

Association Between Caregiver Stress and Behavioral Problems in the Children of Incarcerated Fathers in Hong Kong

Wing Hong Chui¹

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Abstract *Objectives* Caregivers of children with incarcerated parents have received little attention in the literature, though they face unique incarceration-related challenges. General caregiver research has highlighted associations between caregiver distress and children's behavioral problems, even implying that the depressive tendencies of caregivers can be 'transmitted'. The current study investigated the applicability of this notion to caregivers responsible for children of incarcerated fathers. *Methods* Fifty-four female caregivers of children with incarcerated parents were recruited via collaboration with a non-governmental organization. Their levels of stress and depression were measured using questionnaires, as were the behavioral problems of children under their care. The relationships between the variables were examined. *Results* The results firstly suggest that these caregivers are vulnerable to psychological distress, with around 57 % of them suffering from borderline to severe depression. Obtained socio-demographic characteristics were not found to have any bearing on the psychosocial functioning of caregivers or children—rather, all psychosocial variables were interlinked, and further analyses revealed that the depression of caregivers mediated the relationship between their perceived stress and internalizing/externalizing behavioral problems of the child ($\beta = .628$ and $\beta = .468$ respectively), implicating depression as a mechanism via which adversity can be transferred from a caregiver to a child. *Conclusions* Increasing the focus on a caregiver's mental health may be an efficacious strategy in research

and practice, perhaps by providing more support for caregivers and implementing joint caregiver-child interventions to more holistically alleviate problems in families affected by parental incarceration. Limitations of the current study and further recommendations are also discussed.

Keywords Parental incarceration · Caregivers · Depression · Transmission · Child internalizing and externalizing behavioral problems

Significance

Previous research on the impacts of parental incarceration has generally focused on children or the child-parent relationship with less attention being given to affected caregivers. To the author's knowledge the current study is the first of its kind in demonstrating the associations between the distress felt by caregivers of children with incarcerated parents and behavioral problems of said children. The study found caregiver depression to mediate the aforementioned relationship arguing for a greater focus to be placed on the mental health of such caregivers in research and practice for more optimal outcomes when assisting families dealing with parental incarceration.

Introduction

Parental incarceration significantly impacts the lives of children affected by it, and research has consistently established that parental incarceration is associated with numerous adverse child behavioral outcomes, examples being over-aggression, withdrawal, poor school performance, delinquency, or incarceration themselves [18].

✉ Wing Hong Chui
eric.chui@cityu.edu.hk

¹ Department of Applied Social Sciences, City University of Hong Kong, Tat Chee Avenue, Kowloon Tong, Hong Kong

Recent studies have similarly reported that affected children show poorer adolescent adjustment, exhibit more internalizing and externalizing problem behaviors, and abuse alcohol and tobacco at a younger age, amongst other issues [21, 22]. Incarceration also often causes irreparable strain in the parent–child relationship, resulting in the hurtful loss of a parental figure, which bodes poorly for development [9]. All in all, the negative impact of parental incarceration on children is almost irrefutable.

However, the antecedents of these negative outcomes remain debated. For example, researchers have suggested that adverse behavioral manifestations were a result of broader risk factors—such as socio-economic status and parenting style—rather than the actual incarceration [21]. Others have contrarily argued that the incarceration itself leads to poor developmental outcomes, with parental absence and separation trauma being issues [9, 35]. In support of this, Kampfner discovered differences between the children with an incarcerated parent and the children whose mothers were absent but not incarcerated, implying the uniqueness of parental incarceration as a distinct stressor [19]. In any case, more research needs to be conducted on this area to inform effective interventions for affected families.

A different approach to this issue is to focus on the caregivers of children, a population which has received scant attention in the literature. Despite this, a growing body of general research on caregivers of children with an absent (but not necessarily incarcerated) parent has found that caregivers face certain challenges and are also adversely affected by the parental absence. For instance, grandparent caregiver studies reveal that, although caregiving does evoke certain satisfactions, it imposes burdens pertaining to finances, legal issues, family problems, and hampered social lives [4]. Thus, caregivers may be vulnerable to psychological distress, as predicted by limited resources, ailing physical health and lack of social support, to name a few factors [20, 29].

