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Support Needs of Surviving Mothers Raising Children After Parental Firearm Homicide in Community: Mixed-Methods Study

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Abstract

Background

An estimated 434,000 United States children experienced parental firearm death during 1999–2020. Yet families' daily circumstances and support needs remain understudied, particularly after Parental Firearm Homicide in Community (PFHIC), defined here as a parent's firearm homicide in a community-violence context. To inform family support, this study examined surviving mothers' caregiving experiences, observations of their children, support needs, and access to assistance, complemented by grandparents' perspectives.

Methods

This mixed-methods study included surveys from 25 mothers in Seattle–King County, Washington (April 23–May 15, 2025), followed by 15 semi-structured interviews with seven of these mothers and eight grandparents (November 2025–February 2026). Closed-ended responses and write-ins were summarized descriptively. Interviews were analyzed using inductive thematic analysis with a collaboratively developed codebook, secondary review of existing coding, and team discussion. Findings were integrated during interpretation, distinguishing accounts by caregiver role.

Results

Sixteen mothers (64%) reported feeling overwhelmed often or almost every day while supporting their child's grief; 19 (76%) reported child behavioral changes; 15 (60%) reported not being able to obtain mental health support for themselves; 19 (76%) reported trouble paying rent or maintaining stable housing; and 19 (76%) reported insufficient community resources. Three themes organized the qualitative findings: grieving while caregiving and carrying the family; children's grief as developmental, emotional, behavioral, and safety-related; and fragmented and short-term systems of support. Mothers' accounts described changing caregiving responsibilities, challenges recognizing and responding to children's distress, and difficulty obtaining support that matched their families' needs. Family relationships, faith, and peer connection provided support alongside continuing unmet needs. Grandparents described mothers maintaining family routines while still needing counseling. They also described supporting children through regular contact and shared activities and helping mothers financially despite limited resources.

Conclusions

This study points to interconnected needs extending beyond individual grief care. These findings provide a mother-centered empirical foundation for developing and evaluating sustained, developmentally

responsive, family-centered support across mental health, schools, practical assistance, and community services. Support planning should also consider the needs and resources of relatives who help mothers care for their children.

Background

Firearm violence affects children and families beyond those directly injured or killed. An estimated 434,000 United States youth experienced parental death due to firearms between 1999 and 2020, with a disproportionate burden among Black youth [1]. This estimate includes firearm deaths across intents and should not be interpreted as a homicide-only estimate. A matched insurance-claims study also associated parental firearm injury with increased psychiatric diagnoses and mental health visits among children [2]. However, most injured parents in that study appeared to survive, distinguishing its population from families experiencing parental-homicide bereavement. A Michigan cohort study also found elevated childhood mortality among children bereaved by parental homicide compared with the general child population; however, it did not isolate firearm homicides in community contexts or establish the children's causes of death [3]. Research on intimate partner femicide and domestic homicide has documented disrupted family relationships, financial strain, caregiving demands, and difficulties obtaining appropriate support [4, 5]. Caregivers may manage their own grief while supporting children's emotional and practical needs, and broader bereavement research highlights their role in children's adjustment [5, 6]. These studies establish that caregiving after homicide warrants attention, but their populations and homicide circumstances differ from those examined here. Less is known about surviving mothers' caregiving experiences and support needs following parental firearm homicide in a community-violence context. Social support is particularly relevant in homicide bereavement. Prior research with African American family members of homicide victims has identified informal and community-based sources of support as important components of coping after homicide, particularly when formal systems do not fully meet survivors' needs [7].

Surviving caregivers occupy a critical but often invisible role. They are often responsible for explaining the death, responding to children's grief reactions, maintaining household stability, interacting with schools, navigating legal or victim service systems, securing mental health care, and preserving a sense of hope for the child [5, 8]. These responsibilities may be compounded by financial strain, housing instability, threats or ongoing safety concerns, and limited access to culturally responsive grief support [7, 8]. Mothers' own support needs therefore warrant direct examination rather than attention only as sources of information about their children.

Understanding this population also requires attention beyond any single service sector. Research in related parental-homicide contexts has described fragmented assistance across mental health, education, legal, and child and family services, underscoring the importance of examining support across institutions [9]. For the present study, this means examining emotional support alongside school-related concerns, housing and financial strain, and the work of finding help. A service-use indicator alone

cannot establish whether assistance was accessible when needed, sufficiently sustained, or responsive to the family's circumstances.

The SPARK Study—Surviving Parental Loss and Resilience in Kids—examined caregivers' experiences after parental firearm homicide. We use parental firearm homicide in community (PFHIC) to describe the death of a parent by firearm homicide in the context of community violence, excluding homicides related to intimate partner or other family violence. These deaths may occur in public or private settings. This paper focuses on surviving mothers' experiences caring for their children after PFHIC, the support they identified as necessary, and their experiences obtaining help. We integrated descriptive survey findings with mothers' interview accounts and grandparents' perspectives on maternal caregiving and the support available to mothers and children.

Methods

Study Design and Timeline

The SPARK Study was conducted through the Center for Firearm Injury Prevention at the University of Washington. We used an explanatory sequential mixed-methods design, collecting survey data from 25 mothers followed by 15 semi-structured interviews with seven mothers and eight grandparents. Quantitative and qualitative analyses proceeded concurrently. All seven interviewed mothers were included in the 25-mother survey sample. The survey characterized mothers' reported experiences and support needs, while interviews provided detailed accounts of caregiving, children's responses, and encounters with support systems. The qualitative and quantitative components were integrated during interpretation to examine how the interviews contextualized the descriptive survey findings [10]. The mother surveys included in this analysis were completed between April 23 and May 15, 2025. Qualitative interviews began in November 2025 and concluded in February 2026. Team-based coding, review, and integration took place from February through September 2026, with regular meetings during this analytic period.

