



Experience of the covid-19 phenomenon in the context of marital and parent-child relationships

Vivencia del fenómeno del covid-19 en el contexto de las relaciones maritales y relaciones padres e hijos

Victoria Eugenia Cabrera García*, Darlaine Betzabeth Erasmus Guedez**, Junny Stefany Jiménez Muñoz***, María del Carmen Docal Millán****

University of La Sabana

Received: May 3, 2022—Accepted: July 19, 2023—Published: August 1, 2024


Cite this article in APA:

Cabrera García, V. E., Erasmus Guedez, D. B., Jiménez Muñoz, J. E., & Docal Millán, M del C. (2024). Experience of the COVID-19 phenomenon in the context of marital and parent-child relationships. *Revista Colombiana de Ciencias Sociales*, 15(2), 519-543. <https://doi.org/10.21501/22161201.4374>


Abstract

The COVID-19 pandemic has brought major changes on family relationship worldwide and the mandatory isolations made the development of home schooling and work a must. **Objective:** To explain marital conflict based on anxiety, parental stress, rough handling of children and the accompaniment of parents in their children's school activities during confinement by COVID-19. **Method:** Descriptive, explanatory, mixed study,

* Doctora en Educación y Psicología de la Universidad Navarra, Navarra- España. Profesora Instituto del Instituto de La Familia de la Universidad de La Sabana, Chía - Colombia.  <https://orcid.org/0000-0001-8907-5655>, contacto victoria.cabrera@unisabana.edu.co

** Magíster en Asesoría Familiar y Gestión de Programas para la Familia de la Universidad de La Sabana, Chía - Colombia. Senadora del Parlamento de Aruba.  <https://orcid.org/0000-0002-5564-4634>, contacto: darlaine.erasmus@parlamento.aw

*** Magíster en Asesoría Familiar y Gestión de Programas para la Familia de la Universidad de La Sabana, Chía - Colombia. Directora y orientadora del Liceo Miguel de Cervantes Saavedra: Fusafasugá, Colombia.  <https://orcid.org/0000-0003-0649-506X>, contacto: direccion@cervantesfusagasuga.edu.co

**** Magíster en Estudios Políticos de la Pontificia Universidad Javeriana, Bogotá - Colombia. Profesora Instituto del Instituto de La Familia de la Universidad de La Sabana, Chía - Colombia.  <https://orcid.org/0000-0002-5444-0373>, contacto: maria.docal@unisabana.edu.co

through questionnaire and interview. The Study was carried out in a sample of 899 Colombian and Aruban people. **Results:** the variable that weighted the most in women in Colombia was parental stress. In men it was anxiety which makes a greater contribution to marital conflict, followed by parental stress. In Aruba, the only variable that contributed significantly was parental stress. In both countries, a positive correlation with anxiety, parental stress and rough treatment. However, a negative correlation was found with the accompaniment of the children's school activities. **Conclusions:** The pandemic increased marital conflicts, due to anxiety, parental stress, which sometimes generated rough handling of children and the spouse.

Keywords

Marital Conflicts; Anxiety; Parental Stress; School Activities; Rough Handling; Phenomenology.

Resumen

La pandemia por COVID-19 trajo cambios en las relaciones entre los miembros de la familia a nivel mundial. El aislamiento obligatorio llevó al desarrollo de las actividades domésticas, escolares y laborales en casa. **Objetivo:** explicar el conflicto marital a partir de la ansiedad, el estrés parental, el trato rudo y el acompañamiento de los padres en las actividades escolares de los hijos durante el confinamiento por COVID-19. **Método:** estudio descriptivo, explicativo y mixto mediante cuestionario y entrevista. Participaron 899 mujeres y hombres colombianos y arubeños. **Resultados:** la variable que más pesó en las mujeres y en Colombia fue el estrés parental, seguido por la ansiedad. En los hombres, la ansiedad hace un mayor aporte al conflicto marital, seguido por el estrés parental. En Aruba, la única variable que aportó significativamente fue el estrés parental. En los dos países, se encontró una correlación positiva con la ansiedad, el estrés parental y el trato rudo, y, una correlación negativa con el acompañamiento. **Conclusiones:** la cuarentena incrementó los conflictos maritales por ansiedad y estrés parental que, en ocasiones, generaron trato rudo hacia los hijos y el cónyuge.

Palabras clave

COVID-19; Conflicto marital; Ansiedad; Estrés parental; Actividades escolares; Trato rudo; Fenomenología.