Carrying these notions forward, caregivers of children with incarcerated parents may be at an even more heightened risk due to facing incarceration-related challenges in addition to the aforementioned issues. If the caregiver is a grandparent (i.e. their son/daughter has been incarcerated), they have to manage trauma associated with the incarceration itself and the resulting familial-relationship strains, the latter of which hinders shared decision-making [33, 35]. Caregivers also have to cope with stigma-by-association, along with stress from mediating the parent–child relationship, which involves navigating a child-unfriendly visitation system. Within the home domain, caregivers may be faced with the same socio-demographic circumstances that preceded or followed the incarceration, making their task of providing a good environment for

developing children overwhelming [5]. Moreover, should the incarcerated parent have been the primary income-earner of the family, significant financial strains are placed on the caregiver, who often is a dependent partner [9, 33]. These challenges imposed on caregivers of children with incarcerated parents predispose them to high distress, and much work needs to be done to assist them, as they also often report a need for more support [5].

Addressing caregiver distress may in fact prove to be an invaluable strategy as—though yet to be demonstrated within incarceration-related circumstances—broader parenting research has consistently found associations between caregiver symptomology and children’s problems. A body of work studying depressed mothers in otherwise intact families has illuminated links between maternal distress and negative child behavioral ramifications [7, 13, 16, 32] in instances even after controlling for factors such as socio-economic status [2]. Another study on psychiatrically discharged pre-adolescents showed that reductions in parenting stress preceded child behavioral improvements, though reduced child externalizing symptoms could not account for changes in parenting stress [3], hinting at the causal nature of distress on adverse behavior. Pettit et al. [31] further argued that depression could be ‘transmitted’ inter-generationally, with parents’ symptoms predicting children’s anxiety/depression; this notion was supported by a recent study in which high parenting stress—but not family dysfunction—was associated with the development of anxiety in pre-adolescents [34], implying that caregiver distress remains a primary antecedent to adverse child outcomes. Thus, targeting caregivers may be a feasible intervention strategy, a notion which may be applicable to caregivers of children with incarcerated parents.

The Current Study

To the author’s knowledge, no studies to date have investigated how children of incarcerated parents may develop behavioral and emotional dysfunctions vicariously through their caregivers’ distress. This study addresses this knowledge gap, and its findings could inform policy and practice to increase their focus on caregivers, possibly involving them in more integrated interventions.

The objectives of the current study were to measure: some socio-demographic characteristics of caregivers of children with an incarcerated parent, the psychosocial aspects of caregiver stress and depression, and children’s internalizing and externalizing behaviors. Links between these variables were analyzed to better understand their underlying relationships. Specifically, this study investigated whether the distress of caregivers could be ‘transmitted’ to children.

Prior to the study, the researcher hypothesized that the obtained socio-demographic characteristics would not account for any differences in psychosocial variables. Rather, caregiver stress was expected to predict the severity of children's emotional and behavioral problems, with caregiver depression mediating the above relationship.

Method

Participants

The study targeted caregivers of children with an incarcerated parent. Participants had to be the caregiver of at least one child aged from 6 to 18 years, such that the questionnaire could be age-appropriately administered. Given the unique and somewhat unreachable nature of the target population, purposive sampling was employed. Participants were recruited via collaboration with a non-governmental organization that works predominantly with families affected by paternal incarceration—this arrangement being reflective of the situation in Hong Kong wherein male prisoners constitute around 80 % of the prison population [17]—and the sample was thus controlled to only comprise caregivers of children with incarcerated fathers. Moreover, although data was collected from both male and female caregivers, a gender imbalance was observed. Six sets of data from male caregivers were subsequently excluded to prevent confounding effects of gender, leaving the final sample at 54 female participants. The demographic characteristics of participants and their children are presented in the results.

Materials

Perceived Stress Scale (PSS-10)

The Perceived Stress Scale contains 14 items rated on a five-point Likert scale (0 = never, 4 = very often), which provide an indication of respondents' thoughts and emotions over the previous month [10]. The 10-item Chinese version was used in this study [24], with a higher score being reflective of a higher level of perceived stress. The internal consistency of ratings was good in the present sample ($\alpha = .84$).

