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Internalizing and Externalizing Behaviors among Ukrainian Children: The Role of Family Communication and Maternal Coping

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Abstract

Objectives: This study aims to explore the relationship of mother's ways of coping with stress and family communication with the child internalizing and externalizing behaviors in Ukraine.

Methods: In a cross-sectional sample of 294 mother-and-child (9–16 years of age) Ukrainian dyads, mothers answered questions from the revised Ways of Coping Checklist, FACES Family Communication scale, Child Behavior Checklist, and questions about their sociodemographic characteristics.

Results: Robust regression results suggest increased internalizing behaviors were statistically associated with poor family communication ($b = -.19$, 95% CI $[-.30, -.08]$, $p < .01$), maternal coping by accepting responsibility ($b = 2.14$, 95% CI $[.44, 3.84]$, $p < .05$), escape-avoidance ($b = 3.79$, 95% CI $[1.00, 6.58]$, $p < .01$), planful problem solving ($b = 2.80$, 95% CI $[.61, 4.99]$, $p < .05$), child female gender ($b = -2.53$, 95% CI $[-4.22, -.83]$, $p < .01$) and lower family income ($b = -.003$, 95% CI $[-.006, -.0001]$, $p < .01$). Increased child externalizing behaviors were statistically

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Author contributions

V.B.: designed the study, assisted with the data analyses, and wrote the paper. Q.W. and S.W.: analyzed the data and wrote part of method and results sections. I.C.: contributed with the design and writing of the study.

Conflict of interest interests

The authors declare that they have no competing interests.

Informed consent

Informed consent was obtained from all individual participants included in the study.

associated with maternal seeking social support ($b = 3.25$, 95% CI [1.06, 5.43], $p < .01$), decreased positive reappraisal ($b = -1.52$, 95% CI [-2.91, -.12], $p < .05$), maternal unemployment ($b = -2.80$, 95% CI [-5.30, -.30], $p < .05$), poor family communication ($b = .46$, 95% CI [-.59, -.34], $p < .001$), and child male gender ($b = 3.48$, 95% CI [1.53, 5.44], $p < .01$). Poor family communication was linked with significantly higher increase in internalizing behaviors for girls compared to boys ($b = .17$, 95% CI [.03, .32], $p < .05$).

Conclusions: When examining child internalizing and externalizing behaviors it is important to consider the role of family communication and maternal coping.

Keywords

child mental health; children and families; coping; family communication; Ukraine

Both child internalizing and externalizing behavior problems represent a pressing public health issue (American Psychiatric Association, 2013). Often originated in childhood experiences (Ashford, Smit, Van Lier, Cuijpers, & Koot, 2008; Costello, Mustillo, Erkanli, Keeler, & Angold, 2003; Loeber & Hay, 1997; Maggs, Patrick, & Feinstein, 2008; Mazza et al., 2009), childhood internalizing problems tend to develop into adulthood depression and anxiety, and contribute to unemployment and lower academic success (e.g., Aronen & Soininen, 2000; Woodward & Fergusson, 2001), while childhood externalizing behaviors are linked with substance use, delinquency (Burlaka, 2017; Loeber & Hay, 1997; Maggs et al., 2008), and high society costs (Craig, Schumann, Petrunka, Khan, & Peters, 2011). Many Ukrainian children and families have been affected by unique factors associated with higher externalizing and internalizing behaviors, such as wars, genocide, and political turmoil (Burlaka, Serdiuk, Nickelsen, Tkach, & Khvorova, 2018); therefore, more local research is needed to understand the unique challenges and correlates of child mental health in this sociocultural context. Ukrainians have some of the highest rates of internalizing behaviors (Bromet et al., 2005). However, eight out of ten Ukrainians with serious behavior problems do not receive treatment (Demyttenaere et al., 2004) because high-quality care is often unavailable and the use of services is associated with stigma and lack of trust for service providers (Burlaka, Churakova, Aavik, & Goldstein, 2014). In spite of carrying a major burden of disease and the urgent needs, the low- and middle-income countries, such as Ukraine, have limited capacity for quality research that could guide policies and programming. Indeed, the overwhelming share of health research and development is implemented in high-income countries (Røttingen et al., 2013).

