

Collaborative youth mental health service users, immigration, poverty, and family environment

Lucie Nadeau^{1,2}, Vanessa Lecompte¹, Janique Johnson-Lafleur², Annie Pontbriand² & Cécile Rousseau^{1,2}

¹Department of Psychiatry, Faculty of Medicine, McGill University, CIUSSS du Centre-Ouest-de-l'île-de-Montréal (CLSC Parc Extension), 7085, Hutchison, Montréal, QC H3N 1Y9, Canada. E-mail: lucie.nadeau@mcgill.ca

²Youth Mental Health, CIUSSS Centre-Ouest-de-l'Île-de-Montréal, Montréal, QC, Canada

Background: This article examines the association between immigration, poverty and family environment, and the emotional and behavioral problems reported by youth and their family receiving mental health (MH) services within a collaborative care model in a multiethnic neighborhood. **Method:** Participants in this study were 140 parent–child dyads that are part of an ongoing longitudinal project looking at the association between individual, familial, social and organizational factors, and outcomes of youth receiving MH services in local health and social service organizations in the Montreal area. Measures included in this study were collected at the initial phase of the longitudinal project (Time 0). Parents completed a sociodemographic questionnaire and the Family Environment Scale (FES), and both parents and children completed the Strength and Difficulties questionnaire (SDQ). **Results:** Results suggest that the family environment, especially family conflicts, has a significant role in the MH problems of children seeking help in collaborative MH services. In this specific population, results also show a trend, but not a statistically significant association, between poverty or immigration and emotional and behavioral problems. They suggest as well that boys show more MH problems, although this could be a contamination effect (parents' perspective). **Conclusions:** The results support the importance of interventions that not only target the child symptomatology but also address family dynamics, especially conflicts. Collaborative care models may be particularly well suited to allow for a coherent consideration of family environmental factors in youth mental health and to support primary care settings in addressing these issues.

Key Practitioner Message

- Poverty and negative family environmental factors have been described as central stressors associated with behavioral and emotional problems in youth, whereas the healthy migrant hypothesis has framed immigration as a protective factor.
- The study results support that family conflicts have a significant role in behavioral and emotional problems in youth and that family environment is more central as a contributing factor compared with poverty and immigration.
- Yet, the study results support the need to take into account the specific characteristics of the immigrant population studied.
- Interventions aiming at engaging families and transforming family environment are promising in youth mental health (YMH), as well as collaborative models of services supporting primary care settings in addressing family issues.

Keywords: Family factors; poverty; immigrants; psychopathology; service development

Introduction

Mental health (MH) issues in children and adolescents occur within a whole array of environments. A growing literature is looking into the influence of various environmental factors on the prevalence and outcomes of MH problems in this population, to understand their potential contribution, in parallel or in conjunction with individual factors. Whereas environmental factors have first been studied in silo, the literature is now looking into the interplay of these variables, putting emphasis on how

the environment where MH episodes occur should be understood as a coherent construct of its different elements. A better understanding of the interactions of specific environmental factors will help inform clinical milieux on how to meaningfully consider these factors in YMH interventions and help individualize treatments tailored to specific needs of a particular population and its youth. In a time of standardization of treatment, optimization of services, and growing recognition of the importance of collaborative care between first-line services and MH expertise to increase access to care, it is

foremost important to understand the wider context of the intervention when a child experiences MH symptomatology, in order to better orient overall treatment approaches and treatment availabilities. This article describes the emotional and behavioral problems reported by youth and their family receiving MH services within a collaborative care model in a multiethnic neighborhood in Montreal, Canada.

The intervention context: social and familial variables

Among environmental factors, socioeconomic status and family environment are two domains that have received important attention and are considered central when examining stressors in YMH. Since the Great Smoky Mountains study showed poverty as the strongest demographic correlates of 'serious emotional disturbances' in children (Costello et al., 1996), there has been recurrent evidence of the association between low income and higher risk of behavioral and emotional problems for children (Carter et al., 2010; Ponnet, 2014), with stronger evidence for behavioral problems (Bor et al., 1997). Yet, studies are showing how the impact of poverty is mediated by other factors (Samaan, 2000), notably pointing toward the contribution of parental distress and family stress (Ponnet, 2014). Family environment is also recognized, in itself, as having the potential to be a source both of resilience and adversity for youth (Kumpfer, 2002; Repetti, Taylor, & Seeman, 2002).