Introduction

In a press conference, the Director-General of the World Health Organization (WHO, 2020) declared a pandemic due to COVID-19. This forced the Colombian and Aruban governments to take measures to curb the infection through the Resolution of the Ministry of Health and Social Protection No. 0000380 (2020) and through Ministerial Agreement No. 138 (General Agreement for COVID-19 Containment LXVII, 2020), respectively, to cease activities with measures such as mandatory confinement in homes.

Therefore, these government measures have greatly impacted families, as each family member has been forced to take a break from their daily lives and remain confined to their home, which has tightened family cohabitation. Some studies have shown that the disruption of daily life has affected people's mental health, especially their quality of life (Daneshfar et al., 2020). The global pandemic caught families worldwide unprepared. In the last century, the only comparable event was the Spanish flu in 1918 (Macías-Ruano, 2020; Ferro-Vidal, 2020).

For Orellana I. C. and Orellana L. M. (2019), from a psychosocial perspective, a pandemic is an event that activates collective psychological responses that affect its advancement or containment, as well as the possible generation of emotional responses of concern or social disorder. A significant portion of the population was affected by mental illness during and after the quarantine period. This experience is associated with stress-increasing factors such as the length of confinement, fear of infection or infecting others, frustration or boredom due to confinement, loss of routines, and the absence of social and physical contact with others (Brooks et al., 2020).

The unexpected circumstances have resulted in a range of implications for the family unit. The fear and anxiety associated with an illness can be overwhelming and cause strong emotions, particularly in couples, given that they are spouses and the parents in charge of providing for their children. Furthermore, there is the responsibility of educating and guiding children in terms of their school education, which has transitioned from a face-to-face to a virtual format without sufficient preparation. A growing body of research from around the globe indicates a rise in contagion and mortality rates. This surge is accelerating the proliferation of conditions that fuel these anxiety-inducing scenarios, further exacerbating the personal and collective challenges we face (Williamson, 2020).

In line with the aforementioned ideas, the objective of this research was to explain marital conflict that arises from anxiety, parental stress, rudeness, and parental involvement in their children's academic activities during the period of social distancing due to the COVID-19 pandemic.

The rationale for this study is the global impact of COVID-19. The aim is to examine the specific family dynamics that have emerged in the context of the pandemic, as it is of great interest to understand the potential conflicts between spouses that may have arisen during the period of social distancing due to family situations and to identify the key factors contributing to this phenomenon. Similarly, we aimed to gain insight into the families involved in this event in order to enhance their well-being and emotional stability. Furthermore, the aim is also to provide information that allows for the modification of programs and the formulation of strategies oriented towards families and the educational context to assist in the process of facing adverse situations.

Marital conflicts

Couples reported feeling isolated and experiencing conflicts when their activities outside the home, such as interactions with friends, family, and work, were reduced. Therefore, people's emotional stability and social life were disrupted (Rodríguez-Salazar & Rodríguez-Morales, 2020). It is accepted that relationship conflicts cannot be avoided (Bolze et al., 2013) and affect the entire family system, particularly relationships within the marital and parental subsystems (Rinaldi & Howe, 2003).

In the event of a conflict between parents in the presence of the child, it is advisable that parents explain to the child how the conflict was resolved. This is because these are considered constructive strategies that help children develop positive behaviors in conflict situations in their own relationships. It should even be explained that conflicts between parents are not a serious threat and can be effectively managed (Bergman et al., 2016). Sandín et al. (2020) point out that the characteristics of the pandemic and the multiple factors associated with it characterize confinement as an adversity of high psychosocial stress, theoretically, of greater psychological impact than more typical life events (p. 2).

Anxiety

The pandemic forced governments to make decisions to prevent the spread of infection. Some of these measures were social isolation, which was beneficial but could have had negative impacts on health. For instance, anxiety and stress in adults and children due to the importance of socialization and social support in crises (Bañol & Montoya, 2021).

Some authors have defined anxiety as an anticipatory response to stressful situations characterized by feelings of worry, nervousness, and fear that affect people's performance in their daily lives, as they are unable to control the situation and, therefore, may generate avoidance or escape behaviors (García-Muñoz & Trujillo-Camacho, 2022, Raines et al., 2020).

As a response, anxious people present, among other symptoms: irritability, sleep disturbances, muscle tension, and concentration difficulties, and they may also have a high exposure to the media, which accelerates the feeling of fear or stress (Vélez-Álvarez et al., 2020). In this context, Rodríguez-Domínguez et al. (2020) suggest that social isolation causes psychological distress, manifested in feelings of fear and anxiety, particularly in women. Similarly, individuals diagnosed with anxiety prior to the pandemic exhibited heightened symptomatology.

