Higher support density indicates that most, if not all, network members would support each other in the event of a need. In such networks, support is provided in a collective and well-coordinated manner. This creates trust and safety in the network (Coleman, 1988). *Centrality*, on the other hand, refers to the structural position of individuals within a network. In the context of support relationships, individuals with high centrality act as brokers between individuals who are otherwise not connected and, therefore,

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control the flow of information and resources. This position enables access to a diverse pool of individuals and resources (Burt, 2001). Parents who have high centrality in support relationships can link their children with more exclusive resources (Widmer, 2010), which allows them to support children more effectively (Kadushin, 2012).

> **H2.** Children embedded in networks with high support density and centrality of their parents in support relationships are less likely to be affected by behavioral and school-related problems.

The third dimension refers to structural indicators associated with *conflict*. These are *conflict density* and the *centrality* of individuals within conflicted relationships, respectively. In this regard, *conflict density* refers to the extent to which the network members are connected through conflicted relationships. High conflict density suggests a dense pattern of conflict-related interactions between network members. In this case, many network members are interconnected through conflict, which creates a stressful family environment with numerous tensions (Widmer et al., 2018). Children who are embedded in networks with high conflict density have few or no relationships that are not characterized by conflict. While research has emphasized the negative effects of interparental conflict on various domains of child development (Grych & Fincham, 2001), conflict density considers a significantly larger set of relationships than interparental or parent–child conflict. High centrality in conflict relationships, on the other hand, indicates that individuals are considered as a common opponent within a network (Everett & Borgatti, 2014). Individuals in such a position act as brokers of the flow of negative tension in networks (Bowen, 1993), which is a stressful position (Sapin et al., 2016). It is likely that the stress that parents experience in this position diffuses into their personal networks if no positive relationships are present (de Bel et al., 2021). Parental stress has been shown to negatively affect children's behavior and school performance (Bakoula et al., 2009; Rogers et al., 2009).

> **H3.** Children embedded in networks with high conflict density and centrality of their parents in conflict relationships are more likely to be affected by behavioral and school-related problems.

6 | METHOD

6.1 | Participants

The study sample consists of 61 mothers and nine fathers from 70 different families ($N = 70$) with an average age of 37.4 years (SD = 8.6 years) and 2.27 children (SD = 1.05, Mdn = 2). The average age of the children was 8.8 years (SD = 4.9 years, IQR = 8 years). Sixty percent of the children were male. Almost half the parents (47.1%) did not have a partner. Forty percent of the parents were foreign citizens, and 42.9% did not have a vocational education. More than half of the parents (54.3%) were unemployed at the time of the interview. Little more than one-third of the parents were enrolled in the family intervention on a compulsory basis (35.7%), while the rest were enrolled on an agreed basis. An analysis of the best available data from service providers has shown that the over-representation of single mothers and parents with a

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migratory background is common among families participating in this type of intervention in Switzerland (Messmer et al., 2019).

6.2 | Procedure

Study participants were recruited from the German-speaking part of Switzerland between June 2018 and April 2019. Access to the participants was provided by 18 service providers of *Social Pedagogical Family Support*, the most frequently used home-based service in the Swiss child welfare system (Wetzel et al., 2020). The intervention was aimed at families with endangered children. Families enrolled in this intervention are diverse in terms of their national origins, family structures, and problems (Messmer et al., 2021). The goal is to support families in developing new strategies to promote and secure their children's well-being. Service providers were instructed to invite every family enrolled in their service to participate. One parent out of every family who agreed to participate in the study was interviewed using a paper-and-pencil questionnaire at the start of the intervention by a social pedagogue who was assigned to the family. In addition, the social pedagogues completed a questionnaire containing information about the family intervention. The social pedagogues were instructed in the data collection by means of an instruction letter and a video in which the application of the research instrument was explained step by step. In addition, all supervisors were instructed individually by telephone. The data was collected by a total of 41 social pedagogues. Parents were interviewed at the start of the family intervention, which was, on average, at the fourth home visit ($M = 4.29$, $SD = 2.01$). It must be noted that at the start of this study, there was no institutional review board for social science studies in Switzerland. However, the University of Applied Sciences and Arts Northwestern Switzerland formally confirmed compliance with its ethical standards. Detailed information about the study was provided to all participants, from whom written consent was obtained at the start of the research, including the option to opt out of the study at any time with no consequences.