Sample and Recruitment

The broader SPARK Study recruited surviving parents and grandparents of children who had experienced parental firearm homicide. Grandparent interview participants came from families represented in the mother survey sample. Recruitment focused on the Seattle–King County area of Washington. Recruitment used email, text messages, phone calls, and word of mouth. Digital flyers were emailed and texted directly to potentially eligible families and community organizations; they were not posted on social media. The researcher leading recruitment used existing community relationships and contact information maintained through her survivor-support advocacy work to identify and contact potentially eligible families. Word-of-mouth outreach and referrals through affected families and community contacts provided additional recruitment opportunities. Eligibility for mothers included being 21–60

years old and caring for a child or adolescent whose parent had died by firearm homicide within the 2019–2024 eligibility window. The child-age eligibility criterion applied at the time of the survey, rather than at the time of the parental death. Eligibility also required English proficiency. One team member (L.G.) led eligibility screening. Participants' roles as surviving mothers were established during recruitment through the lead recruiter's prior work with families, direct communication with prospective participants, or referrals from affected families familiar with their circumstances. Maternal role was established separately from the REDCap demographic item summarized in Table 1. The community-violence context of the parental firearm homicide, distinct from intimate partner or domestic violence homicide, was established through screening information, familiarity with families' circumstances, and telephone follow-up when clarification was needed.

Survey completers were purposively selected for interviews based on survey completeness and the detail provided in optional written-response fields, with the aim of inviting respondents to elaborate on their experiences. The initial qualitative recruitment target was 15–25 interviews, with approximately equal representation of mothers and grandparents. Recruitment concluded after 15 interviews—seven mothers and eight grandparents—within the planned range, considering participant burden, scheduling demands, and available study resources. Survey participants received a $25 electronic gift card; interview participants received an additional $50 electronic gift card.

L.G. held both research and survivor-support advocacy roles and had pre-existing relationships with some participants. Recruitment and consent emphasized that participation was voluntary and would not affect services or existing relationships. Her community familiarity and advocacy perspective may have influenced disclosure and interpretation; team review of transcripts and analytic memos provided opportunities to examine these interpretations.

Data Collection and Measures

Although parent recruitment was open to both mothers and fathers, the parent survey sample consisted of 25 mothers. Existing recruitment networks provided more direct access to surviving mothers. Few potentially eligible fathers were known through these networks, and attempts to reach them were limited by the lack of direct contact information and difficulties establishing contact.

Survey

The parent survey was administered electronically through REDCap. The final instrument contained 28 numbered items, including closed-ended questions and written follow-up questions. Items addressed mothers' emotional wellbeing and caregiving burden, child-related concerns, school functioning, safety, housing and financial stress, support networks, mental health support, community resources, and future support needs. Selected parent survey questions used in this analysis, including response options, are provided in Additional file 1. Housing and school-support responses were elicited through written follow-

up questions rather than predefined answer categories. These responses were subsequently organized into categories for descriptive summaries and visual displays.

Mothers' written survey responses were categorized for descriptive reporting separately from the thematic analysis of interview transcripts. The quantitative analysis includes mother survey responses only. Mothers were not required to select a single child for all survey responses. Their responses could describe one child or experiences across siblings who had lost a parent. Consequently, the child age recorded at prescreening should not be interpreted as describing every child discussed in subsequent responses. Survey findings represent mothers' reports and should not be interpreted as child-level prevalence estimates.

Qualitative Interviews

The interviewer (L.G.) had completed training in human subjects research and community-engaged and community-based participatory research. L.G. conducted one-on-one, semi-structured interviews via Zoom using a guide with ten core questions and follow-up prompts. The prespecified interview guides covered domains corresponding to those in the surveys. Within each caregiver group, core questions and planned follow-up prompts were consistent across participants and were not tailored to individual survey responses. Selected questions from the mother and grandparent interview guides are provided in Additional file 1.

The guide explored mothers' emotional experiences, caregiving, children's emotional and behavioral responses, safety concerns, school experiences, support networks, financial and housing stress, community resources, and hopes for the future. Grandparent interviews explored their caregiving experiences, their perspectives on surviving mothers' needs, and the support they provided to mothers and children. Recorded sessions lasted approximately 25–62 minutes.

Interviews were scheduled flexibly around participants' caregiving, household, employment, and other responsibilities. Some mothers participated while preparing meals or caring for children, during work breaks, or while attending their children's activities; others arranged time in a room away from other household members. The interviewer accommodated interruptions and participants' available time. These circumstances describe the conditions of participation and were not treated as a separate, systematically measured outcome.

Analytic Strategy

Qualitative Analysis

We used inductive thematic analysis with a collaboratively developed codebook to examine patterns in caregiving experiences and support needs across interviews [11]. Audio-recorded interviews were transcribed for analysis. Transcripts were de-identified before coding by removing names and other

identifying details. The team established tracking spreadsheets and analytic memo documents to organize coding assignments, review, and interpretive decisions.

Qualitative analysis was conducted by three members of the team. Transcripts were divided among team members for initial coding. All transcripts then underwent secondary review of transcripts and codes by another analyst who could see the existing coding and added relevant codes or passages that had been omitted. The team used regular weekly meetings to review interpretations, discuss differences, consider additional codes, and refine the analysis, with interpretive decisions documented in analytic memos. Saturation was agreed on when no new information was garnered from analyzing additional interviews.

The initial codebook was developed inductively from the transcripts, with codes grounded in participants' descriptions and meanings, and applied in Dedoose. Codes addressed grief over time, caregiving strain, child emotional and behavioral responses, safety concerns, changing family roles, support systems, school experiences, and coping. Codes were added when existing categories did not adequately capture an account, and overlapping codes were reviewed and consolidated where appropriate. Related codebook categories were synthesized into three themes addressing maternal caregiving, children's responses, and support systems, with coping and informal support considered across themes. The codebook included material from both caregiver groups, with this paper focusing on maternal caregiving and the support surrounding mothers and children.

Within each theme, the findings distinguish mothers' first-person accounts, grandparents' observations of mothers, and grandparents' own caregiving experiences.

We interpret the qualitative findings in relation to the focused study aim and the relevance and depth of accounts within each caregiver group. The sample may not capture the full range of experiences among mothers or grandparents. Grandparent interviews provide complementary perspectives on the support available to mothers and children.

Quantitative Analysis

Quantitative data were cleaned and organized, and descriptive summaries and visualizations were prepared. Survey responses were summarized using frequencies and percentages. For the question "How often do you feel overwhelmed while trying to support your child's grief?", "often" and "almost every day" responses were combined. Initial housing- and school-support write-in categories were prepared by the quantitative analyst and reviewed by the qualitative analysis team. Each write-in response was assigned one summary category per question.

