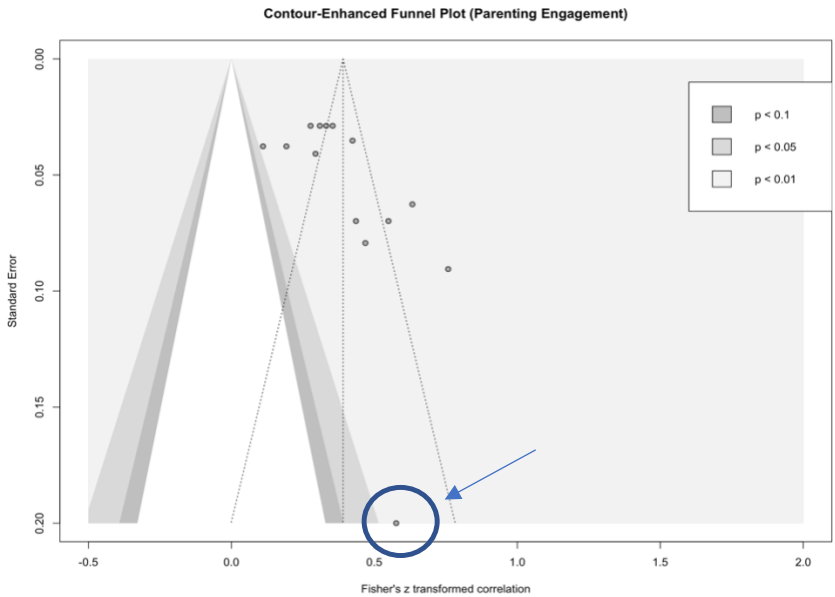
Supplement 1: Funnel plot with trim-fill

Assuming symmetry of funnel, there appears to be only one small significant study on the bottom right, and one small non-significant study is missing in the bottom left (though it is still in the positive correlation zone). Trim-and-fill analysis will correct for the bias in the effect.



Supplement 2: Studies in Meta-analyses

Alhuzimi, T. (2021). Stress and emotional wellbeing of parents due to change in routine for children with Autism Spectrum Disorder (ASD) at home during COVID-19 pandemic in Saudi Arabia. *Research in Developmental Disabilities*, *108*, 103822. https://doi.org/10.1016/j.ridd.2020.103822

Andrés-Romero, M. P., Flujas-Contreras, J. M., Fernández-Torres, M., Gómez-Becerra, I., & Sánchez-López, P. (2021). Analysis of Psychosocial Adjustment in the Family During Confinement: Problems and Habits of Children and Youth and Parental Stress and Resilience. *Front Psychol*, *12*, 647645–647645.

Babore, A., Trumello, C., Lombardi, L., Candelori, C., Chirumbolo, A., Cattelino, E., Baiocco, R., Bramanti, S. M., Viceconti, M. L., Pignataro, S., & Morelli, M. (2023). Mothers' and Children's Mental Health During the COVID-19 Pandemic Lockdown: The Mediating Role of Parenting Stress. *Child Psychiatry and Human Development*, *54*(1), 134–146. https://doi.org/10.1007/s10578-021-01230-6

Calvano, C., Engelke, L., Di Bella, J., Kindermann, J., Renneberg, B., & Winter, S. M. (2022). Families in the COVID-19 pandemic: Parental stress, parent mental health and the occurrence of adverse childhood experiences—results of a representative survey in Germany. *European Child & Adolescent Psychiatry*, *31*(7), 1–13. https://doi.org/10.1007/s00787-021-01739-0

Chen, C., Byrne, E., & Vélez, T. (2022). A Preliminary Study of COVID-19-related Stressors, Parenting Stress, and Parental Psychological Well-being Among Parents of School-age Children. *Journal of Child and Family Studies*. https://doi.org/10.1007/s10826-022-02321-1

Chen, S. D., Yu, Y., Li, X. K., Chen, S. Q., & Ren, J. (2021). Parental Self-Efficacy and Behavioral Problems in Children with Autism During COVID-19: A Moderated Mediation Model of Parenting Stress and Perceived Social Support. *Psychology Research and Behavior Management*, *14*, 1291–1301. https://doi.org/10.2147/PRBM.S327377

