Published in final edited form as:

Child Care Health Dev. 2017 March ; 43(2): 192–201. doi:10.1111/cch.12384.

Does caregiver participation in decision making within child welfare agencies influence children's primary and mental health care service use?

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Abstract

Background—Many children in contact with child welfare agencies do not receive needed health services. These agencies have used participatory decision making (PDM) practices as a way to increase families' use of recommended services. However, we lack evidence of whether caregiver participation in PDM increases children's use of health services. This study uses a national sample of children involved with child welfare to compare their health service use between those children serve through a PDM practice and those who did not experience it.

Methods—Cross-sectional analyses using the 2009-2010 National Survey of Child and Adolescent Well-Being. Propensity score analysis accounted for observed selection bias. PDM practice was measured as whether the caregiver was included in decision-making during service planning meetings. Health service use was measured as child's receipt of any primary or mental health care services in the past year. Primary health care need was measured using standardized measures and caseworker report. The sample was comprised of children ages 2–17 with primary or mental health needs in contact with a child welfare agency.

Results—In the unmatched sample of 1,358 children, 14% were served through a PDM service practice, and 12% had a primary health care and 37% a mental health need. Families served through PDM were also reported by caseworkers as more cooperative during the child welfare

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Conflict of interest statement: We confirm that there are no known conflicts of interests related to financial or nonfinancial associations.

investigation, and with fewer reports of domestic violence and agency re-referrals ($p < 0.05$). Analyses using matched samples showed that for primary health care, 59% of PDM children received services compared to 40% for non-PDM children ($p = 0.004$). Group differences were not significant for mental health services.

Conclusions—Lower-risk families were more likely to be served through PDM which was positively associated with child use of primary health services. Inclusion of caregivers in decision making may not be sufficient to overcome barriers to children's mental health service use.

Keywords

child mental health; child welfare; shared decision making; propensity score analysis

Introduction

In the United States, it is the core mission of Child Protective Service (CPS) agencies to facilitate or provide services for disadvantage families as a way to ensure children's safety and wellbeing (Child Welfare Information Gateway., 2008). Those services include primary and mental health care for children. Despite CPS agency efforts, many children with health care needs do not receive services during their involvement with the agency (Bai, Wells, & Hillemeier, 2009; Burns et al., 2010; Hurlburt et al., 2004; Leslie et al., 2005; Simms, Dubowitz, & Szilagyi, 2000).

Research on families involved with CPS agencies indicates that only over half of children identified with a mental health need receive services (Dolan, Casanuevas, Smith, Lloyd, & Ringeisen, 2012; Mennen & Trickett, 2007), and between 16% and 55% receive primary health care services such as required immunizations or periodic visits to the dentist (Blatt et al., 1997; Kortenkamp, 2002). Evidence of unmet health needs among children in contact with a CPS agency is troublesome as many families rely on the support of CPS agencies to access the services that are needed for children to thrive and be healthy.

In response to this evidence and to public and political pressures to increase service engagement, many CPS agencies have implemented family-centered services practices aimed at actively involving caregivers in decision making during service planning meetings. Caregivers who have more opportunities to share their family's values, strengths and what they perceive to be their child's service needs with professionals before decisions are made may have a higher investment and support to those decisions (Burford & Hudson, 2000), including the use of health services for their children.

In addition, caregivers play a key role in the agency's efforts to meet children's health care needs as the latter rely on the adult's advocacy and support efforts to ensure service use. In addition, caregivers' service participation is important in the child welfare context because they are “active participants in the service experience and largely responsible for the changes sought by the agency” (Patti, 2000, p. 15).

Specific family-centered practices implemented by CPS agencies include Family Group Decision-Making (FGDM), Family Team Conferencing, and the Unity Model. Although

different in how they structure the service process with families, these practices (called participatory decision making or PDM thereafter) are designed to include case planning in anchor with caregivers' input on how to solve their problems based on the family's values, culture and needs (Merkel-Holguin, 2004). PDM service practices are considered good practices for family engagement in the child welfare system (Merkel-Holguin, Nixon, & Burford, 2003). These practices are in contrast to standard CPS procedures that include conferring with caregivers but not necessarily with the extent of following family-driven service planning practices (Child Welfare Information Gateway., 2008).