Beck Depression Inventory II (BDI-II), Chinese Version

The BDI-II is one of the most widely used scales measuring the severity of an individual's symptoms of depression [12]. The scale comprises 21 statements illustrating depressive symptoms, and subjects rate severity on a four-point Likert scale (0 = symptom-free, 3 = severe),

with higher scores indicating worse depression. The present study utilized the Chinese-translated version [8], which possesses good internal consistency with an alpha of .92 according to the manual.

Child Behavior Check List (CBCL), Chinese Version

The CBCL is a diagnostics checklist assessing a child's functioning across various dimensions, designed for use by caregivers describing children of ages 6–18 years [1]. Respondents indicate how well statements describing various behavioral problems apply to their child on a three-point Likert scale (0 = not true, 2 = very true/often true). Similar statements are grouped into 'Syndrome' subscales, which form two higher-order scales of Internalizing and Externalizing problems. In the present study, analyses were conducted on both the Internalizing problems scale, which includes the subscales of "Withdrawn", "Somatic Complaints" and "Anxious/Depressed", and the Externalizing problems scale, comprising the "Delinquent Behavior" and "Aggressive Behavior" subscales. The Chinese version of the scale was used [23].

Procedure

This cross-sectional study began upon obtaining ethics approval from the Human Research Ethics Committee for Non-Clinical Faculties at the University of Hong Kong. Through cooperation with a non-governmental organization, social workers contacted potential participants to inform them of the study and extended an invitation to voluntarily participate. Verbal consent was obtained from willing participants, and necessary arrangements pertaining to data collection were made. Eighty interviews were conducted, and upon applying the inclusion criteria, data from 54 participants were deemed suitable for analyses.

Interviews were carried out face-to-face, mostly in the social service center, to ensure confidentiality and reliability. Participants provided written consent, and their freedom to participate or withdraw at any time without penalty was emphasized. Confidentiality was assured, and they were provided the contact details of the researcher in the event of any enquiries. While most participants chose to self-administer the questionnaires, some requested the assistance of social workers to read each item out to them and note down their responses.

The descriptive socio-demographic characteristics of the sample were obtained, along with the category distributions of respondents' measured psychosocial characteristics after applying each instrument's respective cutoffs. Only the data of the first child were analyzed as a proxy measure of the general functioning of children in each family. Bivariate analyses were used to examine whether the

obtained socio-demographic characteristics had any effect on the psychosocial variables of either respondents or children.

Following this step, multiple regression analyses were conducted to investigate the mediating effect of caregiver depression between caregiver stress and the child’s problems, for both the internalizing and externalizing problem scales (see Fig. 1).

Results

Preliminary Analyses

The socio-demographic characteristics of participants are presented in Table 1, and the categorical distributions of psychosocial variables are illustrated in Table 2. The majority of caregivers fell into borderline or severe depression ranges, with only 42.59 % of respondents being considered “normal” [8]. Moreover, around 39 % of children in the sample demonstrated above-normal internalizing problems, and 26 % demonstrated above-normal externalizing problems [1].

Bivariate analyses of the socio-demographic variables on the psychosocial variables yielded no significant results, suggesting that none of the obtained socio-demographic factors had any bearing on psychosocial aspects. A summary of these findings along with the descriptive demographic statistics are presented in Table 3.

The correlational analyses of the psychosocial variables are presented in Table 4. All these variables inter-correlated significantly, and all relationships were positive as expected.

Mediation Analyses

Two mediation analyses were conducted, entering caregivers’ perceived stress as the independent variable and caregiver depression as the mediator, while the outcome variables were children’s internalizing and externalizing

behavioral problems. None of the demographic characteristics were included as control variables due to their non-significance in prior analyses.

As observed, caregivers’ perceived level of stress was initially associated with children’s internalizing problems ($\beta = .296, p < .05$). After adding in caregiver depression as a mediator, the aforementioned beta weight dropped to a non-significant $-.0170$, while the mediator held a significant beta weight of $.628 (p = .001)$. The Sobel test confirmed that the mediation was significant ($Z = 3.207, p < .01$) (see Table 5). Therefore, caregivers’ depression mediated the relationship between their perceived stress and the internalizing problems of their child. The path diagram of this model is illustrated in Fig. 2.

