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BRINGING IT ALL TOGETHER

Mediational Models

Maria A. Gartstein, Samuel P. Putnam, Mirjana Majdandžić, Soile Tuovinen, and Eric Desmarais

To recap, the JETTC project set out to integrate the psychobiological theory of temperament with broad elements of culture, through the framework of the developmental niche which captures contextual elements contributing to temperament development, and by extension, symptoms of psychopathology. In this chapter, all variables mentioned thus far were reconsidered, examining associations across different levels of influence (see Figure 17.1). That is, Hofstede’s cultural orientation dimensions were deemed most distal relative to child outcomes, and thus designated as Level 1. Next, caregiver psychology variables (socialization

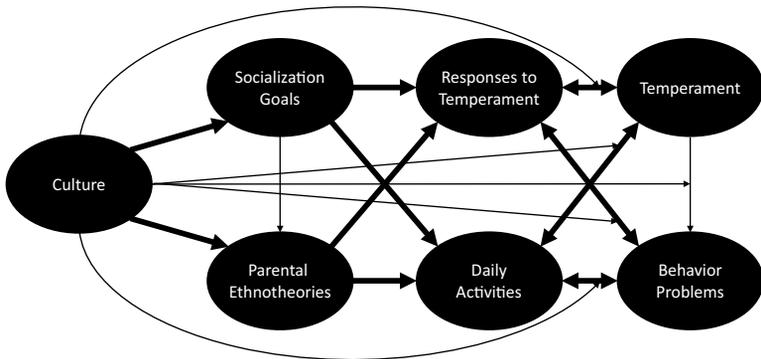


FIGURE 17.1 Mediation paths in the JETTC Conceptual Model

goals and parental ethnotheories), were designated as Level 2 variables, with Level 3 reserved for family environment factors including aspects of the daily routine and parental responses to manifestations of temperament. Child outcomes, including temperament factors and behavior problems, were designated as Level 4 constructs.

Analyses that follow are aimed at identifying potential mediators, which are defined as intermediaries that convey effects of other independent variables on the outcomes of interest (Baron & Kenny, 1986), enabling researchers to answer questions related to the “how” of developmental processes. To illustrate, in Chapter 4, we learned that Internalizing problems (INT) were higher in collectivist societies. We subsequently reported a less frequent reliance on gentle sleeping strategies in collectivist cultures (Chapter 8), and that cultures reporting greater use of these strategies also saw lower levels of INT (Chapter 14). Together, these findings invite a test of the proposal that culturally influenced bedtime routines may partially explain the tendency for higher INT in collectivist cultures and will be explored in this chapter along with other mediation possibilities.

For mediation to be considered, all variables involved must demonstrate significant correlations with one another. That is, the mediator (bedtime routine, in our example above), must be linked to the independent variable (e.g., Collectivism) as well as the outcome (e.g., child INT), and the independent variable and outcome must themselves be related. A preliminary step, therefore, was to identify all such combinations across different levels of variables in the JETTC data. Because bivariate correlations revealed very few connections between parental psychology and other variables, no mediation models involving Level 2 variables were tested. A total of 16 possible mediation models were indicated by correlations between levels 1, 3, and 4. At the level of culture, only Individualism/Collectivism and Power Distance demonstrated patterns of correlations for which mediation could be tested. At the parenting level, models involving Daily Activities Questionnaire (DAQ) variables related to sleep, discipline, and computer use were possible. Finally, child characteristics meeting these requirements included Negative Affectivity (NEG), INT, and total problems. Analyses that follow explore mediation in these 16 scenarios.

Results

The classic regression approach to mediation outlined in the seminal paper by Baron and Kenny (1986) was deemed optimal given the nature

of our analyses and sample size, which did not allow for the use of more modern analytic techniques, such as structural equation modeling. To test mediation, an initial regression equation is calculated with the independent variable as a sole predictor of the dependent variable; followed by a second equation with both the independent variable and mediator as predictors. Mediation is supported when (A) there is a significant relation of the independent variable to the dependent variable in the initial equation, and (B) the mediator is significantly related to the dependent variable when both the independent and mediating variables are in the equation. Traditionally, a third requirement is that the coefficient relating the independent to the dependent variable becomes nonsignificant in the second equation. Due to our small sample of cultures; however, this criterion is quite liberal, such that even small reductions in the variance associated with the independent variable would lead to nonsignificant results. Furthermore, even the most sensitive tests designed to quantify mediation (e.g., bootstrapping, Sobel's test) are not able to detect expected effects in samples containing fewer than 35 cases (Fritz & MacKinnon, 2007). To allow exploration of mediation-like patterns in the 14 JETTC cultures, we adapted a "rule of thumb," considering a beta reduction of > 0.20 in the independent variable to be meaningful.

Table 17.1 presents standardized coefficients for regression equations containing only the independent variable (Model 1) and the independent variable and mediator (Model 2) for the 16 mediation possibilities. Because testing mediation requires that the effects are in the same direction, two variables were reversed: Individualism/Collectivism was reversed, so that high scores represent Collectivism, and the Gentle Sleep technique scores in these equations represent low use of these techniques.