In view of increasing globalization and populations becoming more culturally diverse, it becomes also important to understand how the particular experience of immigrants interacts with socioeconomic status and family environment, when compared with nonmigrants. A systematic review of literature in 2008 (Stevens & Vollebergh) pointed toward an impact of migration varying according to the characteristics of the migrant group and of the host country. It underlined as well the importance of more standardized research on immigrant children. Beiser, Hou, Hyman, and Tousignant (2002) looked into the association between poverty and migration, and their study showed that migrant children were twice as likely to live in low-income families, yet they had lower levels of emotional and behavioral problems, in accordance with the healthy migrant hypothesis (McKinlay, 1975). In the long term, the effect of poverty was mediated by family and parental factors.

The main goal of the article is to study the association between the three environmental factors of immigration, socioeconomic status and family environment, and the emotional and behavioral problems in youth consulting in collaborative MH care setting.

Method

Participants

Participants in this study were 140 parent-child dyads (104 mothers, 36 fathers; 86 boys, 54 girls) receiving YMH services in local health and social service organizations in the Montreal area. Seven such organizations are partners on the research. Participants are part of an ongoing longitudinal project looking at the association between individual, familial, social, and organizational factors and outcomes of youth receiving MH services in these organizations. The project uses a multiinformant design. This article reports on a substudy aiming at providing a

description of these youths. Measures included in this study were collected at the initial phase of the longitudinal project (Time 0). Parents completed a sociodemographic questionnaire and the Family Environment Scale (FES), and both parents and children completed the Strength and Difficulties questionnaire (SDQ). Children had a mean age of 10.4 years ($SD = 3.1$ years). All parents who completed all questionnaires were included in the sample of this study, as well as all children who completed the SDQ.

The final sample is heterogeneous with respect to background variables. Fifty-one percent of the families were living under the poverty line. We used the income adjusted for the number of people in the household as the variable to operationalize the poverty line, considering this adjusted income as a more accurate indicator of economic stress (Gouvernement du Québec, 2014). Regarding parental education, 14% had a high school degree or less, 37% had some professional training or college degree, 45% had a university degree, and 4% did not answer. Thirty-one percent of children were living in a single-parent family, 58% were living with both parents, and the rest did not provide this information. Concerning immigration, 58% of the parents were born outside of Canada, and 39% of these parents have been living in Canada for <10 years.

Procedure

Health-care workers presented the research project to families receiving YMH services and requested their agreement to be contacted by the research team. Parents who agreed to be contacted were invited to participate with their children after a brief presentation describing participant involvement and general study aims. Once the families agreed to participate, parents were met either at home or at the clinic, according to participants' preferences. During appointments, bilingual research assistants obtained informed consent from parents and then administered questionnaires in English or French. Certain families needed the assistance of a professional interpreter and were provided one. Research was conducted in compliance with the ethical board of the different recruitment sites.

Measures

Demographic information. A sociodemographic questionnaire collected information on age and gender of the child, immigration status, family income, parental education, and marital status. The two last factors are used to describe the sample, but not included in reported statistical analysis. The sample is rather homogenous in terms of parental education (overly high percentage of parents with a high degree of education). Analysis did not lead to significant statistics, likely in relation to this homogeneity. Marital status was not included in further analysis because of missing data.

Family environment. The FES (Moos & Moos, 1994) was used to measure perceived family environment reported by the parent. The Scale consists of 90 true or false items that measure the social-environmental characteristics of families, namely a relationship dimension, a personal growth or goal orientation dimension, and a system maintenance dimension. For this study, the FES relationship dimension was used, which includes three subscales: cohesion, expressiveness, and conflict. Parents completed two subsets of the questionnaire, namely the cohesion and conflict subscales, which were more relevant for our study as well as having best reliability within a transcultural context (Omar et al., 2010).