6.3 | Measures

The personal network data of the parents were collected using the German version of the Personal Network Method (PNM). This validated instrument allows for the collection of egocentric networks, including ego-alter and alter-alter relationships (Widmer et al., 2013). In the first step, respondents were asked to list a maximum of 14 individuals according to the following name generator: *Who are the individuals who, over the past year, have been very important to you, even if you have not got along well with them*? Data on support relationships were collected by asking respondents who from the listed individuals (including themselves) would support whom in the event of small problems or a crisis. Information on conflicted relationships was gathered by asking respondents who upsets whom frequently in their network.

Information about the children's externalizing problems was collected via the social pedagogues who performed the home visits. The social pedagogues were asked to indicate if at least one child in the family is affected by behavioral and/or school-related problems. This information was collected using a dichotomous scale for each of the two problems (0 = *not diagnosed*, 1 = *diagnosed*). Both problem categories were defined based on the instrument used in the German Children and Youth Services Statistics (Fendrich et al., 2018). The *behavior problems*

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category covers a wide range of problems associated with the behavior of children, such as aggressive, delinquent, or disruptive behavior. *School-related problems* are also a broad category, including difficulties with performance requirements, school-avoiding behavior, and concentration problems. With the use of these broad measures of child behavior and school-related problems, the focus was on the range of associations with the personal networks of the parents rather than on detailed mechanisms.

Parents' personal networks were analyzed using indicators that corresponded with the three hypotheses of the study. These are composition, density, and centrality (Wasserman & Faust, 1994). The *composition* refers to the distribution of network members in respondents' personal networks. The network members were, therefore, grouped into different categories based on the type of relationship between the respondent (focal individual) and the network members (e.g., children of the respondent, parents of the respondent, and siblings of the respondent). The composition measure then simply counts the number of relationship types. The structural features of the personal networks were analyzed using the network density and betweenness centrality of the respondents. The *density* of a network is computed by dividing the number of factual ties in the network by the total possible number of ties. The density ranges from 0 to 1. Higher values indicate a higher network density. The density was computed for support and conflict ties. The centrality of the respondents was measured using the *betweenness centrality* indicator, computed by counting how often the respondent lies on the shortest path between two network members. The standardized form of the betweenness centrality measure ranges from 0 to 1. Betweenness centrality was computed for support and conflict ties. Higher betweenness centrality implies a more central position in support or conflict relationships.

6.4 | Data analysis

Data analysis involved four steps. First, hierarchical cluster analysis was conducted to identify clusters of parents' personal networks based on their composition. Second, the compositional and structural differences between the clusters were analyzed using the Kruskal–Wallis test and Analysis of Variance (ANOVA). Third, the associations between clusters and sociodemographic factors were examined using the Chi-square test. Finally, binary logistic regression models were tested to measure the predictive value of cluster membership and the structural dimensions of support and conflict for children's behavioral and school-related problems. The binary predictors of density and betweenness centrality were computed using the median split. In two out of the 70 cases, the social pedagogues did not provide information on the child-related variables. Based on the literature, all models included the migratory background of the respondents ($0 = no$, $1 = yes$) as a control variable. Migratory background has been linked to problems in several domains in the context of family interventions in Switzerland (Messmer et al., 2021). Additional control variables were not introduced due to the small sample size.

7 | RESULTS

Table 1 shows the descriptive statistics regarding the network indicators and child-related variables used in this research. Network size, as well as the density and betweenness centrality measures, were calculated with the Python package *NetworkX*.

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TABLE 1 Characteristics of variables of interest.

Network variables	*M*	SD	Range
Network composition			
Number of children	1.800	1.325	0–6
Number of partners	0.457	0.502	0–1
Number of ex-partners	0.243	0.464	0–2
Number of parents	1.271	0.833	0–3
Number of siblings	1.157	1.566	0–8
Number of friends	1.386	1.516	0–6
Number of kin	0.471	1.139	0–5
Number of in-laws	0.557	1.150	0–5
Number of professionals	0.271	0.815	0–4
Number of others	0.471	1.224	0–8
Network size and structure			
Network size	9.057	3.310	3–15
Support density	0.379	0.269	0.028–1.000
Support betweenness centrality	0.204	0.185	0.000–0.714
Conflict density	0.181	0.200	0.000–1.000
Conflict betweenness centrality	0.057	0.119	0.000–0.640
Child-related variables	**Diagnosed (*n*)**	**%**	
Behavior problems	22	32.4	
School-related problems	21	30.9	

Note: Behavior problems and school-related problems were coded as 0 = *undiagnosed* and 1 = *diagnosed*. In two cases, information on the child-related variables was missing.