Categories described reported topics or response status, including support requested or already received. Blank responses, explicit not-applicable responses, and uncertainty were distinguished.

Mixed-Methods Integration

Survey and interview findings were integrated at the domain level during interpretation. Survey findings described the frequency of reported experiences among mothers, while interview accounts contextualized how those needs were experienced. The team considered shared patterns and differences across accounts, distinguishing grandparents' observations of mothers from their firsthand experiences providing support. Integration does not establish statistical associations among individual survey items or outcomes for individual children. Quotations are identified by caregiver role and compared by theme; they are not treated as matched accounts from the same family.

Ethical Considerations

The SPARK Study was reviewed by the University of Washington Human Subjects Division and determined to qualify for exempt status under Category 2(iii) (IRB ID: STUDY00022253). Participants were informed about the study purpose, procedures, potential risks and benefits, voluntary participation, and compensation. They were also informed that their responses would be de-identified and stored securely and that identifying information would not appear in reports, publications, or presentations. Survey participants provided electronic consent through REDCap. Verbal consent was obtained for interview participation and audio recording.

Participation was voluntary, and participants could decline to answer any question, pause the interview, or withdraw at any time.

Survey records in REDCap and exports used for quantitative processing contained identifying information. Access to these data was restricted to authorized study personnel. Transcripts were deidentified before coding, and quotations were presented using participant IDs. When distress arose, the interviewer could pause the conversation, offer supportive listening, and provide information about support resources as needed.

Results

Participant Characteristics

The quantitative sample comprised 25 surviving mothers. The qualitative sample comprised 15 participants: seven mothers and eight grandparents. Among the 25 mother survey respondents, 20 (80%) reported Black or African American race and 21 (84%) reported not Hispanic or Latino ethnicity. Among 24 respondents with age data, mean age was 33.6 years (range, 23–50).

Table 1 summarizes demographic characteristics of the 25 mother survey respondents and the interview participants, with the seven interviewed mothers shown separately as a subset of the survey sample.

Table 1
Demographic characteristics of survey and interview participants

Characteristic	Mother survey respondents (n = 25)	Mother interview participants (n = 7)	Grandparent interview participants (n = 8)
Age, years, mean (range)	33.6 (23–50)	37.3 (33–48)	Not collected
Sex			
Female	24 (96%)	6 (85.7%)	7 (87.5%)
Male	0 (0%)	0 (0%)	1 (12.5%)
Not reported	1 (4%)	1 (14.3%)	0 (0%)
Race			
Black or African American	20 (80%)	6 (85.7%)	7 (87.5%)
Asian	0 (0%)	0 (0%)	1 (12.5%)
White	1 (4%)	0 (0%)	0 (0%)
More than one race	4 (16%)	1 (14.3%)	0 (0%)
Ethnicity			
Hispanic or Latino	2 (8%)	0 (0%)	0 (0%)
Not Hispanic or Latino	21 (84%)	6 (85.7%)	6 (75%)
Unknown/not reported	2 (8%)	1 (14.3%)	2 (25%)

Note. Demographic characteristics were self-reported. Values are *n* (%) unless otherwise indicated. Age data were available for 24 of the 25 mother survey respondents. Grandparent age was not collected. Grandparent characteristics describe only eight interview participants. Participants were identified as mothers through recruitment information; one participant did not answer the demographic item summarized under sex in Table 1 on the REDCap consent form.

Quantitative Findings

Across domains, reported needs extended beyond grief and emotional support to children's functioning, housing stability, and access to services. Sixteen of 25 mothers (64%) reported feeling overwhelmed often or almost every day while supporting their children's grief, and 16 (64%) reported insufficient emotional support from family or friends (Fig. 1). Nineteen mothers (76%) reported witnessing behavioral changes in their children, 12 (48%) reported school focus or performance difficulties, and 15 (60%) reported additional major loss or trauma affecting their children (Fig. 1). These are mother-level reports that could concern one or more eligible children.

Fifteen mothers (60%) reported not being able to obtain mental health support for themselves. Nineteen (76%) reported trouble paying rent or maintaining stable housing, and 19 (76%) reported insufficient community resources for families like theirs (Fig. 1). Figure 1 percentages used all 25 mothers as the denominator.

Bars show the number and percentage of mothers reporting each indicator. Overwhelm combines “often” and “almost every day.” Other indicators reflect yes/no responses, with “no” indicating insufficient emotional support, inability to obtain mental health support for oneself, or insufficient community resources. Child-related responses may concern more than one child and are not child-level prevalence estimates. Indicators are separate and do not establish that the same mothers reported every experience.

Among the 20 included housing-support responses, 16 responses (80%) were categorized as financial assistance, three (15%) as household supplies or basic needs, and one (5%) as housing placement (Fig. 2A). Among the 20 included school or learning support responses, tutoring or academic support (6/20; 30%) and counseling or mental health support (5/20; 25%) were the most frequent categories (Fig. 2B). These categories summarize response content and do not necessarily indicate unmet needs.

Financial assistance includes rent, utilities, bills, food, or financial services; household supplies or basic needs includes household goods, clothing, or water; housing placement describes help obtaining housing.

Tutoring or academic support includes tutoring, mentoring, or an individualized education program; counseling or mental health support includes school counseling or trained counselors; practical or administrative support includes school lunch or administrative assistance; and positive school experiences includes positive functioning or helpful schools.

Each panel includes 20 of 25 mothers, with one category per included response. Labels show the response count, denominator, and percentage. Housing excludes four blank responses and one response entered by the participant as “n/a.” School or learning support excludes four participant-entered “N/A” responses (with variations in capitalization and punctuation) and one response indicating that the child was too young for school.

Categories summarize requested or existing support, positive experiences, concerns, or uncertainty; they do not necessarily indicate unmet needs. These write-ins are distinct from the closed-ended indicators in Fig. 1.