Emotional and behavioral problems. Emotional and behavioral problems were measured with the SDQ (Goodman, 1997), a 25-item questionnaire that describes behavioral and emotional problems in children and adolescents aged from 3 to 16 years old. Each item is scored 0–2 in response to 'not true', 'somewhat true', or 'certainly true'. The items are divided into five scales generating scores for emotional symptoms, conduct problems, hyperactivity/inattention, peer relationship problems, and prosocial behaviors. An overall difficulty score and a

total impact score (*impairment*) are available. For this project, the total difficulties score and the impact score were used. The total difficulties score is generated by summing scores from all scales except the prosocial scale, and the overall impairment score is obtained by summing the scores of the items on overall distress and impairment. A higher score indicates more difficulties and greater overall impairment. This assessment tool has demonstrated good reliability and adequate validity, including with immigrant populations (Goodman, Patel, & Leon, 2010). Both parents and children filled out the SDQ.

The operationalization of the different dependent and independent variables are presented in Table 1, and descriptive statistics for categorical and continuous study variables of interest are presented in Table 2.

Results

Analysis plan

First, intercorrelations between all continuous variables (child age, family cohesion, family conflict, total difficulty score, and overall impact score) were examined to identify potential associations. Three sets of Independent *t*-test were then performed to examine mean differences for child emotional and behavioral problems as a function of the categorical variables of (a) child gender, (b) family income, and (c) parental immigration. Two multiple regressions analyses were then performed to examine the relation between predictors (child age, child gender, family cohesion, family conflict, family income,

Table 1. Description of variables

Description (operationalization)	
Categorical independent variables	
Child gender	Male/female
Socioeconomic status	Under/over the poverty line, using the income adjusted for the number of people in the household
	Number of people in the household
	Cutoff measure of low income
	1 22,720\$
	2 32,131\$
	3 39,352\$
	4 45,440\$
	5 50,803\$
	6 55,652\$
Immigration	Parents are immigrants/parents are nonimmigrants
Continuous independent variables	
Child age	Number of years
Family cohesion	The degree of commitment, help, and support family members provide for one another (Moos FES subscale)
Family conflict	The amount of openly expressed anger and conflict among family members (Moos FES subscale)
Dependent variable (Goodman SDQ)	
Total difficulty score	Sum of scores from emotional symptoms, conduct problems, hyperactivity/inattention, and peer relationship problems subscales Range: 0–40
Overall impact score	Sum of the overall distress and impairment in different domains (home life, friendships, classroom learning, leisure activities) Range: 0–10

FES, Family Environment Scale; SDQ, Strength and Difficulties questionnaire.

Table 2. Descriptive statistics for categorical and continuous study variables

Variables	M (SD)	Range
Age (years)	10.41 (3.10)	4–17
Family cohesion score	7.53 (1.61)	1–9
Family conflict score	2.89 (1.91)	0–8
Family income (categories)	35,000\$–40,000\$	–20,000\$ to 60,000\$+
Immigration (years)	11.29 (7.87)	1–49
Total difficulties score (parent report)	15.85 (6.58)	2–31
Total impact score (parent report)	3.69 (2.69)	0–10
Total difficulties score (child report)	13.54 (5.55)	2–29
Total impact score (child report)	4.30 (3.52)	0–15

and parental immigration) and child difficulties and impairment as dependent variables.

Descriptive statistics for continuous variables

Associations between continuous variables have been examined using Pearson correlations. For emotional and behavioral problems reported by the parent, results indicated that less family cohesion was related to more difficulties, expressed by the total difficulty score, but was not related to overall impairment (impact score). Family conflict was also related to greater difficulties and not related to overall impairment. These associations, thus, revealed that family environment (cohesion and conflict) was related to the total difficulties score, but not to the overall impact score. For emotional and behavioral problems reported by the child, results indicated that child age and parent-reported difficulties scores were related to overall impairment reported by the child, indicating that there is more impairment as the child is older. No other significant correlations were found between variables. Correlation coefficients and descriptive statistics for continuous variables are presented in Table 3.