Despite some evidence of an association between PDM practices and positive changes in services closely related to child welfare such as fewer out-of-home placements for children (Gunderson, Cahn, & Wirth, 2003; Pennell, 2006), we still lack information on the influence of these practices on child outcomes (Crampton, 2007), including child use of primary and mental health care services when needed. A lack of evidence on whether these practices are suitable for meetings the needs of families with health care needs may reduce service practice uptake among CPS agencies.

This study uses a national sample of children involved with child welfare to compare health service use between those children serve through a PDM service practice and those who did not experience it. The authors address limitations from previous research by using a national sample of families served by CPS agencies, focusing on the majority (90%) of children involved with a CPS agency who remained with their caregivers (US Department of Health and Human Services., 2005). In addition, this study accounts for individual health need, includes child self-reported and caregiver measures, and examines primary and mental health care service use as separate outcomes of interest. The authors hypothesize that caregiver participation in a PDM service practice during service planning meetings will increase their child's use of primary and mental health care services when needed.

Methods

Data Source

All analyses in this study used data from the 2009-2010 National Survey of Child Adolescent Well-being (NSCAW). NSCAW was sponsored by the US Department of Health and Human Services and it is the first national survey of children involved with child welfare agencies that included measures of CPS agency practices and characteristics as well as child and caregiver primary care, social, and psychological health (Dowd, 2010; Waldfogel, 2000). The NSCAW survey's sampling frame was implemented as a two-stage stratified sample design. The first stage was comprised of geographic regions called sampling strata and primary sampling units (PSUs). PSUs covered the population served by a CPS agency. PSUs were then used for the second stage as sampling frames for the random selection of children into the NSCAW sample.

Study sample

From the full NSCAW sample (n=5,871), the analytical sample for the regression model measuring primary health care service use was restricted to children ages 10 and younger

(n=1,591). For these young children, the caregiver was identified as the key respondent for the NSCAW survey. Youth ages 11 and older were not included in this model because NSCAW did not include assessment of self-reported health need and health service use for this age group at baseline. For the child mental health service models, the sample included children ages 1.5 to 17 (n=882).

Measures

Service use

Two separate binary outcome measures were used to assess child health service use in the past 12 months. We selected baseline measures because at that time most families would have been involved with a CPS agency for about 6-8 months. It is possible that some families were already using services in the months prior to CPS agency involvement. However, research has shown that involvement with a CPS agency is the best predictor of health service use for these families (dosReis, Zito, Safer, & Soeken, 2001; Hurlburt, et al., 2004). In addition, service use measures from post-baseline survey data would have been too far removed from when the service planning meetings occurred, which is during the initial family involvement with the agency.

Primary health care service use

This variable indicated that the child visited a clinic or a doctor for their primary health care as reported by the caregiver. *Mental health service use*. This variable was constructed using survey items from the National Comorbidity Survey items and from the Child and Adolescent Services Assessment (Cahoon Byrnes, 2002). This measure indicated whether the child received any of the following services as reported by the caregiver for young children and as self-reported by children ages 11 and older: (a) in-home counseling services, (b) day treatment for emotional or behavioral problems, (c) clinic-based treatment (e.g., community mental health centers), (d) private professional services (including psychiatrists, psychologists, social workers, and psychiatric nurses), (e) prescription medication for emotional or behavioral problems, and/or (f) any kind of counseling from a school counselor, doctor, or therapist to help deal with feeling depressed or blue. Most of these service use measures have been included in empirical child welfare studies (Burns, Phillips, Wagner, & Barth, 2004; Chapman, Gibbons, Barth, & McCrae, 2003).

Participatory Decision Making (PDM) Service Practice

This construct was measured through a binary variable reflecting the caseworker's report that he/she used a participatory service practice with the family. The NSCAW survey question was phrased as: "Please tell me how the placement decision or plan to ensure the safety of the child was made". Response options were: 1) Agency Team Staffing, 2) Family Group Decision-Making, Conferencing or Unity Model, 3) Caseworker Decision, 4) Police, 5) Cross-Agency Taskforce, or 6) Other. Response option # 2 was used as a measure of PDM service practices. This variable was conditioned on cases where the attendance of a parent (i.e., mother, father, and stepparent) or a family member (i.e., grandparent, other family relative) at service planning meetings was confirmed by the caseworker in another survey

question to ensure the selected cases were consistent with the expected PDM practice approach (Weigensberg, Barth, & Guo, 2009).