Qualitative Findings

Qualitative interviews provided additional context for understanding how the needs identified in the survey unfolded in families’ everyday lives. Across interviews, mothers described grief as intertwined with expanded caregiving responsibilities, children’s changing developmental and emotional responses, persistent concerns about safety, and difficulty obtaining sustained support. Three overarching themes

were identified: (1) grieving while caregiving and carrying the family; (2) children's grief as developmental, emotional, behavioral, and safety-related; and (3) fragmented and short-term systems of support. Resilience and informal support emerged across all three themes. Mothers' accounts and grandparents' perspectives are presented separately within each theme. Grandparents described their roles in supporting mothers and children within these themes, including emotional support, shared caregiving, and practical assistance.

Theme 1: Grieving While Caregiving and Carrying the Family

Mothers described the aftermath of PFHIC as a period in which grief occurred alongside substantially increased caregiving responsibility. Participants were not only mourning the person who died; they were also managing children's grief, maintaining household routines, responding to emotional and behavioral changes, navigating financial responsibilities, and working to maintain stability in the absence of the deceased parent. Some mothers described suppressing or postponing their own emotional needs while caregiving. Participants described exhaustion, emotional distress, limited opportunities for self-care, and pressure to appear strong for children even when they themselves were struggling. One mother described the loss of a partnership and the responsibilities she now carried: "*I became two people, and so emotionally, it's draining. I'm completely drained. I'm tired most of the time*." — Mother Participant 2

Limited space for personal grief also appeared in another mother's account: *"Honestly, I do not have time to take care of myself, and I'm so busy. … I barely have the time to… notice how I feel about anything.*" — Mother Participant 15

Another mother described a shift from suppressing her emotions when her son was younger after the death to discussing grief more openly as he grew older: "*[B]efore it was like, I would have to, like, suppress my emotions … But now that he's older … it's easier for me to, like, talk about it with him.*" — Mother Participant 13

These accounts contextualize the survey finding that 16 of 25 mothers (64%) reported feeling overwhelmed often or almost every day while supporting their child's grief.

Grandparents were also asked how surviving mothers were coping with grief while caring for their children. One grandparent described shared family grieving: "*We come together, we do things, we cry … but then we laugh.*" — Grandparent Participant 12

The same grandparent described the mother appearing to "*Keep everything together*," while also identifying a continuing need for counseling for her. This account illustrates how family connection could coexist with unmet grief-related needs, adding context to the survey finding that 16 of 25 mothers (64%) reported insufficient emotional support from family or friends.

Another grandparent described a surviving mother who "*puts their grief first before hers, and she tries to actually hide hers, just to protect the kids*." — Grandparent Participant 11

Theme 2: Children's Grief as Developmental, Emotional, Behavioral, and Safety-Related

Mothers described children's grief as multidimensional and often changing over time. Children did not always communicate grief directly through sadness or verbal discussion of the deceased parent. Instead, caregivers described anger, withdrawal, emotional dysregulation, isolation, repeated questions, school difficulties, and other behavioral changes.

One mother described difficulty talking with her daughter about the loss: "*she's going through an angry stage where she doesn't like to hear about her dad, or anything about her dad.*" — Mother Participant 3

Another mother described changes at school: "*I saw an increase in, like, his… his behaviors at school. … it was more frequent. It was more violent. You know, he was more aggressive.*" — Mother Participant 15

Quantitative findings similarly showed that 76% of mothers reported child behavioral changes following the loss.

Participants also described grief as developmental rather than static. Children revisited and reinterpreted the loss as they grew older, reached new developmental stages, encountered reminders of the deceased parent, or became increasingly able to understand the meaning and permanence of the death. Some compared themselves with peers who still had living parents, sought information or memories about the deceased parent, or looked to surviving adults for connection with the role the deceased parent had occupied.

For some families, grief became inseparable from safety concerns. Caregivers described changes after the homicide in how they and their children understood danger, protection, and the possibility of additional loss. Families described hypervigilance, fear of separation, continued exposure to community violence, concerns about future violence, and efforts by caregivers to create more protective environments. In some families, children sought a new protective or parental figure after the death. These experiences occurred within a broader context of adversity: 60% of mothers reported additional major loss or trauma affecting their children, while 48% reported school focus or performance difficulties.

Participants described:

"*Now that he's, like, older… he can better, like, express his emotions… because before he would, like, be very angry at certain times or very sad… You'll still hear him say, 'Oh, I wish my dad was here.'*" — Mother Participant 13

Limited verbal expression did not necessarily indicate an absence of grief. Mothers described recognizing distress through withdrawal, changes in behavior, and moments when children became less

communicative. These accounts were interpreted as difficulties observing or discussing grief; they did not, by themselves, establish that children were deliberately concealing grief to protect adults.

"*He's not, like, really, like his bubbly self… he's, like, real shut down… Then he'll start talking… 'Oh yeah, I just missed my dad a lot right now.'*" — Mother Participant 13

Mothers' accounts also included severe distress. One mother said that her child "*was even suicidal*" (Mother Participant 2). Another mother reported an attempt (Mother Participant 8): "*My daughter, like, she tried to kill herself, like, a few weeks ago*." These were caregiver-reported experiences rather than independently assessed clinical outcomes. They illustrate concerns not fully captured by a general survey item about behavioral change.

Grandparents' perspectives. Participant 14, a grandfather, described regular calls and shared activities with his grandchild, alongside the mother's continuing role in protecting and caring for the child. He explained that "*he's trying to look for another father figure in me*." Participants 12 and 14 also described positive school experiences while identifying a need for more grief-related school support. Their accounts suggest that supportive relationships and positive experiences at school could coexist with continuing grief-related needs.

Theme 3: Fragmented and Short-Term Systems of Support

Mothers described a mismatch between the duration of family needs and the duration or accessibility of formal support. Mothers identified needs for mental health care, school-based support, financial and housing assistance, peer support, transportation, victim services, childcare, and help navigating available resources. However, participants described not knowing where to go, encountering limited services, struggling with cost or time, or finding that assistance was concentrated around the immediate aftermath of the homicide rather than the months and years that followed.

One mother described limited financial assistance: "*Yeah, they don't have a lot of resources at all for, like, utility assistance, or helping with rent*." — Mother Participant 15

Another mother described the limits of immediate assistance: "*there's always that support for right then and there, like, oh, you know, victims comp and things like that. But it's like, that only gets us through that part*." — Mother Participant 13

Survey findings reflected these gaps. Sixty percent of mothers reported that they had not been able to obtain mental health support for themselves following the loss, 76% reported trouble paying rent or maintaining stable housing, and 76% reported that there were not enough community resources to support families like theirs.