7.1 | Differences in personal networks of parents

Hierarchical cluster analysis was performed using Ward's method and the squared Euclidean distance to classify parents' personal networks into clusters based on their composition. The compositional indicators used for the cluster analysis included the number of children, parents, siblings, and friends. The ideal cluster solution was determined using the silhouette value, which measures the distance between each data point and the neighboring clusters. The measure ranges between −1 to +1, whereby a high positive silhouette value indicates a far distance to the neighboring clusters (Rousseeuw, 1987). The best result was achieved through a three-cluster solution including a *mixed* ($n = 20$), a *child-oriented* ($n = 24$), and a *family of orientation cluster* ($n = 26$) with an average silhouette value of 0.24 (min: −0.37, max. +0.50). Compositional differences among the three clusters were analyzed using Kruskal-Wallis-Tests. The results displayed in Table 2 show several significant differences between the clusters. Personal networks in the *mixed cluster* have a higher number of friends, parents, and others. The *child-oriented cluster* has more children compared to the other two clusters but lacks other types of network members. The *family orientation cluster* consists predominantly of the respondents'

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TABLE 2 Kruskal-Wallis-Test results for network composition grouped by network clusters.

Composition variables	Mixed ($n = 20$) Mean Rank	Child-oriented ($n = 24$) Mean Rank	Family of orientation ($n = 26$) Mean Rank	Kruskal-Wallis H	p
Number of children	27.40	51.04	27.38	22.660	<.001
Number of partners	35.25	37.00	34.31	0.299	.861
Number of ex-partners	41.70	34.69	31.48	5.476	.065
Number of parents	40.05	26.50	40.31	8.155	.017
Number of siblings	29.45	25.33	49.54	22.607	<.001
Number of friends	59.28	29.46	22.79	42.810	<.001
Number of kin	31.80	37.21	36.77	1.911	.385
Number of in-laws	42.65	32.10	33.13	5.928	.052
Number of professionals	35.68	38.02	33.04	2.029	.363
Number of others	43.25	33.96	30.96	7.706	.021

TABLE 3 ANOVA results for network size and structure grouped by network clusters.

Size and structure variables	Mixed ($n = 20$) M (SD)	Child-oriented ($n = 24$) M (SD)	Family of orientation ($n = 26$) M (SD)	F	p
Network size	11.15 (2.46)	8.33 (3.02)	8.12 (3.51)	6.527	.003
Support density	0.26 (0.21)	0.36 (0.24)	0.49 (0.30)	4.767	.012
Support betweenness centrality	0.29 (0.22)	0.14 (0.12)	0.20 (0.19)	3.877	.026
Conflict density	0.11 (0.08)	0.15 (0.14)	0.26 (0.28)	3.910	.025
Conflict betweenness centrality	0.04 (0.08)	0.03 (0.09)	0.09 (0.16)	1.784	.176

parents and siblings. The number of professionals did not differ significantly between the clusters. In all three clusters, the average number of professionals was less than one.

The network clusters were also significantly different in terms of size and structural dimensions. As the ANOVA results presented in Table 3 indicate, networks in the *mixed cluster* were larger in terms of size compared to the other two clusters. Furthermore, the *mixed cluster* had the lowest support density but the highest betweenness centrality. The *family of orientation cluster* had the highest average support and conflict density. No significant differences were found in the betweenness centrality of respondents in conflict relationships.

Figures 1–3 present a graphical visualization of the three network clusters, including the support and conflict relationships for each case. Networks in the *mixed cluster* were, on average, the largest and most diverse with regard to composition. These networks are characterized by low support density but a high betweenness centrality of parents in support relationships. Therefore, parents (focal individuals) have direct access to many network members who are not connected to each other. Moreover, the conflict density in this cluster was low. Thus, most

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network members are only marginally or are not interconnected through conflict-ridden ties. Figure 1 shows an example of a personal network from the *mixed cluster*. In this case, the social pedagogue diagnosed the eight-year-old daughter with behavioral and school-related problems. Although it is a relatively large network, the daughter is only supported by her mother and father, who is the mother's ex-partner. Both parents also frequently upset the daughter, which points to the ambivalence in her relationship with her parents.