Data Analysis

This cross-sectional analysis accounted for NSCAW's complex survey design using STATA's SVY module (Biemer, Christ, Wheelless, & Wiesen, 2008; NDACAN, 2010). The authors conditioned the analytical sample on the child having a health care need. Primary health care need was measured through a constructed binary variable coded as 1=if the caregiver identified his/her child as having fair or poor general health and/or having the child hospitalized in the past 12 months due to a current health or medical condition. Child/youth mental health need was measured as a binary variable coded 1=if the child had a clinical score ($t=64$ or higher), which is the threshold at which clinical intervention is recommended (Achenbach & Edelbrock, 1991), in the internalizing or externalizing scales on any one of the following measures: (a) Youth self-report (YSR) for ages 11 and older, and/or (b) caregiver report in the Child Behavior Checklist (CBCL) for children 1.5 to 10 years of age. The CBCL measure has been widely used in the literature to measure child mental health needs (Hurlburt, et al., 2004).

Pearson and tetrachoric correlations between predictors were $r=0.45$ or less and tolerance checks did not indicate multicollinearity (Allison, 1999). To examine model fit, the linktest, Hosmer and Lemeshow (GOF) and the Akaike Information Criterion (AIC) tests were employed in the analyses (Cameron & Trivedi, 2009). This study's secondary data analysis was approved by the Institutional Review Board at the first author's institution.

In this study, families served through a PDM service practice were not randomly assigned. Instead, a "bureaucratic selection" (Guo & Fraser, 2009) to PDM service practices was made by the service caseworker based on the case, child and caregiver's characteristics including risk factors. Studies without a well-formed comparison group have a high risk of bias, particularly in assessing the benefits of a service practice (Norris et al., 2011). Thus, the authors accounted for observed selection bias through a group balancing approach called propensity score (Guo & Fraser, 2009). The NSCAW data are ideally suited for the use of propensity scores given the rich array of observed variables available with information about the CPS case characteristics, and caregiver and child socio-demographics and risk factors.

The authors used STATA 12/PSMATCH2 and a caliper size of one-quarter of the standard deviation of the propensity scores (Rosenbaum & Rubin, 1985). Through this approach, the final matched sample has fewer individuals than the unmatched sample because observations that are not paired during the propensity score analysis are dropped. Using matched samples, the authors then compared the groups' weighted means on child health service use. The inclusion of NSCAW's survey weights and complex survey design was done after the propensity score matching because this procedure is only matching observations and is not making population-based inferences (Zanutto, 2006).

Results

We assessed potential differences in the CPS case, child and caregiver characteristics between the unmatched groups of children served through a PDM service practice and those who were not served through this practice by running bivariate analysis (See Table 1). Results of these analyses are presented separately for primary and for mental health care services because the set of relevant covariates used for propensity score matching differ by service model.

Of the sample of families involved with a CPS agency and whose children remained in the home, 208 (13%) of children were served through a PDM service practice during service planning as reported by the caseworker. As shown in Table 1, there were significant observed differences ($p<0.05$) in the unmatched child sample between PDM cases and non-PDM cases. Overall, a higher number of lower risk children were served through a PDM service practice compared to those not served through this practice. Lower risk refers to children with a more cooperative caregiver during the investigation, and with fewer cases of domestic violence in the home and family re-referral to a CPS agency.

As previously explained, given the identified group differences, a propensity score matching approach was used to balance the groups on these observed characteristics. As seen in Table 2, bivariate analysis on the post-matched sample show that the observed differences between the PDM and non-PDM groups of children have been eliminated.

Table 3 presents the mean group comparisons on primary and mental health care service use. As shown in the table, children ages 10 and younger whose families were served through a PDM service practice had a higher use of primary health care services in the past 12 months compared to children not served through this practice ($p<0.01$).

Discussion

This study's results indicated that families served through a PDM service practice were significantly different from those not served through these practices in several observed characteristics. Children served through PDM had on average caregivers who were more cooperative during the investigation, and were less likely to have domestic violence present in the home or have been referred to a CPS agency more than once. The distinct attributes among families served through PDM results suggest that caseworkers may believe that including caregivers in decision making would be more successful in terms of buy-in and consensus with lower-risk families. However, caseworkers may not be incorporating other relevant factors when making decisions about caregiver inclusion in PDM, such as capacity for ensuring safe home environments. The current study findings are consistent with other studies showing that caregivers with recent history of arrests, intellectual/cognitive impairment, physical impairment, histories of having been maltreated themselves, high stress, low social support and active domestic violence at home were less likely to have PDM approaches to case planning (Crampton & Williams, 2000; Sundell & Vinnerljung, 2004; Weigensberg, et al., 2009).