Similarly, caregivers’ perceived stress was initially associated with children’s externalizing problems ($\beta = .284, p < .05$), and upon adding caregiver depressions as a mediator, the aforementioned beta weight dropped to a non-significant $-.063$, while the mediator held a significant beta weight of $.468 (p = .017)$. The Sobel test confirmed that this mediation was significant ($Z = 2.365, p < .05$) (see Table 6); thus, caregivers’ depressions also mediated the relationship between their perceived stress and the externalizing problems of the child. The path diagram of this model is depicted in Fig. 3.

Discussion and Conclusion

This study is one of the first of its kind in examining whether caregiver distress can be ‘transmitted’ to children, within the unique context of parental incarceration. The current findings firstly imply that caregivers of children with incarcerated parents are indeed vulnerable to distress, as their psychosocial ratings suggest. Juxtaposing their results with previous caregiver research, the current sample presented with higher BDI-II scores ($M = 15.24, SD = 11.54$) and a much higher proportion of them were classified into above-normal depression ranges ($\sim 57 \%$), as compared to caregivers of dementia patients, who

Fig. 1 Framework illustrating the mediating role of caregiver depression between caregiver stress and child internalizing/externalizing problems

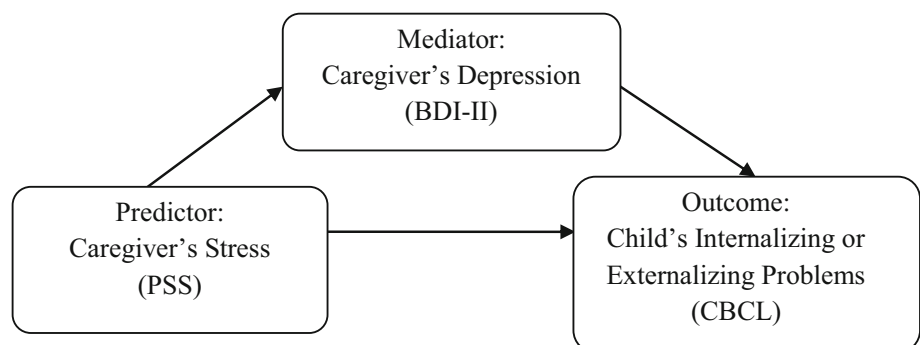


Table 1 Participants' measured socio-demographic characteristics

Caregiver's demographics	<i>M (SD)</i>
Age (years)	52.79 (13.68)
	<i>N (%)</i>
<i>Caregiver's relationship with the child</i>	
Mother	27 (50.00)
Grandmother	23 (42.59)
Others	4 (7.41)
<i>Marital status</i>	
Married	35 (64.81)
Single/widowed	9 (16.67)
Separated/divorced	8 (14.81)
Missing	2 (3.70)
<i>Education</i>	
Nil	4 (7.41)
Primary	21 (38.89)
Secondary	20 (37.04)
Tertiary	1 (1.85)
Others	2 (3.70)
Missing	6 (11.11)
<i>Living arrangements</i>	
With spouse	5 (9.26)
With family	49 (90.74)
<i>Religion</i>	
Nil	29 (53.70)
Catholic/Christian	11 (20.37)
Buddhist/Chinese folk religion	10 (18.52)
Missing	4 (7.41)
<i>Number of supervised children</i>	
1	27 (50.00)
2	22 (40.74)
3	5 (9.26)
<i>Demographic information of the child</i>	
	<i>M (SD)</i>
Age	10.55 (3.67)
	<i>N (%)</i>
<i>Gender</i>	
Male	34 (62.96)
Female	20 (37.04)

reported an average score of 8.62 ($SD = 6.49$) with only 19 % of them going beyond normal depression levels [28]. The stress ratings of the current caregivers (PSS-10 score: $M = 19.55$, $SD = 7.14$) were also high, exceeding the scores of another female sample of caregivers of dementia patients ($M = 17.09$, $SD = 5.12$) [14]. These worrying findings importantly highlight the psychological risk faced

Table 2 Category distributions of psychosocial variables

	<i>N</i>	<i>%</i>
1. BDI-II		
Caregiver depressive symptomology		
Normal	23	42.59
Mild	10	18.52
Moderate	14	25.93
Severe	7	12.96
2. CBCL internalizing problems		
Children's behavioral problems		
Normal	34	61.11
Borderline	11	12.96
Abnormal	9	25.93
3. CBCL externalizing problems		
Normal	40	74.07
Borderline	5	9.26
Abnormal	9	16.67

BDI-II Beck Depression Inventory-II, *CBCL* Child Behavior Check List

by caregivers of children with incarcerated parents. That being said, owing to time constraints and the 'unreachable' nature of the target population, the present study recruited a relatively small sample. As such, caution should be taken while interpreting the results.