The *child-oriented cluster*, which consists mainly of the parents' children, had the lowest compositional diversity. However, due to the higher support density in comparison to the *mixed cluster*, support is provided more collectively. Furthermore, this cluster is characterized by parents with the lowest centrality in support relationships. Therefore, parents are restricted in their access to different pools of resources and in their role in moderating the provision of support. Moreover, this cluster is characterized by a low conflict density. Figure 2 shows an example of a personal network in the *child-oriented cluster*. It is the personal network of a mother. The two older children are from her relationship with her current partner. The youngest child is from a previous relationship. In this case, the youngest child was diagnosed with behavioral problems by the social pedagogue. The youngest child not only receives support from fewer network members than the other two children but also has a central position in interpersonal conflicts.

Personal networks in the *family of orientation cluster* consist mainly of the focal individual's intra- and intergenerational ties. This cluster is characterized by the highest support density.

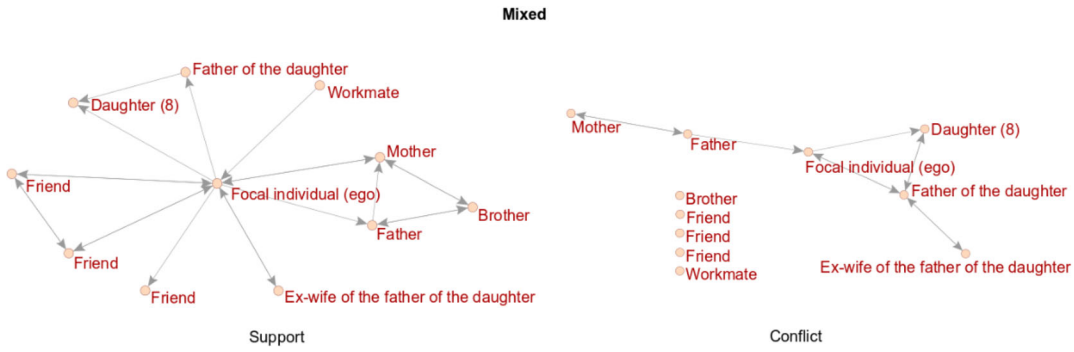

FIGURE 1 Graphical visualization of a network from the mixed cluster.

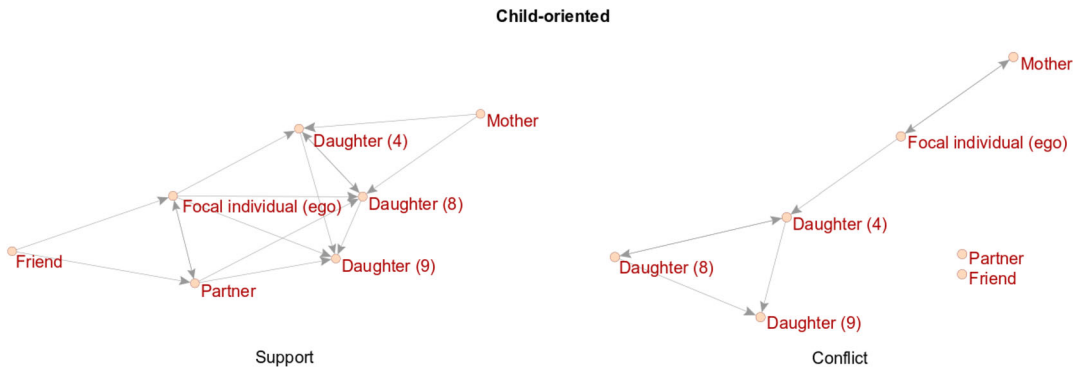

FIGURE 2 Graphical visualization of a network from the child-oriented cluster.