Furthermore, there is an intense cohabitation and the impossibility of engaging in leisure activities, such as sports, entertainment, and family and social reunions. This situation requires individuals to confront themselves, their partner, and the entire family unit. These experiences encourage individuals to address and overcome the challenges of confinement or the discrepancies, differences, and personality traits that can make a relationship untenable once the period of reclusion or confinement is over (Granjo, 2020, p. 81).

Neff and Karney (2004) state that these conflicting scenarios can have a detrimental impact on the intimacy of the couple, the sustenance of the relationship, and the overall stability of the couple. Therefore, Falkonier et al. (2016) argue that the experiences lived in these moments of stress and conflict can affect the future of a marriage.

It is common for this situation to generate emotional discomfort, which, when coupled with concerns about the health of the members of the family unit, can result in feelings of anger, hopelessness, uncertainty, overwhelm, and significant anxiety (Granjo, 2020, p. 80). As the world is currently experiencing a changing situation, understanding the emotional patterns linked to the current pandemic from the perspective of those who are most vulnerable, namely children, and understanding how they cognitively process and emotionally cope with this new situation could inform the development of strategies to support them in navigating the crisis (Idoiaga et al., 2020, p. 7).

According to Colunga Rodríguez et al. (2021), anxiety levels were associated with a decline in the quality of the relationships from the beginning of confinement and with a poor dyadic adjustment.

Parental stress

Parental stress is the feeling of being overwhelmed by the responsibilities of the parental role (Webster-Stratton, 2020). Marital conflict is related to negative parenting practices. Furthermore, the quality of the relationship has been negatively affected by difficulties between parents and children (Hameister et al., 2015).

Therefore, the stress and hostility that arise from the marital conflict can have a detrimental impact on the parental relationship. This results in changes to the parents' emotional disposition as evidenced by rejection, hostility, lack of responsiveness or control over the child, poor supervision, or harsh or inconsistent discipline.

In the COVID-19 context, parents face increased responsibilities and concerns, which elevate their stress levels. This does not affect them individually; it also impacts other members of the family system, such as spouses and children (Reyes-Rojas et al., 2021).

Rudeness

The United Nations Children's Fund (UNICEF, 2021) indicates that some consequences of increased stress levels in children can cause misbehavior, problems sleeping or maintaining a sleep routine, lack of motivation or enthusiasm, excessive and unjustified crying, and regression in their developmental progress. Similarly, stress can result in parents exhibiting rude behaviors towards their children.

For Moreno-Mora and Machado-Lubián (2020), the security that the family should provide is fundamental to keep children away from fears and anxieties. However, negative behaviors exhibited by children can lead to psychological mistreatment by parents, including the use of foul language or language that belittles the child's self-esteem, such as teasing, public or private humiliation, threats of physical punishment, any attempt to terrorize or isolate a child, sanctions or punishments involving the withdrawal of food and emotional and affective rejection.

Involvement in academic activities

According to the United Nations Educational, Scientific and Cultural Organization (UNESCO, 2020), suspending education means interrupting normality and regularity, which has a negative impact on the development and socio-emotional stability of populations in crisis contexts. In addition to the numerous challenges posed by the COVID-19 pandemic, the vital condition of families changed suddenly and profoundly. In the educational setting, the disruption of classes due to the pandemic led to a novel, unexpected online teaching-learning format called emergency remote teaching (Hodges et al., 2020).

As with parents, children have had to adapt to this new challenge. Thus, the parents have become their source of guidance and support in navigating this new reality. Children rely on their parents for assistance with academic tasks and the promotion of positive development and new learning experiences (Wang et al., 2020). Therefore, their welfare during confinement also depends on their parents (Sprang & Silman, 2013).

In light of the potential for future challenges and uncertainties, educational institutions must develop long-term, sustainable plans that can withstand the pressures of such scenarios (Johnson et al., 2020). According to Spinelli et al. (2020), the majority of the studies conducted since the beginning of the COVID-19 outbreak have focused on the psychological consequences in the general population. Nevertheless, little has been done to study the effects of this phenomenon on parents and children.

Parents have been left alone in accompanying their children's homeschooling, their care, and household chores. According to Jorquera-Gutiérrez et al. (2021), the measures implemented in response to the health emergency and the challenges encountered in the normal progression of the academic year appear to have a pronounced adverse impact on the mental health of students (p. 12), which has markedly elevated the risk of stress and negative emotions in parents, with the potential for a ripple effect on the well-being of children (Sprang & Silman, 2013).