Qualitative interviews demonstrated that these were not isolated service gaps. Participants described a broader post-homicide support cliff in which families remained responsible for managing grief, children's changing developmental needs, school problems, safety concerns, and economic disruption after

immediate crisis supports had ended. Schools and community systems were described as important potential sources of support, but access and responsiveness varied considerably.

Participants also emphasized the value of trusted and culturally relevant support. Family members, peers with similar lived experiences, faith communities, and community-based organizations sometimes provided forms of connection that formal systems did not. These protective resources helped families continue functioning, but they did not eliminate the need for sustained professional and structural support.

"*The only community resources support is RISE. Did nobody else reach out to me*?"— Mother Participant 2

Experiences of support were not uniformly negative. One mother described improvement in her child's school engagement alongside support from school staff and peers, while continuing to identify a need for more tailored mentorship. This account distinguishes access to some helpful support from having all support needs met.

Grandparents' perspectives. Grandparent Participant 14 described helping the surviving mother with bills despite his own limited finances: "*I can barely make it myself, you know, but I'm just gonna support my daughter regardless.*" He also identified the mother's transportation difficulties and need for household assistance. Participant 12 described family as the main source of support but found prior family counseling unhelpful and continued to want therapy. These accounts show the limits of informal assistance when relatives also face financial pressures or cannot obtain suitable grief support.

Another grandparent identified an access barrier: "*The counseling is difficult because you need insurance most times*." — Grandparent Participant 7

Grandparents differed in the resources they could offer. Participant 10 described available financial and transportation help, although family members did not always ask for assistance.

Cross-Cutting Role of Resilience and Informal Support

Across the themes, mothers described family relationships, faith, peer connection, memories of the deceased parent, and hopes for their children as sources of support. These accounts provided an important counterpoint to descriptions of burden and unmet need. Supportive relationships and continuing difficulties could coexist; the presence of informal support did not necessarily mean that practical or service-related needs had been met. In their own accounts, grandparents described shared remembrance, regular contact with children, and practical assistance to mothers, sometimes while managing financial pressures of their own.

Mixed-Methods Integration

The joint display (Table 2) aligns mother survey indicators with mother and grandparent quotations and an integrated interpretation for each theme [10, 12]. The qualitative findings also added distinctions that the survey indicators did not capture, including changes in how mothers communicated about grief and

the coexistence of helpful assistance with continuing unmet needs. Grandparents' accounts of providing support and facing resource constraints offer a complementary perspective on why reported unmet needs can persist despite family involvement: relatives may provide regular care and practical help while having limited resources themselves.

Table 2
Integrated mixed-methods findings

Mother survey findings (*N* = 25)	**Mother interview accounts (*n* = 7)**	**Grandparent interview accounts (*n* = 8)**
Grieving while caregiving and carrying the family		
"How often do you feel overwhelmed while trying to support your child's grief?" **Often or almost every day: 16/25 (64%).** "Do you feel like you have enough emotional support from family or friends?" **No: 16/25 (64%).**	Some mothers described expanded parenting and household responsibilities while managing their own grief. Accounts included both suppressing emotions and developing more open communication. "*I became two people, and so emotionally, it's draining. I'm completely drained*."— Mother Participant 2	Grandparent P12 described the mother maintaining family routines while still needing counseling. Grandparent: "*she just seems to… Keep everything together*." — Participant 12
Integrated interpretation: Mothers may maintain family routines while still needing support for their own grief.		
Children's grief as developmental, emotional, behavioral, and safety-related		
"Has your child's behavior changed since the loss?" **Yes: 19/25 (76%).** "Since the loss, has your child had trouble focusing or performing in school?" **Yes: 12/25 (48%).** "Besides losing their parent, has your child experienced other major losses or traumatic events?" **Yes: 15/25 (60%).**	Mothers described changing expressions of grief, withdrawal, anger, school-related difficulties, and concerns about safety. These accounts add context to broad survey indicators. "*Now that he's, like, older… he can better, like, express his emotions…*"— Mother Participant 13	Grandparent P14 described regular contact with the child and a father-figure role. P12 and P14 described positive school experiences alongside unmet grief-support needs. Grandparent: "*he's trying to look for another father figure in me*" — Participant 14
Integrated interpretation: Children's grief and behavioral difficulties can occur alongside supportive relationships and positive school experiences.		
Fragmented and short-term systems of support		
"Have you been able to get mental health	Mothers described navigation demands and support that did not	Grandparent P14 helped the mother with bills despite his
Integrated interpretation: Practical help from relatives can coexist with unmet material needs, particularly when relatives face financial pressures themselves.		

Mother survey findings (*N* = 25)	Mother interview accounts (*n* = 7)	Grandparent interview accounts (*n* = 8)
Grieving while caregiving and carrying the family		
support for yourself since the loss?" **No: 15/25 (60%).** "Since the loss, have you had trouble paying for rent or keeping stable housing?" **Yes: 19/25 (76%).** "Do you feel like there are enough community resources to support families like yours?" **No: 19/25 (76%).**	always match the timing or breadth of family needs. Helpful assistance and continuing unmet needs could coexist. "*After the smoke clears, after the shot is fired, you need people thinking of the after*"— Mother Participant 13	own limited resources. Grandparent: "*I can barely make it myself, you know, but I'm just gonna support my daughter regardless*" — Participant 14
Integrated interpretation: Practical help from relatives can coexist with unmet material needs, particularly when relatives face financial pressures themselves.		

Note

Survey findings describe 25 mothers; the interview sample includes seven mothers and eight grandparents. Quotations are compared by theme and do not represent matched family pairs.

Discussion

This mixed-methods analysis describes interconnected support needs among surviving mothers recruited in the Seattle–King County area of Washington who were raising children after PFHIC. Mothers reported emotional burden, practical difficulties, concerns about their children, and challenges obtaining support. Interview accounts contextualized these findings by describing the work of grieving while caregiving, responding to children's changing needs, and navigating assistance that did not always match family circumstances. Grandparents described providing care and practical help while facing financial pressures and difficulty finding suitable grief support. These accounts indicate that family involvement alone may not meet mothers' and children's grief-related needs. Services should offer accessible, culturally responsive grief support that complements family relationships and respects mothers' preferences.