After accounting for observed selection bias, we also found that PDM service practices were positively associated with primary health care service use among children compared to those children not served through these practices. Our findings suggest that the inclusion of caregivers in decision making during service planning meetings benefit children's use of primary health care services when needed and that this service practice is more likely to be made available to lower risk families. It is noted that in this context even lower-risk children still face many challenges and the identification of service practices that positively influence access health care services for any child are a priority for social workers and health care providers. This finding provides support for CPS agency efforts to implement PDM practices as a way for children with primary health care needs to receive minimal medical care.

Despite these findings showing a benefit of SDM on children's use of primary care services, only a fraction of families were served through a PDM practice. This percentage of families served through a PDM service practice is consistent with what was reported in a previous study using the 1999-2000 NSCAW survey cohort (Weigensberg, et al., 2009). This evidence also suggests that some CPS agencies may be missing an opportunity to improve children's primary care use.

In addition and contrary to expectations, differences in mental health service use between groups were not significant. Overall, these results suggest that including caregivers in CPS service planning meetings, where decision making is expected to take place, may not be sufficient to overcome barriers to children's mental health service use. It is also plausible that CPS agencies, given their organizational mission, may be focusing on decisions related to the child's physical safety during service planning meetings.

Limitations and additional research

There are several limitations in this study that need to be considered. Only public child welfare agencies were included in the NSCAW survey and findings may not be generalizable to private agencies. Results may not apply to children placed out of their homes (e.g., foster care) over whom child welfare agencies may have more control and resources. Also, the authors were not able to measure health outcomes. Finally, given the observational nature of this study there is a possibility for residual confounding from unmeasured factors.

Despite these limitations, this study used a national sample of families involved with a CPS agency and multiple sources of survey information, accounted for observed selection bias and examined separately primary care and mental health service use for children in need of services. These characteristics can potentially provide a worthy contribution to the child services research field. Finally, the dissemination of our findings will provide support for caregivers' efforts to be included in the decisions made by service providers that impact their children's health care. Additional research that increases our understanding of which service practices are better suited for disadvantaged children and how families at risk might be successfully engaged in services using PDM to mitigate poor psychosocial outcomes related to child maltreatment is warranted. Also, because young children depend on caregivers to implement care plans, information on a family's ability to engage in PDM could inform

pediatricians' treatment recommendations for CPS involved children. For instance, pediatricians may refer families to more proximate providers or to social services that can help with transportation if that would otherwise limit follow up with treatment plans. Last, given the high prevalence of developmental delays among CPS involved children, especially among preschoolers, such as difficulty with adaptive behaviors and low scores in communication and social skills assessments (Ringeisen, Casanueva, Urato, & Cross, 2008; Stahmer et al., 2005), primary care should include routine developmental assessments and referrals to increase the detection of these developmental delays common among CPS involved children.

Implications for future research

This study provides evidence that caseworkers are selective in their selection of families served through a PDM practice. Determining which families will benefit differentially from this service practice is out of the scope of this study. However, future research should look at which families actually benefit the most from PDM practices during service planning meetings. Such evidence should be incorporated into a systematic, evidence-based approach to PDM practices. For example, caseworkers may use specific assessment tools to incorporate participatory decision making factors such as caregiver decision capacity. In addition, caseworkers likely will benefit from clear guidelines on how to implement PDM service practices for families involved with CPS services while assuring the child's safety and wellbeing in the process.

Acknowledgments

We thank our funders at the National Institutes of Mental Health (NIMH) K01 076175 and post-doctoral traineeship from the Agency for Healthcare Research and Quality sponsored by The Cecil G. Sheps Center for Health Services Research at the University of North Carolina at Chapel Hill - Grant No. T32-HS000032, and Dr. Irene Zipper for her support to this research.