Consequently, and in order to answer the research question, the following specific objectives were proposed: (a) Analyzing the correlation between marital conflict and parental anxiety, parental stress, rudeness, and involvement in the children's academic activities. (b) Explaining marital conflict based on parental anxiety, parental stress, rudeness, and involvement in the children's academic activities by sex and country. (c) Identifying whether there are significant differences in marital conflict, parental anxiety, parental stress, rudeness, and the involvement in the children's academic activities by sex and country of residence of the participants. (d) Conducting in-depth research on how spouses and parents perceive their experiences within the family during the pandemic in both Aruba and Colombia.

Methodology

This study employs a descriptive, cross-sectional, quantitative, and qualitative approach. In order to contact the participants, a purposive sampling (Clark-Carter, 2002) of persons of legal age residing in Aruba and Colombia was employed. The final sample consisted of 899 participants, of whom 681 (75.75%) were from Colombia, 218 (24.25%) from Aruba, 255 (28.36%) were male, and 644 (71.63%) were female. The age range of the participants was 23 to 67 years. They were married or in a common-law marriage and distributed across different socioeconomic levels. In order to participate in the study, individuals had to have children. Furthermore, 5 women and 4 men from Colombia participated in interviews, and 6 women and 6 men from Aruba.

Table 1

Sociodemographic characteristics of the participants

Variable	F	%
Sex		
Men	255	28.36
Women	644	71.63
Country		
Colombia	681	75.75
Aruba	218	24.25
Marital status		
Married	607	68
Common-law marriage	292	32
Socioeconomic level		
Low	102	11
Medium	602	67
High	195	22
Educational level		
Elementary	25	3
High school	147	16
Technical and vocational	185	21
Tertiary	228	25
Postgraduate	314	35
Type of family		
Father, mother, and children	665	74
Father, mother, child, and other relatives	18	2
Father, mother, children, and other non-relatives	31	3
Couple with children from previous relationships	185	21

The questionnaire assessed a number of sociodemographic variables, including sex, age, socioeconomic status, educational level, and country of residence. The Children's Perception of Interparental Conflict Scale (CPIC), developed by Grych et al. (1992), was employed to measure marital conflict. It comprises nine questions, such as "¿Do you get aggressive when arguing?" with a rating scale of 1 to 5, with 1 representing the lowest level of agreement and 5 representing

the highest level of agreement. The wording was modified to elicit responses from parents. With regard to the factor analysis (EFA), the model's goodness of fit obtained a KMO = .90. Bartlett's sphericity test result was $X^2(36) = 4,051.09$; $p = .000$. The questions in this scale accounted for 66.59% of the total explained variance, with an α value of .88.

With the aim of assessing anxiety, the questionnaire developed by De la Ossa et al. (2009), which was adapted from the instrument created by Zung (1971), was used. The questionnaire comprises 20 items and is scored on a scale of 1 = never, 2 = sometimes, 3 = many times, and 4 = always. One example of an item is: "You have felt more nervous and anxious." With regard to the EFA, the model's goodness of fit obtained a KMO = .93. Bartlett's sphericity test result was $X^2(190) = 7,066.20$; $p = .000$. The questions in this scale accounted for 52.60% of the total explained variance, with an α value of .89.

The Parental Stress Index-Short Form (PSI/SF) developed by Abidin (1995) was employed to assess parental stress. With regard to the EFA, the model's goodness of fit obtained a KMO = .91. Bartlett's sphericity test result was $X^2(55) = 3,631.00$; $p = .000$. The questions in this scale accounted for 48.92% of the total explained variance, with an α value of .89.

Rude treatment was measured with the Harsh Discipline Scale (Straus et al. 1980). It is comprised of eight questions, such as "When your child makes a mistake, ¿how often do you lose patience and yell at them?" with response options ranging from 1 = never to 5 = always. In the EFA, the goodness of fit of the model yielded a KMO value of .85. Bartlett's sphericity test result was $X^2(28) = 2,685.26$; $p = .000$. The total explained variance was 62.64%, and the α value was .84.

In order to assess the extent to which parents are involved in their children's homework, a series of questions were formulated. These included questions such as "¿Have you interrupted your children's classes?" and "¿Do you have the necessary knowledge to guide your children's academic tasks?" With regard to the EFA, the model's goodness of fit obtained a KMO = .74. Bartlett's sphericity test result was $X^2(10) = 1,256.40$; $p = .001$. The questions in this scale accounted for 73.05% of the total explained variance, with an α value of .76.

The questionnaire, designated "Questionnaire of Family Experiences During the COVID- 19 Quarantine", was disseminated online via the social connections of the research team and the participants who met the inclusion criteria (Espinoza-Tamez et al., 2018). Inclusion criteria took into account that the participants were Colombian and Aruban fathers and mothers over 18 years of age, married in a civil partnership or in a common-law marriage. Consequently, the sample did not include individuals who expressed interest in participating but did not meet the specified

criteria. The sample was collected during April and June of 2020, the months designated by the government for strict quarantine. The data were processed in the IBM SPSS Statistics V25 software.