Internalizing behaviors are manifested in child symptoms of anxiety, depression and withdrawal while externalizing behaviors include aggression, defiance, and rule-breaking behaviors (Achenbach & Rescorla, 2001; Beauchaine & Hinshaw, 2008). Internalizing and externalizing behaviors may co-occur in children and adolescents (Burlaka, Bermann, & Graham-Bermann, 2015; Spear, 2000) which can be explained by the underlying neurobehavior disinhibition (Tarter, Kirisci, Habeych, Reynolds, & Vanyukov, 2004) and “an inability to constrain impulses to behave in socially undesirable ways” (Iacono, Malone, & McGue, 2008, p. 328). Internalizing behaviors can be as harmful for children as externalizing problems; however, they are more difficult to identify and measure (Cicchetti & Toth, 2014). Child aggressive and disruptive behaviors tend to be seen as problematic

while withdrawn and shy children are often perceived as having better social skills (Carter et al., 2010). There are 7.9 million children under 18 living in Ukraine (UNICEF, 2017), however, there have been very few studies examining child externalizing and internalizing behavior problems.

In considering the role of the contextual processes in child development, one might anticipate that differences in the amount of inherited transgenerational stress and the ongoing environmental hardships could lead to variations in child externalizing and internalizing behavior problems (Bronfenbrenner, 1981; Burlaka et al., 2015). Indeed, Ukrainian children grow up learning their families' histories that are often rife with trauma and tragedies such as losses related to wars, political murders, resettlements, and mass hunger killings by communist regime (Burlaka et al., 2018). Ukraine broke free from the Soviet Union in 1991. It slowly transitioned to the market economy although country's reforms have suffered from corruption and political turmoil (Central Intelligence Agency, 2018). With the average family income of \$291 per month (UkrStat, 2018), Ukraine is one of the poorest countries in Europe. Due to the ongoing military conflict in Eastern Ukraine, over two million people were internally displaced (IDMC, 2018) and many Ukrainian children lost their family members. Others experience higher stress because of greater risks for PTSD, HIV, tuberculosis, and domestic violence (Burlaka et al., 2018) and such ongoing macro-, society-level stressors as low income, lack of access to high-quality schools, health care, corrupt government, and criminality (Kudelia, 2016; OCHA, 2015) that may incapacitate and prevent Ukrainian families from attending to their plans and actions.

While there is considerable consensus about the importance of coping behaviors and evidence that such behaviors may vary according to the context of an event and how the event is appraised (Bjørkløf, Engedal, Selbæk, Kouwenhoven, & Helvik, 2013; Folkman & Lazarus, 1980), surprisingly little is known about the ways in which childhood behaviors may change as their parents resort to the emotion-focused (distancing, self-controlling, seeking social support, escape-avoidance, and positive reappraisal) coping that primarily aims to diminish or manage emotional distress or the problem-focused coping (accepting responsibility, confrontive coping, and planful problem solving) that aims to modify or manage the root of the problem (Folkman & Lazarus, 1980). During adolescence, children's increased stress leads to the increase in both proactive and avoidant approaches to coping (Seiffge-Krenke, 2000) and their coping behaviors tend to mirror those of their parents who often influence the child's appraisal of stress and the coping response to various life situations (Marceau et al., 2015; Power, 2004).

Marceau et al. (2015) reported that mothers' angry/hostile emotion-focused coping as well as avoidant coping were linked with less successful parent-child conflict resolution and subsequent increase in internalizing and externalizing symptomatology. This work is consonant with prior research which indicates that parental reliance on avoidant coping has been associated with increased child internalizing and externalizing behavior problems (Kotchick, Forehand, Armistead, Klein, & Wierson, 1996; Seiffge-Krenke, 2000). The cognitive coping theory links the negative self-attributions, such as self-criticism, negative interpretations of past experiences and expectations about the future with increased depressive symptomatology (Beck, 2002). Consistent with this model, people with

depression tend to appraise difficult life situations as futile, which reduces their motivation to act; however, people with anxiety can still see failures as possibilities and believe that perhaps with better planning they could cope with stressors in a more productive way. Furthermore, Beck (2002) noted that people with externalizing behaviors tend to ascribe wrongness to other people which leads to confrontive coping.

When examining the role of cognitive emotion regulation in behavior symptoms, Martin and Dalhen (2005) found that increased depression symptoms were associated with self-blame, acceptance of negative experiences and decreased positive appraisal. In their study, reduced positive appraisal was also significantly associated with anger. In Western samples, maladaptive perfectionism, inflexibility in personal evaluations of possible solutions, distractions, inability to attend to the planned task, and the use of emotion-focused coping have been linked with higher distress and poor emotional health (Dunkley & Blankstein, 2000; Levine et al., 2017).