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Key Messages

- Caregiver inclusion in decision making during service planning meeting is associated with higher use of primary health care services for their child when needed.
- Lower-risk children were served through a participatory decision making service practice at a higher frequency than high risk children.
- Caregiver inclusion in CPS service planning meetings, where decision making is expected to take place, may not be sufficient to overcome barriers to children's use of mental health services.
- Research that increases our understanding of which service practices are better suited for disadvantaged children should remain a priority for child welfare policy leaders and practitioners.

Table 1
Pre-Matched Bivariate Analyses on Child Descriptive Characteristics

Characteristic	Total sample	PDM Service	No PDM Service	p-value ⁺
<i>Physical Health Services</i>	n (percent)	n (percent)	n (percent)	
Total number of children	1,358 (100)	184 (13.6)	1,174(86.5)	
Age in years (Average/SE)	2.28 (0.08)	2.11(0.23)	2.31 (0.09)	0.423
Gender				
Female	661 (0.49)	95 (14.4)	566 (85.6)	0.388
Male	697 (0.51)	89 (12.8)	608 (87.2)	
Racial and ethnic group				
White/non-Hispanic	455 (0.34)	60 (13.2)	395 (86.8)	0.820
Black/non-Hispanic	375 (0.28)	46 (12.3)	329 (87.8)	
Hispanic	377 (0.28)	57 (15.1)	320 (84.9)	
American Indian/Pacific Islander	125 (0.09)	18 (14.4)	107 (85.6)	
Other	26 (0.02)	3(11.5)	23 (88.5)	
Type of health care				
Public (i.e., Medicaid or Medicare)	1,108 (0.82)	146 (13.2)	962 (86.8)	0.822
Uninsured / Self-pay	88 (0.06)	13 (14.8)	75 (85.2)	
Private insurance	128 (0.09)	19 (14.8)	109 (85.2)	
Other (e.g., CHAMPS)	34 (0.03)	6 (17.7)	28 (82.4)	
Family risk factors				
Caregiver has recent history of arrests	256 (0.19)	33 (12.9)	223 (87.1)	0.732
Caregiver has intellectual/cognitive impairment	78 (0.06)	14 (18.0)	64 (82.0)	0.242
Caregiver has any physical impairment	57 (0.04)	10 (17.5)	47 (82.5)	0.368
Caregiver has own history of abuse or neglect	369 (0.27)	49 (13.3)	320 (86.7)	0.859
Caregiver low cooperation during investigation	111 (0.08)	25 (22.5)	86 (77.5)	0.004 **
High stress in the family	865 (0.64)	124 (14.3)	741 (85.7)	0.262
Low social support	443 (0.33)	56 (12.6)	387 (87.4)	0.496
Family has trouble paying for basic necessities	457 (0.34)	72 (15.8)	385 (84.2)	0.091
Active domestic violence in the home	265 (0.20)	46 (17.4)	219 (82.6)	0.043 *
Health need				
Physical health need	166 (0.12)	29 (17.5)	137 (82.5)	0.115
Mental health need	-	-	-	-
Family re-referral	618 (0.46)	88 (14.2)	530 (85.8)	0.512
Most serious type of maltreatment				
Physical abuse	213 (0.16)	26 (12.2)	187 (87.8)	0.655
Sexual abuse	48 (0.04)	8 (16.7)	40 (83.3)	
Neglect	418 (0.31)	52 (12.4)	366 (87.6)	
Other type of maltreatment (e.g., emotional)	679 (0.50)	98 (14.4)	581 (85.6)	