In order to collect qualitative information, an interview guide was designed and submitted for peer review, which was subsequently approved. Then, a pilot test was conducted to ascertain the time required and the comprehension of the questions. A total of 21 interviews were conducted and subjected to discourse analysis, resulting in the identification of 7 categories.

Following the stipulations of Decree 1377 of 2013, which oversees the implementation of Act 1581 of 2012 (Colombia), the study does not pose a risk to the health and well-being of the participants. The informed consent form that participants were required to complete was included in the introduction of the questionnaire. Likewise, the study considered research methodologies and ethical considerations typical of the social sciences, such as respect for participants. Therefore, before filling out the questionnaire, each participant was informed about the study, the purpose and scope of their participation, the nature, confidentiality, and anonymity of the information provided, and its use exclusively for the research.

In order to provide an explanation of marital conflict, an analysis plan was implemented, which included a multiple linear regression analysis and a multivariate analysis of variance (MANOVA). The qualitative interviews were analyzed following the phenomenological tradition (Creswell & Poth, 2018), and the data were analyzed using the AtlasTi program.

In the field of phenomenology, the researcher identifies the essence of human experiences surrounding a given phenomenon according to the description of the study participants (Creswell, 2003, p. 15). Consequently, the scope for research is limitless, irrespective of the diversity of phenomena under consideration. The study participants describe all types of emotions, experiences, perspectives, or reasonings. It can be directed in the study of life perspective or singular phenomena (Hernández-Sampieri et al., 2014).

Results

In order to address the initial research objective, a correlation analysis was conducted between marital conflict and anxiety, parental stress, rudeness, and the level of parental involvement in their children's academic activities. This analysis was differentiated by sex and country of residence. In the case of men, a positive correlation was found between anxiety, parental stress, and rudeness. Conversely, a negative correlation was observed between the variables above and

involvement in academic tasks. This implies that as marital conflict increases, anxiety, parental stress, and rudeness also tend to increase, while involvement in the children’s academic activities tends to decrease.

In women, a positive correlation was identified between anxiety, parental stress, and rudeness, and a negative correlation between these variables and involvement in academic tasks. It can be inferred that as marital conflict increases, so too does anxiety, parental stress, and rudeness, and there is less involvement in the children’s academic activities. In both countries, there was a positive correlation with anxiety, parental stress, and rudeness, and a negative correlation with involvement in academic tasks. In other words, as conflict increases, so too does anxiety, parental stress, and rudeness, and there is less involvement in the children’s academic activities, as Table 2 illustrates.

Table 2

Correlation between the study variables and marital conflict by sex and country of residence.

Variable	Marital conflict			
	Men	Women	Colombia	Aruba
Anxiety	.45**	.44**	.32**	.39**
Parental stress	.40**	.43**	.41**	.63**
Rudeness	.52**	.41**	.26**	.56**
Involvement of the parents in the children’s academic tasks	-.45**	-.29**	-.22**	-.37**

A multiple linear regression analysis was conducted to address the second objective, which is to explain marital conflict based on the aforementioned variables. The variables included in the men’s model were found to be significant in explaining marital conflict. These explain 28% of the variance in marital conflict ($F(4,149) = 14.69; p < .001$). The analysis revealed that anxiety was the primary contributing factor, followed by parental stress and then rudeness, as presented in Table 3.

Regarding the model developed to explain marital conflict in women, the study variables were included, and the model was found to be significant. The included variables explain 24% of the variance in marital conflict ($F(4,47) = 37.15; p < .001$). The analysis revealed that parental stress had the greatest impact on marital conflict, followed by anxiety, and finally, a low involvement in the children’s academic activities.

Table 3

Explanation of marital conflict by sex

Variable	B	p	
	Man	Woman	Man

Anxiety	.28	.15	<.001	<.001
Parental stress	.23	.35	.006	<.001
Rudeness	.17	.07	.032	<.128
Involvement of parents	-.13	-.13	.091	.002

The variables included in Colombia's model were found to be significant in explaining marital conflict ($F(4,586) = 44.82; p < .001$). These explained 48% of the variance. In particular, parental stress was identified as the most significant factor contributing to marital conflict, followed by anxiety, low involvement in academic tasks, and rudeness, as shown in Table 4.

Regarding the model for Aruba, it was found to be significant in explaining marital conflict ($F(4,32) = 11.93; p < .001$). The variables included explained 60% of the variance. In particular, the only variable that significantly contributed to explaining marital conflict was parental stress, as illustrated in Table 4.