Effective communication is generally regarded as a central characteristic of healthy family functioning. Families differ in such communication aspects as listening and expressing affection to each other, trying to understand and meet each other's feelings, ideas and desires, and being able to discuss issues that arise in a calm and straightforward manner (Olson, 2000). Higher-quality communication also correlates with better families' ability to accept problematic issues (Crowe & Lyness, 2014). As Jackson et al. (1998) have shown, where family communication is good, the child physical and psychosocial functioning and self-esteem are better, and coping strategies are more effective. In contrast, poor family communication and unbalanced functioning are associated with child internalizing and externalizing symptoms (Park et al., 2015; Stoutjesdijk, Scholte, & Swaab, 2016). Additionally, coercive communication patterns tend to contribute to the development of child aggression and disruptive behaviors (Burke, Pardini, & Loeber, 2008; Patterson, 1982, 2002). Children conduct problems often develop in the family environment that lacks warmth and parental sensitivity and attention to the child's feelings and needs (Tolan, Dodge, & Rutter, 2013). Therefore, family communication is an important family process that needs to be accounted for in the studies that examine child and adolescent adjustment.

Kovess-Masfety et al. (2016) pointed to the fact that global research should take into consideration sociodemographic variables as such that may explain variation in child mental health symptoms. Indeed, child gender and age may carry specific risks for the development of internalizing and externalizing problems. Young boys have been found to have more adjustment problems than girls (Burlaka et al., 2015; Zahn-Waxler, 1993). However, as children reach sexual maturity, girls tend to develop more symptoms of anxiety than boys (Allgood-Merten, Lewinsohn, & Hops, 1990; Burlaka, Kim, Crutchfield, Lefmann, & Kay, 2017; Christie-Mizell, Pryor, & Grossman, 2008; Costello, Egger, Copeland, Erkanli, & Angold, 2011; Gregory et al., 2007) and boys develop more symptoms of externalizing problems (Burlaka, 2016). Chen et al. (2009) observed that girls can be particularly sensitive to the quality of communication with their mothers and that maternal negative attributions can affect girls' mental health. Additionally, longitudinal research with Western samples aged 9 to 16 years demonstrated the transition from childhood-specific behavior problems (e.g., ADHD, separation anxiety disorder) that tend to decrease by mid-adolescence to adult

disorders, (e.g., depression and substance use disorder) that tend to increase after 12 years of age (Costello et al., 2003).

Although child behavior problems can be found across cultural contexts (Costello et al., 2011), they may be more common among children with more negative life events who live with parents that receive less social support, have a lower socioeconomic status (Ashford et al., 2008; Burlaka et al., 2015), and were exposed to early-life poverty (Barch et al., 2016). Likewise, parental culture, unemployment status, lower education and income can increase the risk of child externalizing behaviors (Dearing, McCartney, & Taylor, 2006; Deater-Deckard, Dodge, Bates, & Pettit, 1996; Scaramella, Neppl, Ontai, & Conger, 2008). In previous research, children of older mothers tended to have more behavior problems (Burlaka, Kim, et al., 2017).

We specifically hypothesized that child increased internalizing and externalizing symptoms would be associated with mother preference for avoidant and emotion-focused coping, accepting responsibility, lower scores on problem-focused coping strategies (Marceau et al., 2015; Power, 2004; Seiffge-Krenke, 2000) and poor family communication (Kotchick et al., 1996). The next hypothesis was that older children would have more behavior problems (Costello et al., 2003). Finally, we hypothesized that mother unemployment status, older age, lower education and income would be associated with increased risk of child behavior problems (Dearing et al., 2006; Deater-Deckard et al., 1996; Scaramella et al., 2008) and that negative family communication would have a stronger impact on girls than on boys (Chen et al., 2009).

Method

Participants

Our sample included 294 mother-and-child dyads. Women were between the ages of 24 and 55 years ($M = 37.12$, $SD = 5.67$). About 94% of them self-identified as Ukrainian (others were Russian, Romani people, Polish, and Armenian). Participants spent, on average, 13.23 years ($SD = 2.13$) in school. Nineteen percent had completed 11 years of education or less, 50% had vocational training, 5% had a few years of college and 26% had a university degree. About 70% of mothers in our sample were employed and earned on average \$408.01 ($SD = 261.67$) a month. Approximately 71% of the respondents were married or lived with a partner, 3% were single, 5% were widowed, 17% were divorced, and 4% were married but lived separately. Children's age was between 9 and 16 ($M = 12.49$, $SD = 2.26$). Forty-nine percent were boys. All children participating in this research studied in public schools.