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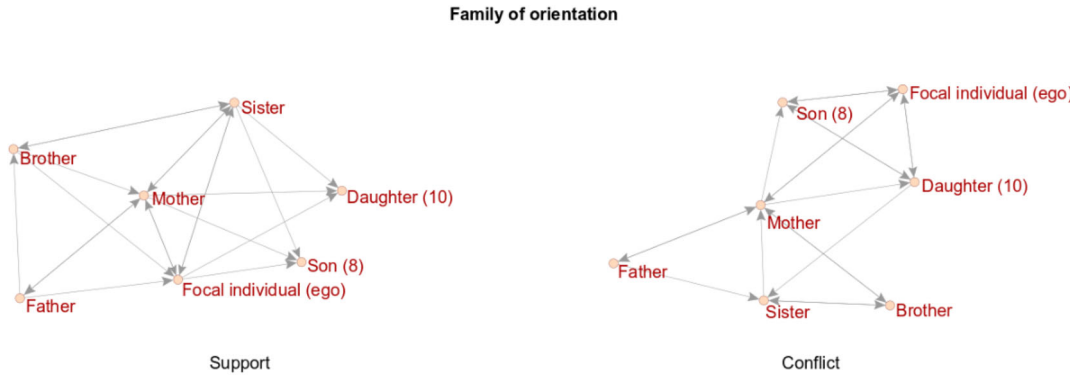

FIGURE 3 Graphical visualization of a network from the family of orientation cluster.

Hence, many network members are interconnected through supportive ties. This implies that network members can rely on support from various network members and provide support for many others. Conflict density was also the highest in this cluster, indicating that many network members frequently upset each other. Figure 3 shows the case of a single mother's personal network that belongs to this cluster. Here, no behavioral or school-related problems were identified by the social pedagogue. Both children are supported not only by their mother but also by their grandmother (mother of the focal individual) and their aunt (sister of the focal individual). At the same time, the children are also involved in conflictual relationships with their mother and grandmother.

7.2 | Associations between network clusters and sociodemographic factors

According to the Chi-square tests shown in Table 4, the network clusters were significantly associated with several sociodemographic factors. The adjusted residuals were used to further interpret the results by applying the ±2.0 rule (Sharpe, 2015). Older parents (≥37 years) were more likely to be in the *child-oriented cluster* (adj. residual = +3.0), whereas younger parents (≤36 years) were more likely to be embedded in a network that belongs to the *family of orientation cluster* (adj. residual = +2.5). Parents with a higher number of children (≥3) were more likely to be in the *child-oriented cluster* (adj. residual = +3.4) and less likely to be associated with the *mixed cluster* (adj. residual = −2.3). Parents with a migratory background were less likely to be in the *mixed cluster* (adj. residual = −3.0) and the *family of orientation cluster* (adj. residual = −2.0). The results also show that parents with secondary education or higher were more likely to be embedded in a network from the *mixed cluster* (adj. residual = +3.0).

7.3 | Predictors of behavior and school-related problems

Finally, two binary logistic regression models were tested to analyze whether the network clusters and support and conflict measures predicted child behavior (Table 5) and school-related problems (Table 6). Model 1 included the network clusters as predictors. Model 2 contained

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TABLE 4 Chi-square test results for sociodemographic factors of the parents grouped by network clusters.

Variables	Mixed ($n = 20$) % (n)	Child-oriented ($n = 24$) % (n)	Family of orientation ($n = 26$) % (n)	X^2	p
Age				10.046	.007
≤36 years	55 (11)	25 (6)	69 (18)		
≥37 years	45 (9)	75 (18)	31 (8)		
Number of children				12.113	.002
≤2	85 (17)	38 (9)	73 (19)		
≥3	15 (3)	62 (15)	27 (7)		
Marital status				2.712	.258
Married	50 (10)	33 (8)	27 (7)		
Not married	50 (10)	67 (16)	73 (19)		
Citizenship				2.986	.225
Swiss	75 (15)	58 (14)	50 (13)		
Non-Swiss	25 (5)	42 (10)	50 (13)		
Migratory background				9.214	.010
Yes	20 (4)	46 (11)	36 (9)		
No	80 (16)	54 (13)	64 (17)		
General health status				2.209	.331
Good or very good	70 (14)	54 (13)	73 (19)		
Mediocre, poor, or very poor	30 (6)	46 (11)	27 (7)		
German language				5.489	.064
First language	95 (19)	67 (16)	81 (21)		
Not first language	5 (1)	33 (8)	19 (5)		
Level of education				9.174	.010
≤Compulsory education	15 (3)	50 (12)	58 (15)		
≥Secondary education	85 (17)	50 (12)	42 (11)		
Employment status				4.602	.100
Employed	65 (13)	33 (8)	42 (11)		
Not employed	35 (7)	67 (16)	58 (15)		

support density and betweenness centrality as predictors. Model 3 consisted of conflict density and betweenness centrality as predictors. The results show that child behavioral problems were predicted by cluster membership when controlling for migratory background (Table 5). Children in the *mixed cluster* (OR = 5.12) and *child-oriented cluster* (OR = 4.29) were more likely to be affected by behavioral problems than children in the *family of orientation cluster*. However, structural features of support and conflict relationships did not predict child behavior problems.