Moreover, the data revealed that the proportions of children in the sample exhibiting above-normal internalizing and externalizing behavioral problems were around 39 % and 26 % respectively, denoting borderline or abnormal ratings. The severity of these numbers remains unconfirmed, as local normative data were not available for comparison, nor was any control group sampled in the current study (which is highlighted as a limitation below). Nonetheless, it seems reasonable to superficially opine that the frequency of above-normal behavioral problems of children in the current sample is likely higher than that of the normal population.

The analyses of socio-demographic characteristics imply that none of the measured socio-demographic factors have any bearing on psychosocial functioning. These findings are somewhat surprising, as they contradict previous assertions that factors such as religion influence the coping abilities of caregivers [6], and that genetic factors (i.e. familial relations) lead to psychological similarities [31]. However, the absence of significant effects observed here may again be merely due to the relatively small sample recruited, which would have afforded the analyses low statistical power. One further shortcoming of this demographic investigation is that a measure of socio-economic status was not obtained; given previous assertions of

Table 3 Summary of psychosocial variable analyses by demographics

	Perceived Stress Scale (PSS) Pearson's <i>R</i>	Beck Depression Inventory (BDI-II) Pearson's <i>R</i>	Child Behavioral Checklist-Internalizing score (CBCL-Internalizing) Pearson's <i>R</i>			Child Behavioral Checklist-Externalizing score (CBCL-Externalizing) Pearson's <i>R</i>						
<i>Correlational analyses^a</i>												
Caregiver's age	-.264	-.299	-.246			-.174						
Child's age (first)	.167	-.025	-.050			-.127						
Caregiver's relationship with the child	Mean	S.D.	Range	Mean	S.D.	Range	Mean	S.D.	Range	Mean	S.D.	Range
<i>Categorical analyses</i>												
Mother	20.96	5.98	10–33	17.56	11.63	0–37	44.49	11.93	32–78	53.96	9.84	32–70
Grandmother	18.42	8.08	6–35	13.57	11.04	0–38	52.83	11.38	32–72	52.13	9.44	32–67
Others	16.50	8.36	7–27	9.25	13.00	0–28	44.25	16.58	24–61	51.75	17.35	27–67
Group comparison significance	$p = .312$			$p = .270$			$p = .206$			$p = .795$		
<i>Marital status</i>												
Married	20.41	6.43	6–33	16.69	11.89	0–38	35.86	12.75	24–78	53.03	11.04	27–70
Single/widowed	22.85	7.38	12–35	15.00	12.74	0–37	51.78	11.89	32–72	54.78	8.24	45–67
Separated/divorced	14.33	7.09	6–27	9.88	9.51	0–28	56.50	10.94	32–67	51.75	9.82	32–67
Group comparison significance	$p = .031^*$			$p = .340$			$p = .735$			$p = .833$		
	though post hoc Games–Howell comparisons found no significant differences between specific groups: M & S/W: $p = .647$ M & S/D: $p = .116$ S/W & S/D: $p = .069$											
<i>Education</i>												
Nil	16.13	6.89	8–27	11.80	11.23	2–28	51.40	7.27	41–61	50.40	6.73	41–59
Primary	21.23	7.28	7–35	15.36	11.91	0–38	51.77	14.25	24–78	51.82	12.63	27–67
Secondary or above	19.86	6.45	6–30	18.14	11.92	0–37	54.38	12.07	38–77	53.62	8.66	37–70
Group comparison significance	$p = .330$			$p = .511$			$p = .773$			$p = .771$		
<i>Living arrangements</i>												
With spouse	18.80	9.36	6–30	11.40	10.99	0–27	51.00	10.03	38–63	57.60	6.23	49–66
With family	19.63	6.99	6–35	15.63	11.63	0–38	53.84	12.42	24–78	52.55	10.36	27–70
Group comparison significance	$p = .808$			$p = .440$			$p = .624$			$p = .292$		
<i>Religious beliefs</i>												
Nil	19.62	7.12	7–30	14.21	12.34	0–38	51.07	10.92	24–72	52.03	10.98	27–67
Catholic/Christian	19.18	7.45	6–35	17.64	10.93	3–33	60.36	11.99	38–77	55.73	7.76	41–70
Buddhist/Chinese folk religion	18.97	7.35	6–33	16.10	11.38	0–37	52.90	15.45	32–78	51.30	10.81	32–67
Group comparison significance	$p = .964$			$p = .701$			$p = .106$			$p = .541$		
<i>Number of supervised children</i>												
1	19.37	8.00	6–35	16.04	10.90	0–38	53.59	11.45	24–72	54.00	10.26	27–67
2	19.27	6.70	8–33	15.73	12.99	0–37	53.36	13.87	32–78	50.50	10.33	32–70
3	21.73	4.04	17–27	8.80	7.01	2–16	54.40	9.87	38–63	58.80	5.36	54–67
Group comparison significance	$p = .778$			$p = .430$			$p = .986$			$p = .199$		