Procedure

This study used a cross-sectional, community-based sample of Ukrainian mothers and children. The data were collected in 12 rural and urban communities across Eastern, Southern and Central Ukraine. Participants were invited via flyers and personal invitations from school psychologists. The study was approved by the Ukrainian Methodological Psycho-medico-pedagogical Center of the Department of Education. Trained Ukrainian social workers and psychologists obtained informed consents from parents and assents from

children, conducted face-to-face interviews with subjects on safe school premises, and collected data without personal identifiers. Interviews took place either at participants' child's school or subject's home; respondent's preferred language, Ukrainian or Russian, was used. The participants received an incentive of small fee for participation (\$12.5).

Measures

All instruments used in this study were translated from English into Ukrainian according to the recommendations of Brislin (1970), and then back-translated into English by professional translators. A group of experts that included social workers, schoolteachers and psychologists reviewed the Ukrainian version of the instruments and made suggestions regarding accuracy of items and appropriateness for the language level of schoolchildren. A final version of Ukrainian questionnaire represented the version that was agreed upon by both translators and the experts.

Demographic characteristics (independent variables).—Participants reported their children's age and gender, their own age, family income (in U.S. dollars), education (in years spent at educational institutions), marital and employment statuses, and ethnicity.

Mother's coping strategies (independent variable).—The Ways of Coping Checklist (WOC; Folkman & Lazarus, 1985) was used to measure how mothers cope with stressful life events. Participants were asked to rate on a 4-point Likert scale (0 = does not apply or not used; 3 = used a great deal) the extent to which they utilize each of the 66 coping strategies, which represent eight approaches to dealing with life stress: confrontive coping (6 items), seeking social support (6 items), planful problem-solving (i.e., problem-focused coping; 6 items); and distancing (6 items), self-controlling (7 items), escape-avoidance (8 items), and positive reappraisal (4 items), and accepting responsibility (i.e., emotion-focused coping; 4 items). The WOC has a reported α between .60 and .79 (Folkman, Lazarus, Dunkel-Schetter, DeLongis, & Gruen, 1986). In our study, the Cronbach α 's for different coping scales ranged from .58 to .80 (see Table 1).

Family communication (independent variable).—Mothers answered 10 questions about quality of family communication, using Family Communication Scale (FACES-IV; Olson, 2011). Example items used in this scale include "When angry, family members seldom say negative things about each other" and "Family members express affection to each other." The answers to these questions ranged from 1 ("strongly disagree") to 5 ("strongly agree"). The Cronbach alpha of the FACES-IV Family Communication Scale for this study was .96.

Children behavior problems.—Internalizing and externalizing behavior problems of participants' children were assessed with parent-rated Child Behavior Checklist (CBCL; Achenbach & Rescorla, 2001), a well-known and widely-used measure in child psychology. Parents answered questions describing child's internalizing (e.g., "Complains of loneliness," "Fears he/she might think or do something bad," "Secretive, keeps things to self") and externalizing (e.g., "Doesn't seem to feel guilty after misbehaving," "Hangs around with children who get in trouble," "Screams a lot") behavior problems. Questions were rated with

a 0 for “not true,” a 1 for “somewhat or sometimes true,” or a 2 for “very true or often true.” In this study, CBCL had a Cronbach α reliability of .86 for Child Internalizing Behaviors and a Cronbach α reliability of .95 for Child Externalizing Problems.

Data Analyses

Descriptive analysis was conducted to describe the sample, and multivariate analysis was used to examine the association of child age and gender, mother’s income, age, education, employment, communication and coping strategies with children’s internalizing and externalizing behaviors. The dependent variables in this study were skewed (internalizing behavior problem: skewness = 1.43, kurtosis = 5.67, $p < .001$; externalizing behavior problem: skewness = 1.31, kurtosis = 4.07, $p < .001$; Bulmer, 1979). Because the variance inflation factor (VIF) is 1.84, which is less than 10, there is no multicollinearity problem in the variables. However, the Bresuch-Pagan test detects a significant p value (chi-square = 34.44, $p < 0.001$), which indicates the heteroscedasticity problem. Therefore, two sets of robust regression models (See Model 1 and 3 in Table 2) were used in this analysis given that robust regression is less sensitive to the violations of normal distribution of dependent variables and it helps to deal with the suspicion of heteroscedasticity (Acock, 2012; Verardi & Croux, 2008). Child’s and mother’s demographic characteristics, as well as different ways of stress coping and family communication were examined in the models.