These findings extend earlier research on caregiving after intimate partner femicide and domestic homicide [4, 5]. The contribution of this analysis lies in its focus on surviving mothers after PFHIC and its integration of descriptive support-needs findings with accounts of everyday caregiving. Differences in

homicide circumstances, caregiver relationships, geography, and service systems should be considered when comparing findings across studies.

Mothers' retrospective accounts described needs that continued or changed after the immediate aftermath. These accounts should not be interpreted as longitudinal measurements of change. Nevertheless, they identify questions about the timing and continuity of support that warrant prospective investigation. Research with school-shooting survivors has similarly emphasized the value of examining broader consequences and longer timeframes, while research with professionals serving children after parental intimate partner homicide has described difficulties coordinating support across agencies [9, 13]. These studies provide related perspectives, not direct evidence about the effectiveness of services for the SPARK participants.

The findings also situate post-homicide family support within the broader continuum of injury prevention. Caregivers described ongoing safety concerns, exposure to additional violence, emotional and behavioral distress, housing difficulties, and challenges navigating services after the homicide. Although this study did not evaluate whether specific supports prevent subsequent injury or violence, the findings identify family-level conditions and service gaps that warrant examination as part of comprehensive firearm-injury prevention and post-injury response.

Implications for Practice

Mothers' accounts identify several domains for service development and evaluation: support for caregivers' own grief and emotional wellbeing; assistance recognizing and responding to children's changing needs; communication with schools; and help navigating practical resources and available services. Participants' descriptions also point to the importance of whether support feels relevant, trustworthy, and responsive to their family circumstances. Service planning should consider the relatives who help mothers care for their children, with mothers' preferences guiding their involvement. Assessing these relatives' practical and emotional needs may help identify limits to the support available within the family.

These findings do not establish that any particular service model improves outcomes. They provide participant-informed questions for future implementation research, including whether families can access assistance when needed, whether services continue beyond initial contact, and whether caregivers experience support as coordinated and appropriate.

Implications for Policy

Policies addressing firearm violence should explicitly include the needs of children and surviving caregivers affected by PFHIC. Funding streams for violence prevention, victim services, and community healing should support longitudinal care coordination for children and families who lose parents to homicide rather than solely crisis intervention or short-term assistance. Eligibility and funding structures

should recognize that needs created by parental homicide may emerge, recur, or intensify well beyond the immediate aftermath of the death, particularly as children enter new developmental stages [8, 9].

Strengths, Limitations, and Future Research

This study integrated descriptive survey findings with detailed accounts of everyday caregiving from surviving mothers and grandparents. Grandparents' perspectives added insight into the support available to mothers and the constraints experienced by relatives providing it. Established survivor-community relationships supported engagement and may have facilitated discussion of sensitive experiences, while flexible scheduling accommodated participants' responsibilities. Inductive codebook development, secondary review of existing coding, regular team discussion, and analytic memos supported a collaborative, documented interpretation process.

The small, nonprobability sample recruited through survivor-community networks and referrals does not support population-level estimates of support needs. Experiences may differ among families outside these networks or in settings with different service systems. Interview selection prioritized survey completeness and detailed written responses, potentially underrepresenting caregivers with less time, opportunity, or willingness to elaborate. Existing relationships with research personnel may have influenced participation, disclosure, and interpretation. Recruitment and consent emphasized voluntary participation without consequences for services or existing relationships. Team review and analytic memos supported examination of interpretations, although these safeguards do not eliminate selection bias or relationship-related influences.

Child-related findings reflect caregiver reports rather than direct child assessments. Mothers were not required to select a single eligible child, so responses may encompass siblings and cannot be interpreted as separate child-level observations or prevalence estimates. Differences in child age at the homicide and time since death were not examined. Survey items were descriptive rather than diagnostic, and the behavioral-change item did not distinguish bereavement-related changes from other developmental or contextual changes. Team-reviewed write-in categories were developed from responses and reflect analytic judgments rather than predefined options. Blank responses, participant-entered "N/A," and uncertainty were distinguished; however, reasons for nonresponse were not independently established, and these responses do not necessarily indicate absence of need. Service-related findings describe participants' experiences and perceptions rather than independently assessed availability or quality.

Participation occurred alongside caregiving, household, and employment responsibilities. Scheduling flexibility and accommodation of interruptions supported participation, but interruptions, differing opportunities for sustained attention, and others' presence may have affected response detail or privacy. These circumstances were not systematically quantified and do not establish that any response was inaccurate. Survey-completion circumstances and assistance from others were not independently verified.

Retrospective accounts, without repeated outcome measurements or a comparison group, cannot establish developmental trajectories, causal effects of the homicide, or service effectiveness and may be affected by recall. The seven mother and eight grandparent interviews may not capture the full range of experiences within either group. Grandparents' observations of mothers may reflect incomplete knowledge and family relationships; they remain distinct from mothers' first-person accounts and grandparents' own caregiving experiences. Accounts were distinguished by caregiver role and were not treated as matched family pairs or assumed to represent independent families.

Despite these limitations, the study provides detailed accounts of caregiving and support experiences among participating families in Seattle–King County and identifies priorities for research and service development. Future research should follow families prospectively, distinguish age at loss from developmental stage at assessment, and examine changing support needs and service experiences. Children's and adolescents' perspectives should be included when ethically appropriate. Comparing mothers' and grandparents' accounts within families requires consent and documented family links. Larger, more diverse studies should examine how social and service-system conditions shape access to support and develop and evaluate family-centered services responsive to affected families' priorities.

Conclusion

Surviving mothers recruited in the Seattle–King County area described caregiving after PFHIC as involving interconnected emotional, child-related, practical, and service-navigation needs. The mixed-methods findings provide context for understanding how these needs are experienced and identify priorities for further investigation and service development.

Mothers also described supportive relationships, faith, peer connection, and hopes for their children alongside continuing difficulties. Future research and service evaluation should examine how assistance can respond to both caregivers' and children's needs over time, without assuming that informal support alone is sufficient or that a single service model fits every family. Grandparents helped sustain caregiving and provided practical assistance while facing constraints of their own. Support for mothers and children should therefore address both unmet service needs and the capacity of relatives to continue providing help.