Table 4

Explanation of marital conflict by country

Statistic model	F	Variable	β	ρ				
Colombia	Aruba	C	A		C	A	C	A
$R^2 = .23; p = .000$	$R^2 = .60; p = .000$	44.90	11.93	Anxiety	.20***	.04	<.001	.721
				Parental stress	.28***	.64***	<.001	<.001
				Rudeness	.09**	-.17	<.030	.206
				Involvement of parents	-.14***	-.17	<.001	.202

To address the third objective, identifying significant differences in marital conflict, anxiety, parental stress, rudeness, and involvement in the children's academic activities by sex, a MANOVA was conducted. The analysis revealed that there are notable discrepancies between the sexes with regard to the variables included in this model (T^2 de Hotelling = .036; $F(5,622) = 4.46; p < .001$). In particular, differences were found in anxiety, parental stress, and rudeness, with women reporting higher levels than men in these variables, as shown in Table 5.

Table 5

Significant differences in marital conflict and the variables of the research by sex

Variable	F	Man (M)	Woman (M)	η^2
Marital conflict	(1,626) = .49; $p = .49$	1.80	1.78	.001
Anxiety	(1,626) = 13.05; $p < .001$	1.60	1.72	.020
Parental stress	(1,626) = 3.51; $p = .05$	1.88	1.98	.006
Rudeness	(1,626) = 3.40; $p = .05$	1.43	1.51	.005
Involvement of the parents in the children's academic tasks	(1,626) = .64; $p = .42$	3.29	3.33	.001

A MANOVA was conducted to assess the significant differences in marital conflict, anxiety, parental stress, rudeness, and involvement in the children’s academic activities by country. The analysis revealed that there are notable discrepancies between the variables included in this model (T^2 de Hotelling = .11; $F(5,621) = 13.76$; $p < .001$). Specifically, differences were found in anxiety and involvement in the children’s academic activities. That is, Aruba reported higher levels of anxiety, while Colombia reported greater parental involvement in the children’s academic activities, as shown in Table 6.

Table 6
Significant differences in marital conflict and the variables of the research

Variable	F	Colombia (M)	Aruba (M)	η^2
Marital conflict	(1,625) = .27; $p = .60$	1.78	1.73	.000
Anxiety	(1,625) = 52.91; $p < .001$	1.66	2.08	.078
Parental stress	(1,625) = .000; $p = .99$	1.95	1.95	.000
Rude treatment	(1,625) = 1.30; $p = .25$	1.48	1.57	.002
Involvement of the parents in the children’s academic tasks	(1,625) = 7.04; $p = .008$	3.34	3.09	.011

Analyses of the interaction effect between sex and country were conducted to identify significant differences between Colombian and Aruban men and women. However, no significant differences were found among these four groups of participants.

Lastly, the information collected from the interviews was analyzed using discourse analysis to address the fourth objective, understanding the experiences of spouses and parents in family life during the pandemic in the two countries. The findings were compiled into 7 categories based on similarities and frequency within the interpretative repertoires. A description of each category, including excerpts from the relevant narratives, is presented below.

Marital conflict due to sharing a space

In this category, both men and women expressed experiencing conflict arising from sharing the same space for 24 hours. For instance, Lina, a 37-year-old Colombian woman, stated: “If I’m here, why are you hovering over me like that?” ... “No! This is my space, and I want my space!” (to the husband) So I would say to him, “You’re being egocentric, don’t be like that!”

Similarly, Faride, a 44-year-old Aruban woman, stated:

Yes ... there were conflicts because of the children. If the children had been in school, everything would be different. That’s a different lifestyle. In the morning, they go to school and have their routines. But being together in the house all day is stressful and affects my partner and me.

Marital conflict due to parental stress

This category emerged repeatedly in the narratives due to the multiple responsibilities that parents faced during the confinement period. Lina, a 37-year-old Colombian woman, described her experience:

Initially, it was, like, complaints. And we had to find a solution because we couldn't handle everything, right? It's very hard ... "Hey, but help me out because I haven't had a break." Or, "But hey, I'm busy too, so" ... "But we're the parents, we have to hurry the kids up" ... "You haven't finished preparing dinner?" "Why don't you finish what you're doing quickly?"

Moreover, Felipe, a 39-year-old Colombian man, expressed: "Yes, conflicts arose with my wife because after a while, she didn't want to do the same things she had been doing for those three months."

Another participant, Denisse, a 27-year-old woman from Aruba, stated:

There was a lot of conflict ... because my partner worked his normal hours and I had to take care of the children alone ... I asked him to also keep an eye on the kids for a while so I could rest for a bit ... but he didn't help at all.