Of the 16 models tested, six followed the pattern suggesting mediation outlined above. The Individualism—"Think about It" discipline—INT, as well as the closely related Individualism—"Think about It" discipline—total problems, and Power Distance—"Think about It" discipline—INT models were consistent with this pattern of results. Three other equations with Power Distance as the independent variable and INT problems as the dependent variable presented with a mediation-type pattern: Power Distance—Gentle Sleep techniques—INT; Power Distance—late bed times—INT; and Power Distance—late wake times—INT. For the other 10 models, the independent variable beta dropped, but the effect of the mediator did not reach < 0.10 , and in other cases the independent variable beta change with the entry of the mediator was negligible.

TABLE 17.1 Regressions testing parenting as mediator of associations between cultural orientation and child outcomes

	<i>Model 1</i>		<i>Model 2</i>	
	<i>Beta</i>	<i>p</i>	<i>Beta</i>	<i>p</i>
Predicting Internalizing				
Individualism/Collectivism	0.70	0.01	0.44	0.06
Think about It			0.48	0.04
Power Distance	0.74	0.01	0.48	0.06
Think about It			0.42	0.09
Power Distance	0.74	0.01	0.53	0.02
Gentle Sleep			0.40	0.08
Power Distance	0.74	0.01	0.49	0.05
Bed time			0.42	0.08
Power Distance	0.74	0.01	0.54	0.05
Wake time			0.38	0.09
Individualism/Collectivism	0.70	0.01	0.37	0.22
Bed time			0.44	0.16
Individualism/Collectivism	0.70	0.01	0.46	0.11
Wake time			0.37	0.19
Individualism/Collectivism	0.70	0.01	0.43	0.17
Gentle Sleep			0.37	0.23
Predicting total problems				
Individualism/Collectivism	0.60	0.05	0.35	0.19
Think about It			0.46	0.09
Power Distance	0.60	0.05	0.32	0.28
Think about It			0.45	0.13
Power Distance	0.60	0.05	0.44	0.14
Wake time			0.30	0.30
Individualism/Collectivism	0.60	0.01	0.43	0.19
Wake time			0.25	0.45
Predicting Negative Affectivity				
Individualism/Collectivism	0.77	0.01	0.50	0.08
Gentle Sleep			0.37	0.17
Individualism/Collectivism	0.77	0.01	0.66	0.01
Naps			0.18	0.43
Individualism/Collectivism	0.77	0.01	0.72	0.01
Wake time			0.07	0.78
Individualism/Collectivism	0.77	0.01	0.80	0.01
Bed time			-0.05	0.86

Note: N = 14.

Discussion

The six models reflective of mediation comprise two sets: one involving “Think about It” discipline as the mediator between Individualism/Power Distance and behavior problems, and another in which Power Distance was linked to INT through aspects of parenting involving sleep.

The “Think about It” discipline technique was conceived to be reflective of an inductive approach, wherein the parent directs the child to consider her actions and the negative impact on others, with the expectation that the child will experience guilt, subsequently avoiding future rule violations (Hoffman, 1975). Our findings suggest that the frequent use of this technique provides a partial explanation for elevated levels of INT and other problems in more collectivist cultures. It is perhaps not surprising to observe parenting techniques emphasizing guilt in cultures that have strong expectations of obedience, viewed as promoting group harmony and maintaining existing hierarchies. For children raised in such cultures, however, the guilt associated with these expectations may manifest as behavioral/emotional difficulties.

Cultures with greater Power Distance (i.e., more accepting of a hierarchical social structure) had toddlers with higher INT, explained in part by later average bedtimes and wake times, as well as less frequent use of gentle techniques in facilitation of transition to sleep. Similar to earlier studies (Super et al., 1996), our results suggest that even a biological function like sleep can be shaped by cultural influences, conferring effects onto child behavior/emotions. One possibility is that parents in more hierarchically minded cultures expect their children to be active along with them later, following the parents’ lead in terms of staying awake. This pattern likely translates into later awakenings, and our data suggest has a dysregulating effect on toddlers, contributing to INT.

Of the six cultural dimensions examined, only Individualism/Collectivism and Power Distance were associated with both parent behaviors and child outcomes. Both dimensions speak to negotiating relationships between the individual and her social group, and appear to translate into elements of the family environment that are important in establishing risk, primarily for INT. A somewhat similar pattern of results emerged in a recent meta-analytic effort wherein these cultural orientation dimensions were linked to NEG (Putnam & Gartstein, 2017). Of note, these regression models did not provide evidence that parenting explained relations between culture and temperament.

It is notable that Level 2 Caregiver Psychology variables were neither robust predictors of child outcomes, nor other independent variables,

despite observed cross-cultural differences in parental socialization goals and ethnotheories (Chapter 6). The latter have been emphasized in several models of cultural effects (e.g., Harkness et al., 2011; Keller et al., 2006), yet our results do not reflect this important role. Cultural differences in caregiver psychology may be more critical in the infancy period, when the majority of existing studies were conducted (Keller, 2007; Keller et al., 2006), than during toddlerhood. Decisions concerning proximity to the infant and frequency of contact and/or feeding may reflect cultural values embedded in parents' thinking in ways that factors operating in the toddler period do not.

Clinical implications should be noted, as the toddler period signals a transition in terms of increased expectations for self-regulation and is marked by the emergence of behavioral/emotional concerns. Results of this study provide preliminary information concerning potential targets for preventative efforts, which could be implemented prior to onset of full-blown disorders.

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