Table 3 continued

Caregiver's relationship with the child	Mean	S.D.	Range	Mean	S.D.	Range	Mean	S.D.	Range	Mean	S.D.	Range
<i>Gender of the child</i>												
Male	18.91	7.38	6–30	13.21	11.63	0–38	52.56	11.66	24–72	52.91	10.20	27–67
Female	20.63	6.74	10–35	18.70	10.81	0–37	55.30	13.10	32–78	53.20	10.25	32–70
<i>Group comparison significance</i>	$p = .397$			$p = .091$			$p = .429$			$p = .921$		

* $p < .05$ level (2-tailed)

^a None of the correlations were significant at the $p < .05$ level

Table 4 Overall means, standard deviations and correlations of psychosocial variables

	Mean (SD)	1.	2.	3.	4.
1. PSS ^a Score	19.55 (7.14)	–			
2. BDI-II ^b Score	15.24 (11.54)	.742**	–		
3. CBCL ^c Internalizing <i>T</i> -score	53.57 (12.17)	.296*	.502**	–	
4. CBCL Externalizing <i>T</i> -score	53.02 (10.12)	.284*	.421**	.714**	–

PSS Perceived Stress Scale, BDI-II Beck Depression Inventory-II, CBCL Child Behavior Check List

* $p < .05$ level (2-tailed); ** $p < .01$ level (2-tailed)

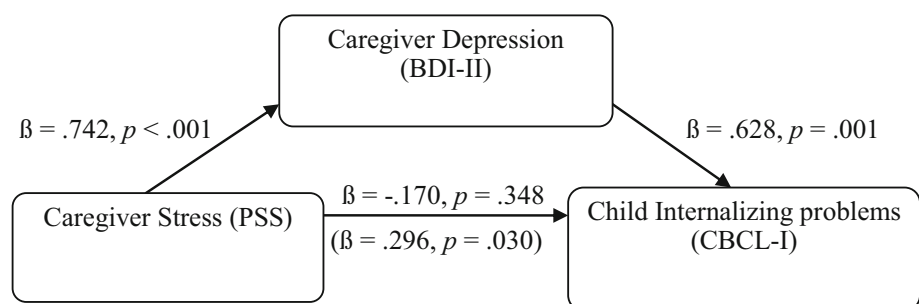
Table 5 Multiple regression models demonstrating the mediating effect of caregiver depression between caregiver stress and child internalizing problems

Model outcome	R	R ²	Model sig.	Variable(s) entered	Unstandardized coefficient		Standardized coefficient (β)	t	Coefficient sig.
					B	SE			
Model 1: X predicts Y									
Y (CBCL-I)	.296	.088	$p = .030^*$	X (PSS)	.505	.226	.296	2.238	$p = .030^*$
Model 2: X predicts M									
M (BDI-II)	.742	.550	$p < .001^{***}$	X (PSS)	1.200	.150	.742	7.978	$p < .001^{***}$
Model 3: M predicts Y, controlling for X									
Y (CBCL-I)	.515	.265	$p = .001^{**}$	X (PSS)	-.289	.305	-.170	-.947	$p = .348$
				M (BDI-II)	.662	.189	.628	3.508	$p = .001^{**}$