Characteristic	Total sample	PDM Service	No PDM Service	p-value ⁺
Physical Health Services	n (percent)	n (percent)	n (percent)	
<i>Mental Health Services</i>				
Total number of children	855 (100)	102 (11.9)	753 (88.1)	
Age in years (Average/SE)	8.40 (0.15)	8.04(0.41)	8.45 (0.17)	0.380
Gender				
Female	428 (0.50)	52 (12.2)	376 (87.9)	0.843
Male	427 (0.50)	50 (11.7)	377 (88.3)	
Racial and ethnic group				
White/non-Hispanic	366 (0.43)	34 (9.3)	332 (90.7)	0.160
Black/Non-Hispanic	198 (0.23)	23 (11.6)	175 (88.4)	
Hispanic	180 (0.21)	30 (16.7)	150 (83.3)	
American Indian/Pacific Islander	90 (0.11)	12 (13.30)	78 (86.70)	
Other	21 (0.02)	3 (14.30)	18 (85.70)	
Type of health care				
Public (i.e., Medicaid or Medicare)	643 (0.75)	73 (11.40)	570 (88.70)	0.174
Uninsured / Self-pay	70 (0.08)	11 (15.70)	59 (84.30)	
Private insurance	128 (0.15)	14 (11.00)	114 (89.10)	
Other (e.g., CHAMPS)	14 (0.02)	4 (28.60)	10 (71.40)	
Family risk factors				
Caregiver has recent history of arrests	138 (0.16)	18 (13.00)	120 (87.00)	0.659
Caregiver has intellectual/cognitive impairment	42 (0.05)	7 (16.70)	35 (83.30)	0.331
Caregiver has any physical impairment	54 (0.06)	7 (13.00)	47 (87.00)	0.809
Caregiver has own history of abuse or neglect	179 (0.21)	27 (15.00)	152 (85.00)	0.143
Caregiver low cooperation during investigation	86 (0.10)	17 (19.80)	69 (80.20)	0.018 [*]
High stress in the family	530 (0.62)	71 (13.40)	459 (86.60)	0.091
Low social support	291 (0.34)	40 (13.80)	251 (86.30)	0.239
Family has trouble paying for basic necessities	293 (0.34)	40 (13.70)	253 (86.40)	0.262
Active domestic violence in the home	143 (0.17)	26 (18.20)	117 (81.80)	0.011 [*]
Health need				
Physical health need	-	-	-	-
Mental health need	315 (0.37)	34 (10.80)	281 (89.20)	0.434
Family re-referral	520 (0.61)	73 (14.00)	447 (86.00)	0.018 [*]
Most serious type of maltreatment				
Physical abuse	182 (0.21)	15 (8.20)	167 (91.80)	0.192
Sexual abuse	78 (0.09)	10 (12.80)	68 (87.10)	
Neglect	272 (0.32)	30 (11.00)	242 (89.00)	
Other type of maltreatment (e.g., emotional)	323 (0.38)	47 (14.60)	276 (85.50)	

* p<0.05;

^{**}
p<0.01.

⁺ Chi-square or ttest of significance were used to estimate the p value.

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Table 2
Post-Matched Bivariate Analyses on Child Descriptive Characteristics

Characteristic	Total sample	FGDM Service	No FGDM Service	p-value ⁺
<i>Physical Health Services</i>	n (percent)	n (percent)	n (percent)	
Total number of children	362 (100)	197 (54.4)	165 (45.6)	
Age in years (Average/SE)	2.19 (0.20)	2.01 (0.20)	2.40 (0.30)	0.232
Gender				
Female	176 (0.50)	99 (56.30)	77 (43.80)	0.496
Male	186 (0.50)	98 (52.70)	88 (47.30)	
Racial and ethnic group				
White/non-Hispanic	126 (0.40)	66 (52.40)	60 (47.60)	0.914
Black/Non-Hispanic	95 (0.30)	51 (53.70)	44 (46.30)	
Hispanic	102 (0.30)	57 (55.90)	45 (44.10)	
American Indian/Pacific Islander	31 (0.10)	19 (61.30)	12 (38.70)	
Other	8 (0.02)	4 (50.00)	4 (50.00)	
Type of health care				
Public (i.e., Medicaid or Medicare)	283 (0.80)	157 (55.5)	126 (44.50)	0.158
Uninsured / Self-pay	37 (0.10)	14 (37.80)	23 (62.20)	
Private insurance	32 (0.10)	20 (62.50)	12 (37.50)	
Other (e.g., CHAMPS)	10 (0.00)	6 (60.00)	4 (40.00)	
Family risk factors				
Caregiver has recent history of arrests	76 (0.21)	34 (44.70)	42 (55.30)	0.057
Caregiver has intellectual/cognitive impairment	23 (0.060)	15 (65.20)	8 (34.80)	0.283
Caregiver has any physical impairment	15 (0.040)	10 (66.70)	5 (33.30)	0.331
Caregiver has own history of abuse or neglect	107 (0.30)	52 (48.60)	55 (51.40)	0.150
Caregiver low cooperation during investigation	44 (0.12)	26 (59.10)	18 (40.90)	0.507
High stress in the family	252 (0.70)	136 (54.00)	116 (46.00)	0.794
Low social support	126 (0.35)	65 (51.60)	61 (48.40)	0.429
Family has trouble paying for basic necessities	141 (0.39)	78 (55.30)	63 (44.70)	0.784
Active domestic violence in the home	82 (0.23)	47 (57.30)	35 (42.70)	0.549
Health need				
Physical health need	49 (0.14)	31 (63.40)	18 (36.70)	0.181
Mental health need	-	-	-	-
Family re-referral	180 (0.50)	94 (52.20)	86 (47.80)	0.459
Most serious type of maltreatment				
Physical abuse	58 (0.16)	28 (48.30)	30 (51.70)	0.157
Sexual abuse	12 (0.03)	9 (75.00)	3 (25.00)	
Neglect	108 (0.30)	53 (49.10)	55 (50.90)	
Other type of maltreatment (e.g., emotional)	184 (0.51)	107 (58.20)	77 (41.90)	