Declarations

Ethics approval and consent to participate

The University of Washington Human Subjects Division determined that the SPARK Study qualified for exempt status under Category 2(iii) (STUDY00022253). Survey participants provided electronic consent through REDCap. Verbal consent was obtained for interview participation and audio recording. Participation was voluntary, and participants could decline questions or withdraw at any time.

Consent for publication

Not applicable. The manuscript reports aggregate survey findings and deidentified interview quotations without identifying participant information. Participants provided informed consent to participate and were informed through written and verbal consent procedures that identifying information would not appear in reports, publications, or presentations.

Availability of data and materials

Individual-level survey data and interview transcripts are not publicly available because they contain sensitive information that could permit identification of participants or family members.

Competing interests

The authors declare that they have no financial or nonfinancial competing interests.

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Authors' contributions

L.G. coordinated the study, led recruitment and eligibility screening, conducted interviews, contributed to qualitative analysis and interpretation, and drafted and revised the manuscript. A.M. deidentified interview transcripts and contributed to qualitative analysis. E.L.Q. supervised the qualitative and quantitative analysis and interpretation. S.B. cleaned and organized the quantitative data and prepared descriptive summaries and visualizations. A.R.R. provided overall study oversight and supervised research design, implementation, and adherence to ethical standards. All authors contributed to the interpretation of findings and critically reviewed and revised the manuscript. All authors read and approved the final manuscript.

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References

1. Schlüter BS, Alburez-Gutierrez D, Bibbins-Domingo K, Alexander MJ, Kiang MV. Youth experiencing parental death due to drug poisoning and firearm violence in the US, 1999–2020. JAMA. 2024;331(20):1741–7. https://doi.org/10.1001/jama.2024.8391.

2. Karandinos G, Giuriato M, Zubizarreta JR, Koh KA, Masiakos PT, Song Z, et al. Mental health outcomes in children after parental firearm injury. N Engl J Med. 2026;394(5):475–85. https://doi.org/10.1056/NEJMsa2502702.
3. McCabe SE, Kcomt L, Evans-Polce RJ, Radford G, Tennant SD, Hulsey E, et al. Childhood mortality by parental cause of death. JAMA Netw Open. 2026;9(3):e262790. https://doi.org/10.1001/jamanetworkopen.2026.2790.
4. Hardesty JL, Campbell JC, McFarlane JM, Lewandowski LA. How children and their caregivers adjust after intimate partner femicide. J Fam Issues. 2008;29(1):100–24. https://doi.org/10.1177/0192513X07307845.
5. Alisic E, Groot A, Snetselaar H, Stroeken T. Raising a child bereaved by domestic homicide: Caregivers' experiences. Eur J Psychotraumatol. 2025;16(1):2463277. https://doi.org/10.1080/20008066.2025.2463277.
6. Alvis L, Zhang N, Sandler IN, Kaplow JB. Developmental manifestations of grief in children and adolescents: Caregivers as key grief facilitators. J Child Adolesc Trauma. 2023;16(2):447–57. https://doi.org/10.1007/s40653-021-00435-0.
7. Sharpe TL. Sources of support for African-American family members of homicide victims. J Ethn Cult Divers Soc Work. 2008;17(2):197–216. https://doi.org/10.1080/15313200801947231.
8. Kurdi Z, Devaney J, Houghton C, Eastwood O, Frederick J, Joy K, et al. Applying a socio-ecological model to understanding the needs of children and young people bereaved by intimate partner homicide across their life course. J Fam Violence. 2026;41(3):537–58. https://doi.org/10.1007/s10896-024-00721-z.
9. Chung I, Marinkovic Chávez K, Kurdi Z, Frederick J, Eastwood O, Sakthiakumaran A, et al. Fragmented and frustrating: Professionals' experiences navigating the service system for children who have lost a parent to intimate partner homicide. J Fam Violence. 2026. https://doi.org/10.1007/s10896-026-01180-4. Advance online publication.
10. Fetters MD, Curry LA, Creswell JW. Achieving integration in mixed methods designs—Principles and practices. Health Serv Res. 2013;48(6 Pt 2):2134–56. https://doi.org/10.1111/1475-6773.12117.
11. Braun V, Clarke V. Using thematic analysis in psychology. Qual Res Psychol. 2006;3(2):77–101. https://doi.org/10.1191/1478088706qp063oa.
12. Guetterman TC, Fetters MD, Creswell JW. Integrating quantitative and qualitative results in health science mixed methods research through joint displays. Ann Fam Med. 2015;13(6):554–61. https://doi.org/10.1370/afm.1865.
13. Rencken CA, Conrick K, Rhew IC, Davis CA, Rowhani-Rahbar A. Survivor perspectives on research priorities for assessing mental health outcomes after school shootings: A qualitative study. Inj Epidemiol. 2025;12:15. https://doi.org/10.1186/s40621-025-00570-4.