Chen, S.-Q., Chen, S.-D., Li, X.-K., & Ren, J. (2020). Mental Health of Parents of Special Needs Children in China during the COVID-19 Pandemic. *International Journal of Environmental Research and Public Health*, *17*(24), https://doi.org/10.3390/ijerph17249519

Chung, G., Lanier, P., & Wong, P. Y. J. (2022). Mediating Effects of Parental Stress on Harsh Parenting and Parent-Child Relationship during Coronavirus (COVID-19) Pandemic in Singapore. *Journal of Family Violence*, *37*(5), 801–812. https://doi.org/10.1007/s10896-020-00200-1

Cimino, S., Marzilli, E., & Tambelli, R. (2021). Psychological distress due to covid-19 in parents and children's emotional and conduct problems: The mediation role of couple adjustment and parenting stress. *Psychology Hub*, *38*(2), 15–22. https://doi.org/10.13133/2724-2943/17526

Cohodes, E. M., McCauley, S., & Gee, D. G. (2021). Parental Buffering of Stress in the Time of COVID-19: Family-Level Factors May Moderate the Association Between Pandemic-Related Stress and Youth Symptomatology. *Research on Child and Adolescent Psychopathology*, *49*(7), 935–948. https://doi.org/10.1007/s10802-020-00732-6

Cusinato, M., Iannattone, S., Spoto, A., Poli, M., Moretti, C., Gatta, M., & Miscioscia, M. (2020). Stress, Resilience, and Well-Being in Italian Children and Their Parents during the COVID-19 Pandemic. *Int. j. Environ. Res. Public Health (Online)*, *17*(22). https://doi.org/10.3390/ijerph17228297

Dillmann, J., Sensoy, Özlem, Schwarzer, Gudrun. (2022). Parental perceived stress and its consequences on early social-emotional child development during COVID-19 pandemic. *Journal of Early Childhood Research*, https://doi.org/10.1177/1476718X221083423

Dionisi, A. M., Smith, C. J., & Dupré, K. E. (2022). Weathering the storm alone or together: Examining the impact of COVID-19 on sole and partnered working mothers. *Journal of Community Psychology*, 10.1002/jcop.22829. https://doi.org/10.1002/jcop.22829

Fernandes, D. V., Canavarro, M. C., & Moreira, H. (2021a). Postpartum during COVID-19 pandemic: Portuguese mothers' mental health, mindful parenting, and mother–infant bonding. *Journal of Clinical Psychology*, *77*(9), 1997–2010. https://doi.org/10.1002/jclp.23130

Fernandes, D. V., Canavarro, M. C., & Moreira, H. (2021b). The role of mothers' self-compassion on mother–infant bonding during the COVID-19 pandemic: A longitudinal study exploring the mediating role of mindful parenting and parenting stress in the postpartum period. *Infant Mental Health Journal*, *42*(5), 621–635. https://doi.org/10.1002/imhj.21942

Garcia, A. S., Carotta, C. L., Brown, R., Da Rosa, P., Pravecek, B., & Carson, P. (2021). Parenting stress, self-efficacy and COVID-19 health risks as predictors of general stress among nurses. *International Journal of Nursing Practice*, *27*(6), e13009. https://doi.org/10.1111/ijn.13009

Giannotti, M., Mazzoni, N., Bentenuto, A., Venuti, P., & de Falco, S. (2022). Family adjustment to COVID-19 lockdown in Italy: Parental stress, coparenting, and child externalizing behavior. *Family Process*, *61*(2), 745–763. https://doi.org/10.1111/famp.12686

Grumi, S., Provenzi, L., Gardani, A., Aramini, V., Dargenio, E., Naboni, C., Vacchini, V., Borgatti, R., & Engaging with Families through On-line Rehabilitation for Children during the Emergency (EnFORCE) Group. (2021). Rehabilitation services lockdown during the COVID-19 emergency: The mental health response of caregivers of children with neurodevelopmental disabilities. *Disability and Rehabilitation*, *43*(1), 27–32. https://doi.org/10.1080/09638288.2020.1842520

Hai, N. N. (2021). Burnout, inter-role conflicts, and job performance among bankers who have children during social isolation. *Banks and Bank Systems*, *16*(4), 137–148.