Given gender differences in developing behavior problems, a moderation analysis was conducted to examine whether the impact of family communication on child behavior problem was moderated by child gender. The interaction between family communication and child gender was included in separate models (Model 2 and Model 4 in Table 2). Both regression and moderation analyses were conducted using Stata 13. The list-wise deletion was used to deal with the missing values for the variable of internalizing behavior problems.

Results

Table 1 shows descriptive statistics of the variables used in the analysis. Results showed that the average score of family communication was 35.29 ($SD = 10.27$). In terms of the ways of coping, the average score of confrontive coping was 1.28 ($SD = 0.53$); the average score of distance coping was 1.16 ($SD = 0.56$); the average score of self-controlling coping was 1.26 ($SD = 0.46$); the average score of seeking social support was 1.34 ($SD = 0.64$); the average score of coping by accepting responsibility was 1.31 ($SD = 0.63$); the average score of escape and avoidance coping was 1.03 ($SD = 0.53$); the average score of playful problem solving coping was 1.33 ($SD = 0.61$); and the average score of positive reappraisal was 1.84 ($SD = 0.95$). The average scores of CBCL children’s internalizing behavior problem in this sample was 9.05 ($SD = 6.74$) for boys and 10.86 ($SD = 7.82$) for girls aged 9–16. The average scores of CBCL children’s externalizing behavior problem in this sample was 13.99 ($SD = 11.99$) for boys and 9.32 ($SD = 9.81$) for girls aged 9–16.

Furthermore, in the present sample 15% ($n = 23$) of girls and 8% ($n = 12$) of boys met a borderline cutoff for internalizing behavior problems (CBCL T score = 60 or above; 12% prevalence for both genders) and 9% ($n = 16$) of girls and six percent ($n = 8$) of boys (8% for both genders) were in the clinical range (CBCL T score = 63 or above; Achenbach &

Rescorla, 2001). As for externalizing problems, 9% ($n = 14$) of girls and 18% ($n = 31$) of boys met a borderline cutoff for externalizing behavior problems (CBCL T score = 60 or above, 15% prevalence for both genders) and 7% ($n = 12$) of girls and 17% ($n = 26$) of boys (12% for both genders) were in the clinical range (CBCL T score = 63 or above; Achenbach & Rescorla, 2001).

Model 1 ($R^2 = .24$, $F(15, 240) = 5.08$, $p < .001$) and Model 3 ($R^2 = .49$, $F(15, 278) = 16.32$, $p < .001$) in Table 2 showed the significant factors associated with child behavior problems. Results showed that every one unit increase in the quality of family communication was associated with decrease in children's internalizing and externalizing behavior problems by .19 points ($p < .01$) and .46 points ($p < .01$), respectively. In terms of mother's coping skills, every one unit increase in accepting responsibility, escape and avoidance, and playful problem solving was associated with the increase in child internalizing behavior problems by 2.14 points ($p < .05$), 3.79 points ($p < .01$), and 2.8 points ($p < .05$), respectively. Every one unit increase in seeking social support was associated with the increase in child externalizing behavior problems by 3.24 ($p < .01$). Every one unit increase in positive reappraisal was associated with the decrease in child externalizing behavior problems by 1.52 ($p < .05$).

In addition, several demographic characteristics showed significant impacts on child behavior problems. For example, other things being equal, boys had average internalizing and externalizing behavior problem that were about 2.53 points lower ($p < .01$) and 3.48 points higher ($p < .01$) than girls, respectively. Every one dollar increase in mother's income was statistically associated with the decrease in child internalizing behavior problem by 0.003 points ($p < .05$). Children with employed mothers had externalizing behavior problems that were 2.80 points lower than children with non-employed mothers ($p < .05$).

As shown in Model 2 in Table 2, the moderation analysis revealed the statistically significant interaction between family communication and child gender. Specifically, both child gender and family communication had significant main effects on child internalizing behavior problem ($b = -8.67$, $p < .01$; $b = -0.26$, $p < .001$, respectively). As illustrated in Figure 1, although better family communication was linked with boys' and girls' lower internalizing scores, this linear relationship appears to be stronger for girls. For child externalizing behavior problems, the interaction between family communication and child gender did not have a statistical association with child behavior symptoms (See Model 4 in Table 2).

Discussion

The present study adds to the very limited literature on the correlates of the mental health symptoms among Ukrainian children. The knowledge of the degree of association of child behavior problems with family communication and mother's coping strategies may be particularly useful for helping professionals engaged in the prevention and intervention programming with Ukrainian populations. Because child mental health is a global issue, it is important to understand the child behavior correlates across different cultural contexts (Kessler & Bromet, 2013).