Similarly, Mary, a 25-year-old Aruban woman, stated:

I did sleep ... but with a lot of stress, thinking ... "How will tomorrow be?" However, the situation remains the same, you're left with stress. Because I have to help my daughter with her own activities ... like, online classes, for example.

Marital conflict due to economic difficulties

During the interviews, it was observed that this aspect was crucial for spouses, noting that due to the pandemic, work situations changed. This scenario posed a significant challenge for couples, as financial issues heavily impacted their relationships. Many expressed concerns about this during the interviews.

Juan, a 49-year-old Colombian man, expressed: "Yes, we had difficult times at home because we did not work for about three months. That was mainly the worst part."

Julia, a 37-year-old woman from Aruba, stated: "Yes, because he doesn't have money to cover some expenses, and I don't have enough for mine either. That's when the arguments and frustrations begin."

Marital conflict due to anxiety

Anxiety manifested individually among spouses and children, leading to friction or conflicts within couples.

Diana, a 36-year-old Colombian woman, reported:

Our main conflict when the pandemic started was fear. So it was fear, because he had to go out to work, and we were locked up in the house ... So it was, like, "if you get infected outside, then, you come and infect us."

Furthermore, Brayan, a 50-year-old man from Aruba, expressed:

I'm not at home all day ... but when I go to work, I have this stress in my head ... I don't know what's going to happen in this period. And I also think that when I go back home, I'll have these problems with my wife. And that makes it worse.

Health problems due to anxiety

Distress, fear, and worries caused ailments and illnesses among men and women in both countries. Next, there are some of these experiences.

Lina, a 37-year-old Colombian woman, narrated: "I go to bed at twelve or twelve-thirty. Sometimes, I start reading because I can't sleep ... It's, like, I cry, my eyes water."

Anna, a 38-year-old woman from Aruba, mentioned: "I've had a lot of back pain ... I think they say it's one of the symptoms of COVID anxiety ... but I also had a lot of stress from work."

Robert, a 35-year-old Aruban man, talked about his symptoms: "Yes ... back pain that runs down my legs. Sometimes my blood sugar goes up and down because of the worry about this pandemic."

Parental stress due to the involvement in the children's academic activities

Modifications in children's educational responsibilities became a significant aspect of families. Parents had to take on these responsibilities, which generated stress in providing this support. For instance, Eugenia, a 39-year-old Colombian woman, stated:

I used to talk with my children's schoolmates and ... My goodness! We were going crazy because the tasks have to be sent, a support evidencing the task was made! ... And, if it's not that, then it's a different thing, it's too much!

Brayan, a 50-year-old man from Aruba, expressed: "The biggest concern during this pandemic was health, but also my children's schooling and my job."

Rudeness towards the children and the spouse due to anxiety, parental stress, and involvement in the children's academic activities

The interviewed parents admitted to displaying rude behavior towards their children and their spouses because they often felt overwhelmed by the circumstances. For example, Diana, a 36-year-old woman, reported: "Once, his response to me was ... 'But what ... are you complaining about? You've been living in a pandemic since the kids were born!'"

Anna, a 38-year-old woman from Aruba, mentioned: "I would get angry with my daughter. The school part was my biggest stress. I scolded her and shouted at her to see if she would make an effort."

Mario, a 36-year-old Aruban man, described his experience: "My children were at home a lot and made a mess in the house. I yelled at them and sometimes punished them for their bad behavior."

Discussion

The objective of this research was to explain marital conflict based on anxiety, parental stress, rude treatment, and parental involvement in the children's academic activities during the COVID-19 pandemic among both men and women in Aruba and Colombia.

According to Orellana and Orellana (2019), pandemics are events that can trigger psychological behaviors influencing the containment or overflow of emotional responses due to collective fear of a pandemic of the COVID-19 magnitude. The results of this study align with the propositions of these authors in that both for men and women residing in the two countries, parental stress and anxiety were the variables most associated with the presence of family conflicts. Additionally,

this finding is relevant in relation to the study by Wang et al. (2020), who explain that parents are the most significant adults in children's daily lives, supporting them in schoolwork and promoting positive development amidst new experiences such as the pandemic.

Moreover, traditionally, mothers feel greater responsibility for monitoring their children's academic activities, a situation that was exacerbated during the confinement period due to the combination of these parental responsibilities with their own work activities and household chores. Furthermore, the findings support the assertions made by Sprang and Silman (2013), as the situation resulting from the COVID-19 pandemic has significantly increased the risk of stress and negative emotions among parents, potentially impacting the well-being of children adversely.