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According to Table 6, children in the *mixed cluster* (OR = 9.86) were more likely to be affected by school-related problems than those in the *child-oriented cluster*. Furthermore, the results indicated that children embedded in personal networks with a high support density were less likely to be affected by school-related problems (OR = 0.29).

8 | DISCUSSION AND IMPLICATIONS

The first hypothesis (H1) predicted that the composition of parents' personal networks is associated with children's behavioral and school-related problems in the context of family interventions. As the results in Tables 5 and 6 show, network composition predicted child behavior and school-related problems. Children embedded in a network from the *mixed* or *child-oriented cluster* are more likely to be affected by behavioral problems than children in the *family of orientation cluster*. Personal networks that belong to the *child-oriented cluster* lack network members beyond the nuclear family unit. Therefore, parents and children might be more isolated than

TABLE 5 Binary logistic regression predicting the odds of child behavior problems.

	Model 1		Model 2		Model 3	
Independent variables	**β (SE)**	**OR**	**β (SE)**	**OR**	**β (SE)**	**OR**
Network Cluster (ref. Family of orientation)						
Mixed	1.63 (0.80)*	5.12				
Child-oriented	1.46 (0.70)*	4.29				
Support density			−0.27 (0.53)	0.76		
Support betweenness centrality			−0.80 (0.56)	0.45		
Conflict density					−0.29 (0.55)	0.75
Conflict betweenness centrality					−0.03 (0.56)	0.97
Migratory background	0.56 (0.62)	1.75	−0.01 (0.56)	0.91	0.09 (0.53)	1.09

Note: $N = 68$. * = $p \leq 0.05$. ** = $p \leq 0.01$.

TABLE 6 Binary logistic regression predicting the odds of children's school-related problems.

	Model 1		Model 2		Model 3	
Independent variables	**β (SE)**	**OR**	**β (SE)**	**OR**	**β (SE)**	**OR**
Network Cluster (ref. Child-oriented)						
Family of orientation	1.08 (0.73)	2.95				
Mixed	2.29 (0.99)*	9.86				
Support density			−1.22 (0.60)*	0.29		
Support betweenness centrality			0.55 (0.63)	1.73		
Conflict density					−0.47 (0.61)	0.63
Conflict betweenness centrality					0.43 (0.63)	1.54
Migratory background	2.23 (0.82)**	9.30	1.72 (0.65)**	5.60	1.49 (0.59)*	4.44

Note: $N = 68$. * = $p \leq 0.05$. ** = $p \leq 0.01$.

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parents in the other two clusters. Parenting may be experienced as an individual responsibility, with very few opportunities for support and relief (Geens et al., 2019). Parents in the *child-oriented cluster* may face less (constructive) criticism of their parenting style and, therefore, have fewer opportunities for reflection and learning (Cochran & Brassard, 1979). Children embedded in the *child-oriented cluster* have fewer opportunities to interact with individuals beyond the nuclear family unit. Therefore, parents are likely to be the main role models shaping children's behavioral patterns and moral concepts (Bandura, 1969). However, the results regarding the *mixed cluster* show that great diversity in network composition does not necessarily prevent children from experiencing behavioral problems. Thus, the structural characteristics of these networks may have explanatory value. Due to the low support density in the *mixed cluster*, children have limited opportunities to interact with network members and benefit directly from the various resources that come with compositional diversity. Low support density is associated with higher structural autonomy for children (Burt, 2001), which could indicate that they do not have sufficient guidance or emotional security. The results also showed that the *mixed cluster* was significantly associated with school-related problems. Research has shown that parents with a higher educational level, as well as networks with a large share of non-kinship ties, are beneficial for children's academic performance (Cochran & Bø, 1988), which are both attributes of the *mixed cluster*. However, the low support density in the *mixed cluster* appears to be a limiting factor for the coordination and use of resources available in the network.