PSS Perceived Stress Scale, BDI-II Beck Depression Inventory-II, CBCL-I Child Behavior Check List-Internalizing

* $p < .05$ level (2-tailed); ** $p < .01$ level (2-tailed); *** $p < .001$ level (2-tailed)

Fig. 2 Mediating effect of caregiver depression between caregiver stress and child internalizing problems. *Note* The values in parenthesis denote the standardized coefficient and p values of the unmediated model. Sobel Test Statistics: $Z = 3.207, p = .001$



this factor's importance [21], future research would benefit from its inclusion. Other important variables to consider moving forward are the length of the caregiving

arrangement or the age of the child at which parental incarceration occurred. All in all, the current analyses should not be taken as conclusive evidence that socio-

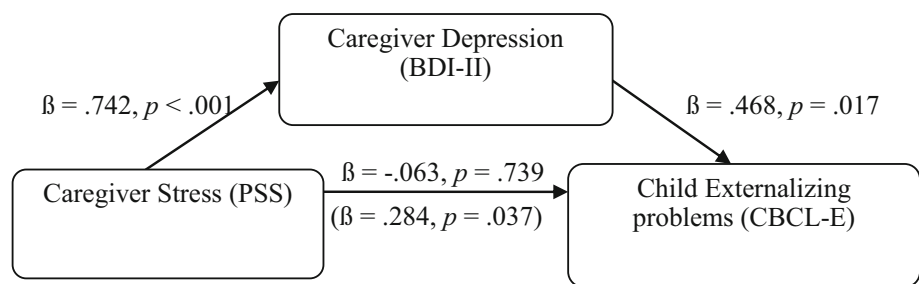
Table 6 Multiple regression models demonstrating the mediating effect of caregiver depression between caregiver stress and child internalizing problems

Model outcome	R	R ²	Model sig.	Variable (s) entered	Unstandardized coefficient		Standardized coefficient (β)	t	Coefficient sig.
					B	SE			
Model 1: X predicts Y									
Y(CBCL-E)	.284	.081	<i>p</i> = .037*	X (PSS)	.403	.189	.284	2.136	<i>p</i> = .037*
Model 2: X predicts M									
M(BDI-II)	.742	.550	<i>p</i> < .001***	X (PSS)	1.200	.150	.742	7.978	<i>p</i> < .001***
Model 3: M predicts Y, controlling for X									
Y(CBCL-E)	.423	.179	<i>p</i> = .017*	X (PSS)	−.090	.268	−.063	−.334	<i>p</i> = .739
				M (BDI-II)	.411	.166	.468	2.474	<i>p</i> = .017*

PSS Perceived Stress Scale, BDI-II Beck Depression Inventory-II, CBCL-E Child Behavior Check List-Externalizing

* *p* < .05 level (2-tailed); ** *p* < .01 level (2-tailed); *** *p* < .001 level (2-tailed)

Fig. 3 Mediating effect of caregiver depression between caregiver stress and child externalizing problems. Note The values in parenthesis denote the standardized coefficient and *p* values of the unmediated model. Sobel Test Statistics: *Z* = 2.3646, *p* = .018



demographics do not play any role in the psychosocial functioning of caregivers or affected children.

Nonetheless, correlational analyses revealed that the psychosocial outcomes of caregiver stress, caregiver depression and children’s internalizing and externalizing behaviors were all directly related with each other, suggesting these variables are closely interlinked. Indeed, the severity of caregivers’ perceived stress corresponded to the severity of child internalizing problems in line with research findings that high parenting stress is associated with the development of children’s anxious and depressive tendencies [34]. Previously, the child’s attribution style was suggested to be a mediator [32], and the current study proposes caregiver depression as another mechanism by which adversity could be ‘transmitted’ from a caregiver to a child. The author surmises that, should the stressors on caregivers be too great, consequently aggravating their depression, the child’s own anxious/depressive tendencies could subsequently be affected. This situation may arise because depression affects caregivers’ provision of quality care, a proposition informed by parenting research which has consistently demonstrated a negative association between parental depression and parenting quality [25], as depression hampers parents’ ability to respond and attend to their child’s needs [15]. Hammen et al. [16] further