Mean differences between child emotional and behavioral problems and categorical variables

Mean differences have been examined with an Independent *t*-test between child emotional and behavioral problems and categorical independent variables (gender, socioeconomic status dichotomized into above/under poverty line, and immigration). Mean scores and standard deviations are presented in Table 4.

According to the parent’s report

With respect to gender, results indicated significant mean differences for the total difficulties score as reported by the parent, indicating that level of overall difficulties was lower for girls than for boys. No mean differences were found for the overall impairment score as a function of child gender, indicating a similar score between boys and girls.

With respect to family income, results for the total difficulties score and the overall impact score reported by the parent were not statistically significant, but approached significance. Children living in families under the poverty line tended to show greater difficulties, whereas children above the poverty line tended to

Table 3. Pearson correlations for independent and dependent continuous variables

Variables	1	2	3	4	5	6	7
1. Child age	–						
2. Family cohesion	–.26**	–					
3. Family conflict	.07	–.23**	–				
4. Total difficulties score (parent report)	.01	–.17*	.24*	–			
5. Overall impact score (parent report)	.04	–.05	.11	.50**	–		
6. Total difficulties score (child report)	.09	–.03	.13	.34*	.02	–	
7. Overall impact score (child report)	.27**	–.05	.04	.34**	.03	.40**	–

* $p < .05$; ** $p < .01$.**Table 4.** Independent sample *t*-tests for total difficulties scores and overall impact score as a function of child gender, family income, and parental immigration

Variables	<i>M</i> (<i>SD</i>)	<i>df</i>	<i>t</i> -Value	<i>p</i>
Total difficulties score (parent report)				
Boy	17.09 (6.30)	138	2.78	.01**
Girl	13.94 (6.71)			
Under poverty line	16.90 (6.83)	138	1.78	.08†
Above poverty line	14.83 (6.44)			
Immigrant	15.43 (6.97)	138	0.91	.37
Nonimmigrant	16.45 (5.98)			
Overall impact score (parent report)				
Boy	3.87 (2.81)	138	1.16	.25
Girl	3.33 (2.46)			
Under poverty line	3.33 (2.63)	138	–1.85	.07†
Above poverty line	4.20 (2.78)			
Immigrant	3.35 (2.66)	138	1.76	.08†
Nonimmigrant	4.16 (2.66)			

** $p < .01$; † $p < .08$.

show greater overall impairment. However, these last two results were not statistically significant, but marginal.

When examining association with immigration (i.e. if the parent immigrated or not) and child difficulties and overall impairment reported by the parent, results indicated no significant mean differences for the total difficulties score, indicating that level of difficulties is similar for children of immigrant and nonimmigrant parents. However, marginal mean differences were found for the overall impairment score as a function of immigration, indicating a tendency for less overall impairment for children of parents who immigrated to Canada. However, this last result was again not statistically significant, but marginal.

According to the child

Mean differences have been examined with an Independent *t*-test between child emotional and behavioral problems as reported by the child and the same categorical independent variables of gender, socioeconomic status – dichotomized into above/under poverty line – and immigration. Results indicated no significant differences between self-reported difficulties and impairment as a function of these three variables (therefore not reported in Table 4).

Relationship between predictors and child emotional and behavioral problems

Two multiple regression models examined the relationship between predictor variables and parental report of child difficulties in the first model and parental report of overall impairment in the second model. In both models, variables were entered based on their theoretical association with child difficulties and overall impairment. Variables were entered in the following order: child age, child gender, family cohesion, family conflict, family income, and immigration. Variables were either continuous or dichotomous. For the three dichotomous variables (child gender, income, and immigration), variables have been coded with 0 and 1, 0 representing the comparison group. Results are presented in Table 5.

Results of the first model, with the total difficulties score as the outcome, indicated that the overall model was significant and explained 12% of the variance, $R^2 = .12$, $F(6, 134) = 2.91$, $p < .05$. We then verified to what degree each predictor was related to the outcome and made a contribution to the model. When examining which predictors contributed substantially to the model's ability to predict the outcome, results indicated that child gender ($\beta = -.19$, $p < .05$) and family conflict ($\beta = .21$, $p < .05$) significantly contributed to the model explaining the variance in total difficulties score beyond other predictors. Being a boy and experiencing family conflict contributed to the child having more difficulties.