Our results suggest there is a link between some coping strategies and increased child mental health symptomatology. Maternal coping by accepting responsibility was significantly related with child internalizing problems but had no statistical association with child externalizing behaviors. Specifically, mothers who reported higher use of such coping techniques as self-criticism, apologizing and making up for doing something wrong, believing that they had brought the problem on themselves and promising themselves that things would be different next time (Folkman & Lazarus, 1980) tended to have children who were likely to have fears of doing bad, prone to feel too guilty, nervous, shy, and withdrawn (Achenbach & Rescorla, 2001). In this study, children's internalizing problems to the large extent mirrored maternal coping approaches.

The maternal coping by seeking social support was not related to child internalizing problems but had a significant association with child externalizing behaviors. Mothers who reported higher scores on child aggression and rule-breaking behaviors were more likely to use such strategies as asking a relative or a friend for help and advice, trying to identify a concrete solution to the problem, and sharing their feelings with others (Folkman & Lazarus, 1980). These results suggest that mothers of children with externalizing behaviors might be more likely to engage in the outwardly coping behaviors. Indeed, externalizing behaviors may get transmitted from parents to children via such vehicles as genetic transmission, modeling, and identification processes (Brook, Lee, Finch, & Brown, 2012). These results potentially reflect the dual nature of outwardly behaviors when children use them to engage in negative functioning while their parents utilize them as a positive coping approach.

We also found that maternal planful problem solving coping had a significant relationship with child internalizing but not externalizing behaviors. In this sample, mothers who reported higher scores on such child internalizing behaviors as worrying, having a great deal of self-consciousness, and trying to be perfect (Achenbach & Rescorla, 2001), were more likely to report being responsible for finding a solution, trying to draw from previous experiences, making a plan and making things work (Folkman & Lazarus, 1980). The availability of high-quality mental health services remains limited in Ukraine (Burlaka, Churakova, Aavik, & Goldstein, 2014) and in the case of psychological problems such as depression and anxiety, parents tend to be one of the main sources of help (Burlaka, Churakova, Aavik, Staller, & Delva, 2014). These data suggest children with internalizing symptoms are likely to have mothers who are inclined to learn from past events to improve their future.

Furthermore, children of mothers with anxiety and depression are more likely to develop internalizing symptoms than children of mothers without internalizing symptoms (Beauchaine & Hinshaw, 2008; Coyne & Thompson, 2011). It is not uncommon for individuals who experience such symptoms to overinternalize and overinvolve in the feelings of guilt and anxiety experienced by significant others (Graber & Sontag, 2009). Next, consistent with prior research showing that individuals with higher levels of anxiety are more likely to assume personal responsibility for failure outcomes than the persons with lower levels of anxiety (Arkin, Appelman, & Burger, 1980), in our sample, mothers of children with more internalizing behaviors were more likely to cope by accepting responsibility.

Maternal coping by escape and avoidance was another coping strategy significantly associated with the child internalizing behaviors. These results support Kotchick et al. (1996) findings, which demonstrated the harmful effects of avoidant coping by either parent on increased internalizing and externalizing behaviors in children. Additionally, we found a significant negative relationship between child externalizing symptoms and maternal use of positive reappraisal. There is a strong evidence linking emotion regulation with cognitive and behavioral consequences. While coping by positive reappraisal does not attempt to change the stressful situation, changing the way one thinks about the situation is essential for decreasing the impact of the pressure that arises from the frustrating life circumstances (Gross, 2002).

Gross's experimental research suggests that individuals who engage in reappraisal tend to share more of the positive and negative emotions than those who cope by suppressing emotion-expressive behaviors. Thus, the reported lower use of positive reappraisal in the present study may have resulted in fewer instances of socio-emotional guidance that children need from their parents to be able to adjust their behaviors. In light of this research, it is crucial to help parents enhance positive responsiveness that may help reduce children's physiological activation and neurobehavioral disinhibition related to child conduct problems (Beauchaine, Katkin, Strassberg, & Snarr, 2001; Sher & Trull, 1994). Moreover, positive parenting that includes emotional feedback to the child and active acknowledgement of the child's positive behaviors has been linked with fewer externalizing problems among Ukrainian children (Burlaka, 2016). Further, helping parents master positive reappraisal techniques was related to reduced child externalizing behaviors in the clinical research (David, David, & Dobrea, 2014).