Johnson, E., Fellowes, Rebecca, Cant, Kelsie, Hunt, Sally. (2021). Self-Assured and Sober: The Relationship Between Maternal Parenting Sense of Competence, Stress, and Alcohol Use. *Frontiers in Global Women's Health*, *2*. EuropePMC. https://search.bvsalud.org/global-literature-on-novel-coronavirus-2019-ncov/resource/en/covidwho-1678904

Johnson, M. S., Skjerdingstad, N., Ebrahimi, O. V., Hoffart, A., & Johnson, S. U. (2021). Parenting in a Pandemic: Parental stress, anxiety and depression among parents during the government-initiated physical distancing measures following the first wave of COVID-19. *Stress Health (Online)*. MEDLINE. https://doi.org/10.1002/smi.3120

Kim, M.-R., & Chae, S.-M. (2022). Factors Influencing Changes in Parenting Behavior during Coronavirus Disease 2019 Pandemic. *Journal of The Korean Society of Maternal and Child Health*, *26*(2), 80–90.

Lee, S. J., Ward, K. P., Chang, O. D., & Downing, K. M. (2021). Parenting activities and the transition to home-based education during the COVID-19 pandemic. *Children and*

Youth Services Review, *122*, 105585. https://doi.org/10.1016/j.childyouth.2020.105585

Limbers, C. A., McCollum, C., & Greenwood, E. (2020). Physical activity moderates the association between parenting stress and quality of life in working mothers during the COVID-19 pandemic. *Mental Health and Physical Activity*, *19*(Abidin, R.R. (1992). The determinants of parenting behavior. Journal Of Clinical Child Psychology, 21, 407-412.

Lionetti, F., Spinelli, M., Moscardino, U., Ponzetti, S., Garito, M. C., Dellagiulia, A., Aureli, T., Fasolo, M., & Pluess, M. (2022). The interplay between parenting and environmental sensitivity in the prediction of children's externalizing and internalizing behaviors during COVID-19. *Development and Psychopathology*, 1–14. https://doi.org/10.1017/S0954579421001309

Liu, S., Wang, X., Zou, S., & Wu, X. (2022). Adolescent problematic Internet use and parental involvement: The chain mediating effects of parenting stress and parental expectations across early, middle, and late adolescence. *Fam. Process*.

Low, N., & Mounts, N. S. (2022). Economic stress, parenting, and adolescents' adjustment during the COVID-19 pandemic. *Family Relations*, *71*(1), 90–107. https://doi.org/10.1111/fare.12623

Lucassen, N., de Haan, A. D., Helmerhorst, K. O. W., & Keizer, R. (20210816). Interrelated changes in parental stress, parenting, and coparenting across the onset of the COVID-19 pandemic. *Journal of Family Psychology*, *35*(8), 1065. https://doi.org/10.1037/fam0000908

Manuela, F., Barcos-Munoz, F., Monaci, M. G., Lordier, L., Camejo, M. P., De Almeida, J. S., Grandjean, D., Hüppi, P. S., & Borradori-Tolsa, C. (2021). Maternal Stress, Depression,

and Attachment in the Neonatal Intensive Care Unit Before and During the COVID Pandemic: An Exploratory Study. *Front Psychol*, *12*, 734640–734640.

Marzilli, E., Cerniglia, L., Tambelli, R., Trombini, E., De Pascalis, L., Babore, A., Trumello, C., & Cimino, S. (2021). The COVID-19 Pandemic and Its Impact on Families' Mental Health: The Role Played by Parenting Stress, Parents' Past Trauma, and Resilience. *International Journal of Environmental Research and Public Health*, *18*(21), https://doi.org/10.3390/ijerph182111450

Mazumdar, K., Sen, I., Gupta, P., & Parekh, S. (2021). Psychological Well-Being of Indian Mothers During the COVID-19 Pandemic: The Roles of Self-Compassion, Psychological Inflexibility, and Parenting Stress. *International Perspectives in Psychology*, *10*(3), 155–162.