Results of the second model, with overall impairment score as the outcome, indicated that the overall model was nonsignificant, but marginal, $R^2 = .09$, $F(6, 134) = 1.95$, $p < .08$. We still verified to what degree each predictor was related to the outcome and made a contribution to the model. Results indicated that family

Table 5. Multiple linear regression predicting total difficulties score and overall impact score

Predictors	Total difficulties score (parent report)		Overall impairment score (parent report)	
	<i>B</i>	β	<i>B</i>	β
Child age	0.01	.01	0.00	.00
Child gender	–1.41	–.19*	–0.33	–.11
Family cohesion	–0.31	–.08	–0.06	–.03
Family conflict	0.75	.21*	0.29	.20
Family income	–1.61	–.12	0.96	.18
Parental immigration	1.88	.14	0.59	.11
R^2	.12		.09	
<i>F</i> for change in R^2	2.91*		1.95†	

* $p < .05$; † $p < .08$.

conflict ($\beta = .20, p < .05$) had a tendency to significantly contribute to the model. However, considering that the significance level of the overall model was marginal, this last result needs to be interpreted with caution.

Discussion

The results suggest that family environment, especially family conflicts, has a significant role in the MH problems of children seeking help in collaborative MH services. The literature on family environment has in fact developed around the notions of family cohesion and family conflicts and explored their link to symptoms in youth. Barber and Buehler (1996) found cohesion to be negatively associated with internalized and externalized adolescents' problems, and Repetti et al. (2002) described how family characteristics (such as conflict, aggression, and unsupportive relationships) interacted with biological vulnerability of the child to increase risks of MH problems.

The results of this study support this literature highlighting the overall contributions of family variables to children's behavioral and emotional difficulties. If family environment is an important contributing factor to children emotional and behavioral problems, MH services ought to find ways to impact on this environment. It is, therefore, likely that there would be a great improvement in care if primary care services would be equipped to address these issues. This could involve providing tools to both assess and address family dynamics, and in particular family conflicts within the primary care clinical encounter. Given the frequently reported association between poverty and emotional and behavioral problems in children (Costello et al., 1996), it is interesting to note that in this study, no such association stands out, although a marginally significant mean difference was found for the total difficulties score and the impact score. This may point to focus particularly on how socioeconomic status interacts with family dynamics, rather than considering poverty by itself.

The results also tend to support the healthy migrant hypothesis (McKinlay, 1975), given that migrant children tend to be less impaired than nonmigrant children. As proposed by Lu (2008), this may illustrate that, rather than the effect of migration per se, it is the specific resettlement conditions and characteristics of the migrant populations that may influence their relative degree of social adjustment and impairment. In this study, the high degree of education of parents may have played a protective role (Walker et al., 2011).

Studies on migration and family environment have recently addressed the concepts of family cohesion and conflicts. In migrant families, divergence over cultural values between parent and children – coined as intergenerational cultural dissonance (Choi, He, & Harachi, 2008) – has been shown to indirectly predict problem behavior by increasing parent–child conflicts, itself weakening parent–child bonding. A study (Marsiglia, Parsai, & Kulis, 2009) has shown familism – sense of duty and responsibility toward one's family (Updegraff, McHale, Whiteman, Thayer, & Delgado, 2005) – to be a strong protective factor against aggressive behavior, conduct problems, and rule breaking. Family cohesion was also found to be a protective factor against conduct problems. Another study by Leidy, Guerra, and Toro (2010)

pointed toward other factors related to immigration with an impact on family cohesion: power imbalance developing between parent and child, difficulty communicating with schools, loss of extended family, and discrimination.

The results of this study somewhat contrast with this literature and could indicate that the association between family environment and immigration needs further disentangling. Some literature explored cultural and contextual multifactorial links between family environment and immigration. Rivera et al. (2008), in a study among different Latino groups, described how the effect of family cohesion on psychological distress may vary in subethnic groups. In a qualitative study with Mexican families, Bacallao and Smokowski (2007) described how immigration could decrease the availability of parents, bringing isolation and risk taking behavior in children, further exposing them to environmental threats, thus provoking an authoritarian attitude of parents, and increasing parent–child conflict, while familism and enacting cultural tradition acted as protective factors.