discovered a specific path leading from maternal depression to maternal stress, parenting quality, and adolescent depression, implying an intergenerational ‘transmission’ of adversity. While previous findings may not be too comparable with the current caregivers due to sample differences, they are nonetheless helpful in explaining the links between caregiver distress and child internalizing behavior observed here. Another possible transfer mechanism might also be via the social learning of psychosocial impairments and cognitions, as has been previously proposed [26].

Similarly, the severity of caregivers’ perceived stress corresponded to the severity of child externalizing problems—this finding is also congruent with previous research showing that parental distress is related to children’s outward behavioral problems such as aggression and delinquency [2, 3]. Caregivers’ depression again mediated the relationship in question, implicating it as a transfer mechanism of adversity between a caregiver and a child. An explanation for this relationship may be that, should caregivers be unable to provide consistent quality care due to depression, the child might be driven to ‘act out’ in a bid to garner more attention. Again, insights can be drawn from the parenting literature, which has demonstrated links between negative parenting—examples being insufficient monitoring or overly harsh parenting—and child externalizing behaviors [11, 30].

Previous studies have likewise found associations between maternal depression, parenting behaviors and child externalizing behaviors [7, 13], which may be somewhat generalizable to the current sample.

Taken together, the results of this study provide early evidence that the psychological distress of caregivers of children with incarcerated fathers might lead to adverse behavioral complications in children, though further research is needed to explain how exactly this phenomenon occurs. For instance, despite moderate correlations between caregiver distress and child behavioral complications, proportionally fewer children exhibited problems relative to the percentage of caregivers exhibiting depressive symptoms, which is perhaps reflective of the reality that other factors are involved in the relationship between distress and behavioral problems that were not captured here. The possibility also exists that, if caregiver distress indeed precedes the formation of children's problems, these problems may not have manifested yet, though this speculation can only be confirmed through longitudinal research. On that note, the current study's cross-sectional design should be recognized as a limitation in drawing causal conclusions, as it could also easily be the case that child behavioral problems reciprocally exacerbate caregiver stress. Nonetheless, the significant relationship between caregiver distress and behavioral problems in the children of incarcerated parents should not be ignored.

The current study has implications for the field in research and practice, which has generally focused on children or the child-incarcerated-parent relationship while paying little attention to caregivers. The present findings suggest that said caregivers are at an elevated risk of distress, and that this distress could translate to child behavioral problems. This notion naturally argues for more support to be provided to caregivers, since prioritizing their mental health could additionally alleviate adversity in the child. Even if the relationship is reciprocal rather than causal, caregiver distress and children's problems still appear to be closely linked, arguing for the implementation of joint caregiver-child interventions. A recent pilot intervention has taken this approach, garnering promising results [27].

Aside from the shortcomings mentioned above, additional improvements could be made to build upon this study. All the information collected was provided by the caregiver, including the children's problems—this method of measurement may not be completely accurate. To address this limitation, data could also have been collected from other sources, such as teachers or even the children themselves. The study also lacked a control group—it would invaluablely have benefitted from a comparison group of families without an incarcerated parent or with absent but not incarcerated parents to examine whether the observations are specific to families affected by parental incarceration, or generalizable

to other contexts. The recruitment method of participants needs to be kept in mind, as participants were solicited via a non-governmental organization, and findings may thus only be reflective of caregivers who have access to social support. Caregivers with no such access might plausibly suffer from worse depression, or their children might exhibit more problems; conversely, caregivers may choose not to seek support if they are less depressed, though these notions cannot be confirmed from the current study.

Nonetheless, this study contributes to the incarceration literature by stressing the importance of focusing on vulnerable caregivers, while also augmenting our understanding of the mechanisms by which caregiver distress—and parental incarceration—could translate to behavioral problems in children, namely via caregiver depression. Along with calling for more support to be provided to caregivers, the current findings also inform the design of more holistic interventions to better assist the growing numbers of families affected by parental incarceration.

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