Operto, F. F., Coppola, G., Vivenzio, V., Scuoppo, C., Padovano, C., de Simone, V., Rinaldi, R., Belfiore, G., Sica, G., Morcaldi, L., D'Onofrio, F., Olivieri, M., Donadio, S., Roccella, M., Carotenuto, M., Viggiano, A., & Pastorino, G. M. G. (2022). Impact of COVID-19 Pandemic on Children and Adolescents with Neuropsychiatric Disorders: Emotional/Behavioral Symptoms and Parental Stress. *International Journal of Environmental Research and Public Health*, *19*(7), 3795. https://doi.org/10.3390/ijerph19073795

Provenzi, L., Grumi, S., Altieri, L., Bensi, G., Bertazzoli, E., Biasucci, G., Cavallini, A., Decembrino, L., Falcone, R., Freddi, A., Gardella, B., Giacchero, R., Giorda, R., Grossi, E., Guerini, P., Magnani, M. L., Martelli, P., Motta, M., Nacinovich, R., … Group, M.-C. S. (2021). Prenatal maternal stress during the COVID-19 pandemic and infant regulatory capacity at 3 months: A longitudinal study. *Development and Psychopathology*, 1–9. https://doi.org/10.1017/S0954579421000766

Ren, J., Li, X., Chen, S., Chen, S., & Nie, Y. (2020). The Influence of Factors Such as Parenting Stress and Social Support on the State Anxiety in Parents of Special Needs Children During the COVID-19 Epidemic. *Frontiers in Psychology*, *11*, 565393. https://doi.org/10.3389/fpsyg.2020.565393

Seo, J.-H., & Kim, H.-K. (2022). What Is the Burnout of Mothers with Infants and Toddlers during the COVID-19 Pandemic? In Relation to Parenting Stress, Depression, and Parenting Efficacy. *International Journal of Environmental Research and Public Health*, *19*(7), 4291. https://doi.org/10.3390/ijerph19074291

Skjerdingstad, N., Johnson, M. S., Johnson, S. U., Hoffart, A., & Ebrahimi, O. V. (2022). Parental burnout during the COVID-19 pandemic. *Family Process*, *61*(4), 1715–1729. https://doi.org/10.1111/famp.12740

Spinelli, M., Lionetti, F., Pastore, M., & Fasolo, M. (2020). Parents' Stress and Children's Psychological Problems in Families Facing the COVID-19 Outbreak in Italy. *Front Psychol*, *11*, 1713–1713.

Spinelli, M., Lionetti, F., Setti, A., & Fasolo, M. (2021). Parenting Stress During the COVID-19 Outbreak: Socioeconomic and Environmental Risk Factors and Implications for Children Emotion Regulation. *Family Process*, *60*(2), 639–653. https://doi.org/10.1111/famp.12601

Stienwandt, S., Cameron, E. E., Soderstrom, M., Casar, M., Le, C., & Roos, L. E. (2022). Family Factors Associated with Hands-On Play and Screen Time During the COVID-19 Pandemic. *Child & Youth Care Forum*, *51*(6), 1091–1115. https://doi.org/10.1007/s10566-021-09668-4

Zambrana, K. A., & Hart, K. C. (2022). Riesgo Y Resilienca: Exploring the Role of Parenting Stress and Self-efficacy on Young Latino Children's Well-being and Home Learning

Experiences during COVID-19. *Journal of Latinos & Education*, 1–12.

https://doi.org/10.1080/15348431.2022.2051037

Supplement 3
Meta-regression with moderators (K at least 20)

Only caregiver mental health outcome has effect sizes that are at least 20 in numbers. None of the results were statistically significant.

Moderators of Effect Sizes

No statistically significant results

MODERATORS	CHILD INTERNALIZING	CHILD EXTERNALIZING	CGIVER MENTAL HEALTH	CGIVER NEGATIVE PARENTING BEH	CGIVER RELATIONSHIP QUALITY
Female_cgiver	-	-	pos	-	-
Age_cgiver	-	-	neg	-	-
Married	-	-	pos	-	-
Employed	-	-	neg	-	-
University	-	-	pos	-	-
Male_child	-	-	-	-	-
Age_child	-	-	-	-	-
Num_child_mean	-	-	-	-	-
Cross_sectional	-	-	smaller	-	-

Note: Only effect sizes where at least k = 20 are analyzed