As others have also reported (e.g., Jackson et al., 1998; Stoutjesdijk et al., 2016), our results indicated that healthy family communication was significantly associated with better children's mental health. Mothers who reported family members being better at listening, calmly discussing issues that arise and trying to understand the feelings and ideas of other family members (Olson, 2000) tended to have children with fewer internalizing and externalizing symptoms.

The relationship between child age and child mental health did not reach significance in the models accounting for maternal demographics, coping, and family communication dynamics. However, there was a significant negative relationship between family income and child internalizing behaviors. Children who live in poor Ukrainian families often experience the lack of basic necessities, such as food and cloths. They can become easy targets for children from wealthier and more powerful families. Children raised in families with fewer resources are faced with the need to compare their standards of living with that of their more affluent peers. Seeing these differences, children may experience feelings of shame and hopelessness and choose not to socialize with peers, not to invite them over to their house and not to visit other families. Essentially, chronic poverty is a social risk factor that can undermine children's perception of control (Dearing et al., 2006) and lead to depression (Rubenstein, Alloy, & Abramson, 2016; Wadsworth, Evans, Grant, Carter, & Duffy, 2016).

Burlaka, Graham-Bermann and Delva (2017) previously reported that Ukrainian mothers from lower income homes experienced higher intimate partner violence (IPV) and a less balanced family functioning which had negative effects on parenting. In the present study, children who lived in less economically advantageous households were more likely to worry, fear school, feel unloved, and worthless. Mothers who reported lower family income had children who would rather be alone, would not talk, were more shy, timid, sad, and withdrawn. Although family income was associated with child internalizing behaviors, the relationship between family economic situation and child externalizing problems was not significant.

Maternal education and age had no significant association with child mental health. However, maternal employment was another factor that was negatively related to child mental health status in this sample. Unemployed mothers tended to have children who were more aggressive and were more likely to break rules. These findings are consistent with previous research with Ukrainian families that linked maternal unemployment with higher maternal IPV victimization (Burlaka, Grogan-Kaylor, Savchuk, & Graham-Bermann, 2017) and more child externalizing symptoms (Burlaka, 2016).

The relationship between maternal employment status and child internalizing problems was not significant. Although family income and maternal employment are related concepts, in this study, they were associated with different domains of child mental health. Family income is a characteristic of the entire family environment and being raised in the wealthier homes had a protective effect on children by reducing their internalizing symptomatology. In contrast, mother employment status is a characteristic contingent on the match between profiles of mother personal and professional skills and current conditions and requirements of the job market.

The moderation analyses revealed that the positive family communication was more helpful for the girls' than the boys' internalizing problems. One of the possible explanations for this finding can be the fact that in this sample, girls had a greater variance in the internalizing behavior which made it more sensitive for statistical analyses. Although not tested in this study, another explanation could lie in the parental use of negative attributions that has been previously linked with increased child internalizing behaviors (Chen et al., 2009). Girls can be particularly sensitive to messages and evaluations received from mothers and the positive bonding with maternal figure can be especially beneficial for girls' adjustment. Therefore, a greater emphasis on improvement of intra-family communication skills can be very helpful for the Ukrainian school-age girls' anxiety and depression.

Limitations and Future Research Directions

The present study provides unique findings on the relationship between family communication, maternal coping strategies and child mental health symptoms in a Ukrainian sample of 294 mother-and-child dyads. Still, these results need to be interpreted in the light of limitations of the study's cross-sectional design. Without longitudinal data, we have a limited ability to ascertain whether specific maternal coping strategies have led to development of specific child mental health symptoms or the child behaviors have resulted in the need for mothers to exercise particular coping behaviors. Folkman and Lazarus (1980)

underscore the shifting nature of the coping behaviors and the need for the same person to rely on different coping strategies depending on the changing context and opportunities for change. The understanding of coping as a shifting process poses additional complications to research on coping in the Ukrainian sociocultural context which has seen an abundance of recent political and economic challenges. Furthermore, relying solely on mothers' reports may introduce common method biases (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003), such as ascribing desirable qualities to their own children or answering all questions under the influence of a particular mood. Future research should investigate the relationship between these constructs based on perspectives from multiple informants, such as children, fathers and other family members. Additionally, these results reflect the relationship between parent and child behaviors in families that have children from 9 to 16 years of age. It is not clear whether the results would be the same for other demographic groups. Finally, we hope that future research projects will include participants from Ukraine as well as other countries to be able to conduct the measurement invariance tests among different cultural groups as well as properly situate the Ukrainian results in the context of Western findings.