Another significant result has shown gender to be associated with overall difficulties, namely boys showing more emotional and behavioral problems. The literature reports higher prevalence of mood and anxiety disorder in girls and more externalizing symptoms in boys (Merikangas et al., 2010). Studies have also shown parents having a tendency to proportionally report more externalizing than internalizing symptoms compared with their offspring's self-report (Cantwell, Lewinsohn, Rohde, & Seeley, 1997). As this study's results show no difference associated with gender in emotional and behavioral difficulties as reported by the youth, it could be hypothesized that there is a contamination effect of results reported by parents. The parents and youth informants of the study report different levels of emotional and behavioral problems. The literature reveals that large discrepancies between multiple informants, especially between parents and youth, are frequent (Lecompte & Moss, 2014). Factors associated with discrepancies in interinformant agreement include parents' anxiodepressive symptomatology (with contamination effects on their rating of their adolescent symptomatology) (Renk, Roddenberry, Oliveros, & Sieger, 2007; Rousseau & Drapeau, 1998), cultural and social factors (Rescorla et al., 2012), and in particular the effect of poverty (Stone, Speltz, Collett, & Werler, 2013). Studies show varying degree of interinformant agreement, when looking at internalizing versus externalizing problems with no distinct trend. Therefore, our findings are in line with the literature although the specific reasons for these discrepancies need to be further explored with qualitative data.

As already stated, the study was done within a collaborative care framework, where specialized MH professionals co-intervene with first-line workers and support these workers in their provision of YMH services. MH professionals can help equip primary care workers with tools addressing family environmental factors. Such initiatives addressing psychosocial factors in YMH have shown promising results (Vasan & Solomon, 2015). Research has also documented interventions aiming at transforming family environment and helping families which put emphasis on engaging families and family

strengthening (Kumpfer & Alvarado, 2003). This requires that youth MH services provide an environment where families will feel safe to engage and express their resilience.

Certain study limitations should be noted. First, family cohesion and conflict were assessed using parental report only, precluding the child's perspective regarding family environment. Second, the sample is fairly homogeneous with respect to parental education, with 45% of the parents having a university degree. The conclusions that are drawn in this study can, therefore, be applied to an educated population, but may not be generalized to a broader population. Third, it would be important to obtain qualitative data regarding the factors studied in order to gain a broader understanding of the issues that are quantitatively described in this study.

Conclusion

Our results emphasize the prominence of family environment factors in collaborative care YMH services. They suggest that clinicians may need to pay more attention to the way in which environmental factors interact with relational and personal factors. Untangling the association between these factors would help clinicians and families access a multilayered and systemic understanding of YMH problems. The results, therefore, support the importance of interventions that not only target the child symptomatology but addresses as well family dynamics, especially conflicts. Service providers then need to have the opportunity to work on engaging families into treatment and strengthening families. Collaborative care model may be particularly well suited to allow for a coherent consideration of family environmental factors when a child or adolescent is showing emotional and behavioral problems. Primary care professionals often have an extended knowledge of the family's background and dynamics. They have, thus, an important expertise that MH specialists may lack when first meeting a youth and family. Benefits of collaborative care models may be of a better consideration of the different sociofamilial factors within the framework of assessment, therefore bringing more adequate treatment recommendations. Further research will help refine the understanding of the interplay of different variables and help determinate meaningful contributory factors to YMH outcomes.

Acknowledgements

This research was funded by the Fonds de Recherche en Santé du Québec (FRSQ), the Canadian Institutes of Health Research (CIHR), and the Quebec Ministry of Health and Social Services. The authors have declared that they have no competing or potential conflicts of interests. Study's original data are fully accessible to the authors who take responsibility for the integrity of the data and accuracy of data analysis. The authors thank all the study participants for their generous contribution.

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Accepted for publication: 1 September 2016

Published online: 25 October 2016