Characteristic	Total sample	FGDM Service	No FGDM Service	p-value ⁺
Physical Health Services	n (percent)	n (percent)	n (percent)	
<i>Mental Health Services</i>				
Total number of children	200 (100)	106 (53.00)	94 (47.00)	
Age in years (Average/SE)	8.31 (0.30)	8.09 (0.41)	8.55 (0.46)	0.452
Gender				
Female	96 (0.48)	55 (57.30)	41 (42.70)	0.243
Male	104 (0.52)	51 (49.00)	53 (51.00)	
Racial and ethnic group				
White/non-Hispanic	84 (0.42)	36 (42.90)	48 (57.10)	0.171
Black/Non-Hispanic	41 (0.21)	24 (58.50)	17 (41.50)	
Hispanic	46 (0.23)	29 (63.00)	17 (37.00)	
American Indian/Pacific Islander	23 (0.12)	13 (56.20)	10 (43.50)	
Other	6 (0.03)	4 (66.70)	2 (33.30)	
Type of health care				
Public (i.e., Medicaid or Medicare)	148 (0.74)	76 (51.4)	72 (48.70)	0.254
Uninsured / Self-pay	24 (0.12)	12 (50.0)	12 (50.00)	
Private insurance	24 (0.12)	14 (58.3)	10 (41.70)	
Other (e.g., CHAMPS)	4 (0.02)	4 (100)	0 (0.00)	
Family risk factors				
Caregiver has recent history of arrests	31 (0.20)	18 (58.10)	13 (41.90)	0.539
Caregiver has intellectual/cognitive impairment	10 (0.10)	6 (60.00)	4 (40.00)	0.649
Caregiver has any physical impairment	19 (0.10)	8 (42.10)	11 (57.90)	0.317
Caregiver has own history of abuse or neglect	51 (0.30)	29 (56.90)	22 (43.10)	0.522
Caregiver low cooperation during investigation	28 (0.10)	15 (53.60)	13 (46.40)	0.948
High stress in the family	142 (0.70)	76 (53.50)	66 (46.50)	0.817
Low social support	79 (0.40)	43 (54.40)	36 (45.60)	0.743
Family has trouble paying for basic necessities	75 (0.40)	39 (52.00)	36 (48.00)	0.826
Active domestic violence in the home	37 (0.20)	24 (64.90)	13 (35.10)	0.109
Health need				
Physical health need	-	-	-	-
Mental health need	70 (0.40)	35 (50.00)	35 (50.00)	0.533
Family re-referral	136 (0.70)	75 (55.20)	61 (44.90)	0.510
Most serious type of maltreatment				
Physical abuse	37 (0.20)	16 (43.20)	21 (56.80)	0.230
Sexual abuse	14 (0.10)	10 (71.40)	4 (28.60)	
Neglect	67 (0.30)	33 (49.30)	34 (50.70)	
Other type of maltreatment (e.g., emotional)	82 (0.40)	47 (57.30)	35 (42.70)	

* p<0.05;

** p<0.01.

⁺ Chi-square or ttest of significance were used to estimate the p value.

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Table 3
Weighted Group Comparison of Child Health Service Use for the Matched Sample

	PDM Service	No PDM Service	P-value
	n (weighted percent)	n (weighted percent)	
Physical health service Use (n)	197	165	
Services used in the past 12 months	116 (59.0)	66 (40.0)	0.004 **
Mental health service Use (n)	106	94	
Services used in the past 12 months	25 (23.3)	29 (31.0)	0.304

**
p<0.01.