Notwithstanding the above-described limitations, the present research makes a critical contribution to the literature on the relationship between maternal coping, family communication and child mental health symptoms. As one of the low and middle-income countries (LMIC), Ukraine represents a setting that is less appealing for the international research community. Nonetheless, research conducted in such settings uniquely catches the nuances of human experiences and functioning affected by the on-going adversity. The finding that the poverty and unemployment were associated with impairments in the child psychosocial functioning highlights the need to further explore the role of adverse experiences early in life in order to help children follow the best possible developmental trajectories. These results have direct implications for other global communities that struggle with similar social and economic conditions. Furthermore, as a relatively young country, Ukraine is still in the process of developing sustainable services for children and families (Burlaka et al., 2018). The results from this study underscore the importance of building the evidence base for the feasible child mental health prevention models that would target family communication and match maternal coping behaviors to the child mental health profiles.

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Ethical approval

All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. The study was approved by the Ukrainian Methodological Psycho-medico-pedagogical Center of the Department of Education.

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Figure 1.
Association of Family Communication with Child Internalizing Behavior Problems by Child Gender

Table 1

Sample Sociodemographics and Major Study Variables

	Mean	SD	Range	Cronbach α
Age	12.49	2.26	9–16	-
Male	0.49	0.50	0–1	-
Family income (in dollars)	408.01	261.67	12–2208	-
Mother age	37.12	5.67	24–55	-
Mother education (years)	13.23	2.13	4–16	-
Mother employment	0.70	0.46	0–1	-
FACES Family Communication	35.29	10.27	10–50	0.96
WOC Confrontive	1.28	0.53	0–2.83	0.64
WOC Distancing	1.16	0.56	0–3	0.72
WOC Self-Controlling	1.26	0.46	0–2.57	0.58
WOC Seeking Social Support	1.34	0.64	0–3	0.80
WOC Accepting Responsibility	1.31	0.63	0–3	0.71
WOC Escape & Avoidance	1.03	0.53	0–2.5	0.72
WOC Planful Problem Solving	1.33	0.61	0–2.83	0.79
WOC Positive Reappraisal	1.84	0.95	0–4.25	0.77
CBCL Internalizing Behaviors	9.98	7.36	0–40	0.86
CBCL Externalizing Behaviors	11.62	11.17	0–47	0.95

Table 2

Results of Robust Regression Analysis and Moderation Analysis

	CBCL Internalizing (<i>n</i> = 256)				CBCL Externalizing (<i>n</i> = 294)			
	Model 1		Model 2		Model 3		Model 4	
	Beta coefficient	SE _{robust}	Beta coefficient	SE _{robust}	Beta coefficient	SE _{robust}	Beta coefficient	SE _{robust}
WOC Confrontive	-1.89	1.20	-183	1.22	2.09	1.44	2.08	1.42
WOC Distancing	-2.09	1.10	-2.05	1.10	1.29	1.34	1.29	1.33
WOC Self-Controlling	-0.30	1.45	-0.15	1.45	-0.14	1.54	-0.22	1.54
WOC Seeking Social Support	-0.21	1.02	-0.05	0.99	3.25**	1.11	3.06**	1.11
WOC Accepting Responsibility	2.14*	0.86	2.18*	0.84	-0.06	1.22	-0.17	1.21
WOC Escape & Avoidance	3.79**	1.41	3.67*	1.41	0.21	1.41	0.31	1.39
WOC Planful Problem Solving	2.80*	1.11	2.60*	1.10	-2.02	1.13	-1.86	1.09
WOC Positive Reappraisal	-0.03	0.75	-0.10	0.75	-1.52*	0.71	-1.47*	0.70
FACES Family Communication	-0.19**	0.06	-0.26***	0.07	-0.46***	0.06	-0.40***	0.08
Child age	-0.21	0.18	-0.15	0.18	0.27	0.23	0.23	0.24
Child male gender	-2.53**	0.86	-8.67**	2.87	3.48**	0.99	9.10	4.69
Family income	-0.003*	0.001	-0.003*	0.001	-0.003	0.002	-0.003	0.002
Mother age	0.02	0.08	0.006	0.09	-0.05	0.09	-0.04	0.09
Mother education (years)	-0.39	0.18	-0.37	0.29	-0.44	0.27	-0.45	0.27
Mother employment	-0.23	1.10	-0.46	1.10	-2.80*	1.27	-2.57*	1.26
Family communication x child gender			0.17*	0.07			-0.16	0.12
Constant	21.89***	5.83	23.64***	5.94	30.62***	5.38	28.51***	5.70

Note. SE_{robust} = robust standard error.

* $p < .05$;

** $p < .01$;

*** $p < .001$