Figures

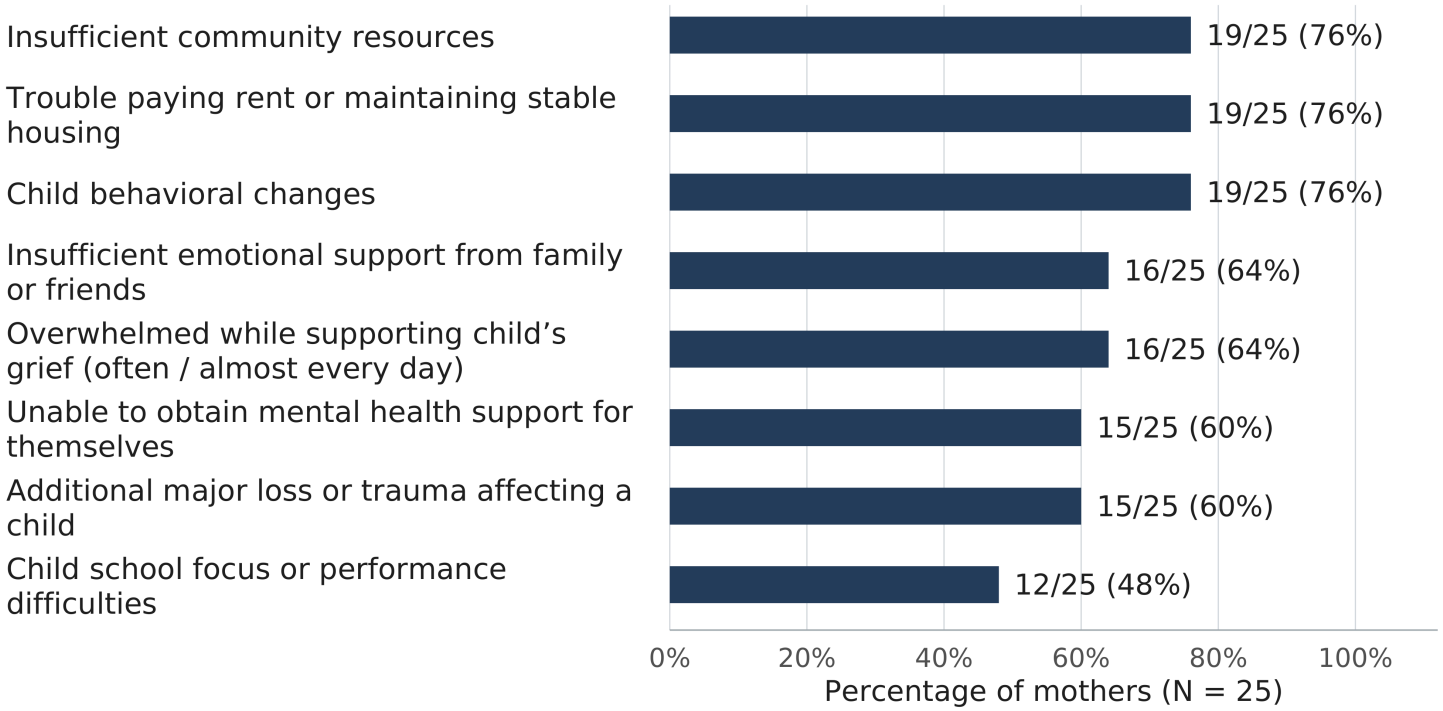


Figure 1

Mother-reported experiences and support barriers (*N* = 25).

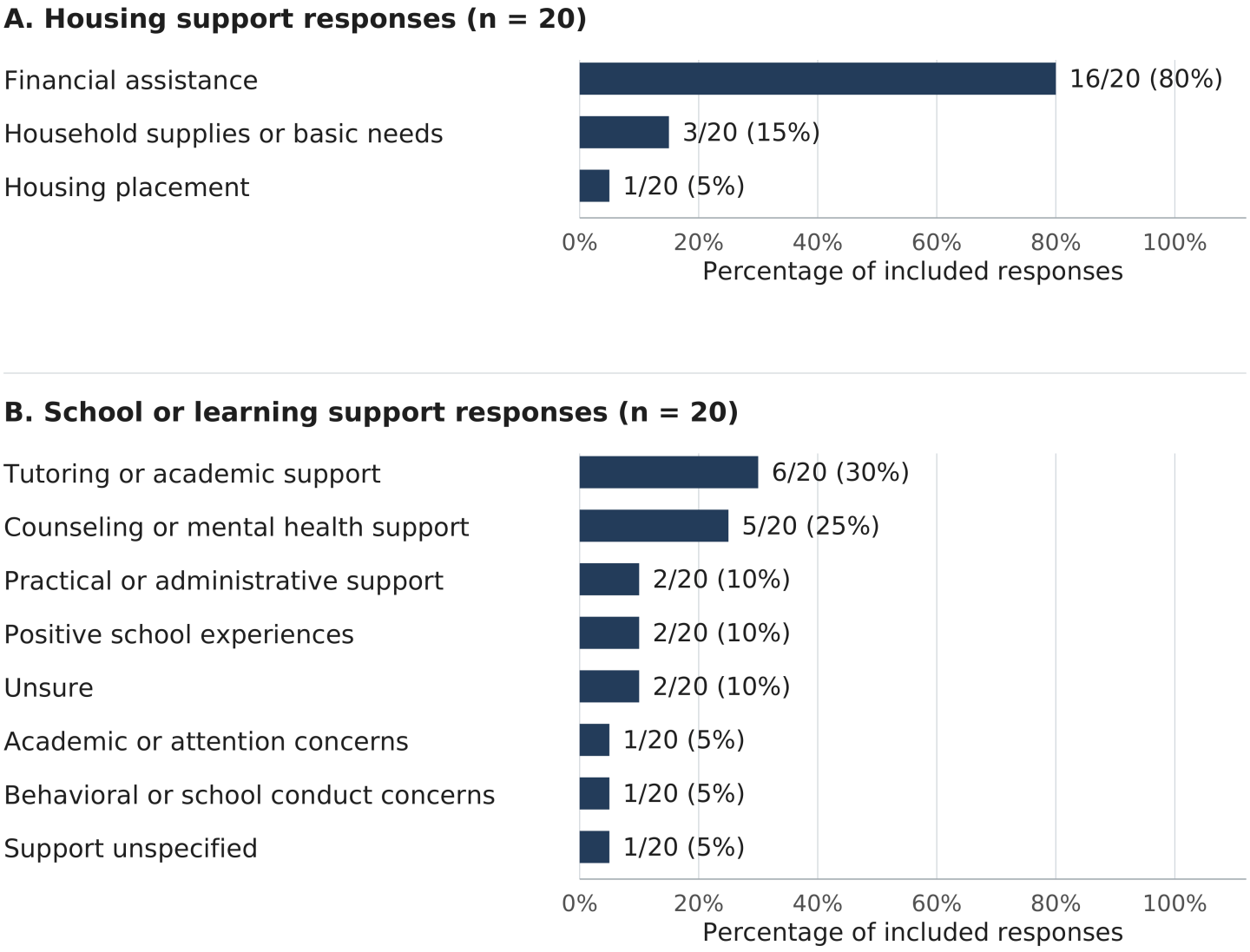


Figure 2

Housing (A) and school or learning support (B) responses.

Supplementary Files

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- Additionalfile1Selectedsurveyandinterviewquestions.docx