Furthermore, the results indicate that the *family of orientation cluster* is less likely to be associated with behavioral problems than the other two clusters. Personal networks in this cluster consisted mainly of the parents' own parents and siblings, and their children. Hence, children are embedded in both intra- and intergenerational family ties. In such configurations, most network members are interconnected, and support is coordinated in solidarity (Widmer, 2007). Close adult sibling relationships are likely to be characterized by the provision of reliable and strong support (Cicirelli, 1995). Moreover, research has shown that grandparents who are more strongly involved in their grandchildren's lives have positive effects on their well-being in several domains (Dunifon, 2013). Therefore, children embedded in such an environment profit from these stable and reliable ties, which may better protect them from adversities (Coleman, 1988).

According to the second hypothesis of this study (H2), it was predicted that high support density and centrality of parents in support relationships are associated with a lower likelihood of children's behavioral and school-related problems. The only significant association found was that high support density lowered the likelihood of school-related problems. High support density promotes the flow of existing knowledge and skills between network members and is therefore beneficial for the educational growth of children (Coleman, 1988). This finding is in line with other research highlighting the importance of dense patterns of supportive ties surrounding children for better school performance (Wu et al., 2010). However, the high centrality of parents in support relationships did not lower the likelihood of children's behavioral or school-related problems. High centrality was most notably detected in the *mixed cluster*, which was characterized by a high share of friends. Some research points out that instrumental support, in particular, must be reciprocal; otherwise, the relationship may become imbalanced (Harknett & Hartnett, 2011). Vulnerable parents might not activate potential resources in their personal networks because they cannot return the support.

The third hypothesis (H3) predicted that high conflict density and centrality of parents in conflict relationships would increase the likelihood of child behavior and school-related

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problems. However, the results did not support this hypothesis. Conflict density might play a role in light of ambivalence. Ambivalence refers to the simultaneous presence of support and conflict within social ties (Sapin et al., 2016). As the results show, although networks in the *family of orientation cluster* had the highest conflict density, the likelihood of behavioral or school-related problems was not significant. This could be due to the fact that the support density is, on average, also the highest in the *family of orientation cluster*, which stresses the importance of positive ties (Widmer, 2010). No associations were found between the centrality of parents in conflict relationships and children's behavioral or school-related problems. This could indicate that high conflict centrality might have a greater effect on parenting capacities rather than directly affecting their children. Furthermore, children's behavioral problems might be associated more with the specific structural position of children in conflict relationships than that of their parents (Bowen, 1993). The lack of significant associations could also have to do with the operationalization of interpersonal conflicts, which was rather moderate in terms of conflict severity. A certain degree of interpersonal conflict is common in most families as part of normal family life (Widmer, 2010). Considering more severe conflicts in personal networks could better show the connection with externalizing problems of children.

8.1 | Limitations and future directions

This study has some limitations that must be discussed. First, the sample size was small ($N = 70$). Small sample sizes tend not to account for the smaller effects. With a larger sample size, it would have been possible to find more differentiated network clusters and include more predictor variables in the logistic regression models. Second, this study examined the personal networks of only one parent, especially those of the mothers. Hence, these networks do not include all the important relationships among children. Therefore, future research should also focus on children's egocentric networks and give more consideration to those of fathers. Studies in the field of child protection have shown that fathers are often overlooked and judged more negatively than mothers in practice (Zanoni et al., 2013). Third, this study used a rather simple measure of behavior and school-related problems and did not account for children's age. The latter is of central importance to understanding the mechanisms between parents' personal networks and child outcomes. Fourth, due to the rather general operationalization of social support, it was not possible to test whether different types of support have varying effects on children's externalizing problems. In this regard, research on family networks particularly emphasizes the distinction between emotional and instrumental support (Widmer et al., 2013).

9 | CONCLUSIONS

The results of this study indicate that parents' personal networks play an important role in understanding children's behavioral and school-related problems in the context of family interventions. The analysis of the social relationships in which parents and their children are embedded is a core task in the social work profession and science. Social Network Analysis offers flexible and in-depth tools for the visualization and assessment of complex relationship patterns (Tracy & Brown, 2017). It is also open to various definitions of family relationships and can, therefore, be used in different cultural contexts. These tools help parents and children reflect on their personal relationships and enable practitioners to design family interventions

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tailored to specific family contexts. The use of such tools also supports the identification of network members who might be involved in family interventions because they could contribute to the desired changes in family configurations. Moreover, recent research has shown that an analysis of parents' personal networks can be used to measure the effects of family interventions (Fellmann, 2023).

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CONFLICT OF INTEREST STATEMENT

The author has no conflict of interest to declare.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

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