Similarly, even though the two countries are located in the Caribbean and equatorial zone, and their inhabitants tend to be cheerful and festive, the families did not escape experiencing the emotional upheaval caused by confinement. This was associated with anxiety and stress due to their children's activities and the tendency to treat them rudely. For example, in Colombia, there was a perception of greater involvement in the children's academic activities and, in Aruba, greater anxiety.

Notably, parents from Colombia and Aruba felt frustration due to inexperience in the educational field. In Colombia, many mothers reported feeling stressed and overburdened by this. The effects of the COVID-19 confinement had a particularly profound impact on family relationships, stemming from uninterrupted cohabitation where the parents' patience is put to the test, sometimes resulting in aggressive actions towards their children. In line with Moreno-Mora and Machado-Lubián (2020), parental security and support towards children are crucial in mitigating the risk of fear and distress in children.

The emotional stability of children is a priority for parents, but the adverse events of the pandemic and confinement have presented a challenge. Levels of rudeness have increased towards children and spouses, as parents often felt overwhelmed by the circumstances.

Both men and women expressed increased marital conflicts due to having to share the same space 24 hours a day. For Hameister et al. (2015), marital conflict is related to negative parental practices. The results showed that parenting during confinement was a stressor in both countries. As a consequence, this situation posed challenges for the families.

Neff and Karney (2004) state that these conflicting scenarios can affect the intimacy of the couple, the sustenance of the relationship, and the overall stability of the family unit. On the other hand, economic issues were a source of concern for the families since they affected the stability of the couple to the extent that fear arose from the reduction of income and job loss. Thus, family survival was mostly affected in the Aruban participants.

On the other hand, anxiety and stress have repercussions on health, such as manifesting psychosomatic symptoms that manifest as physical symptoms. However, it is important to note that there was a higher incidence among women and men in Aruba than in Colombia.

The remote application of the in-depth interviews is considered a limitation in this study, as it restricts the observation of the environment in which the researcher and the participant interact.

Conclusions

The primary contribution of this study was to understand family experiences during the COVID-19 confinement and to explain marital conflict based on levels of anxiety, parental stress, rudeness, and parental involvement in the children's academic activities. The results of the study indicate that the anxiety and parental stress experienced during the strict isolation played an important role in the understanding of family relationships and conflicts in both men and women in the two countries studied.

Families, specifically parents, felt overwhelmed by the novel circumstances brought about by this situation. Experiences such as sharing the same space for work, household chores, and their children's academic activities took them by surprise. Consequently, they perceived that they lacked the necessary tools to handle this multitude of roles effectively and were not adequately prepared to fulfill them with the required competence.

It can be affirmed that mothers felt especially responsible for their children compared to fathers. Therefore, they perceived a greater demand for time to accompany their children's academic activities, a situation associated with increased conflicts with their partners.

Parental practices have been a stress factor in both countries. There are contrary situations that pose challenges for families, which can obviously disrupt the intimacy, maintenance, and stability of the family unit. Economic matters are a sensitive topic in marital relationships, particularly during confinement due to fear of job loss and reduced income, which created various challenges between partners and strained their relationships, especially in Aruba.

Parents in Colombia and Aruba have experienced frustration due to their inexperience in formal education for their children. In Colombia, mothers reported feeling stressed and overburdened by this. Likewise, it is noteworthy that Colombian parents reported actively participating in their

children's academic activities. They also reported feeling more stressed than those in Aruba because of this situation. As a result of uninterrupted cohabitation, the patience of the parents is tested, which may occasionally result in hostile actions towards their children.

For future studies, it is suggested that family experiences related to adapting to COVID-19 be explored further, as well as the coping strategies employed to overcome this situation. Additionally, there is a need to delve deeper into the new family dynamics that emerged due to the pandemic, such as divorces, the stability, and the continuity of family unions, among other aspects.

Authors note

Victoria Eugenia Cabrera García: Conceptualization of the research project, data collection, data analysis, fieldwork, theoretical framework, writing, and revision of the final version of the paper.

Darlaine Betzabeth Erasmus Guedez: Data collection, data analysis, fieldwork, theoretical framework, writing, and revision of the final version of the paper.

Junny Steffany Jiménez Muñoz: Data collection, data analysis, fieldwork, theoretical framework, writing, and revision of the final version of the paper.

María del Carmen Docal: Data collection, data analysis, fieldwork, theoretical framework, writing, and revision of the final version of the paper.

Conflict of interest

The authors confirm that they have no conflict of interest in this research.

Acknowledgments

To the participants who contributed to the study with their experiences.

Funding

The research was funded by the University of La Sabana through the research project titled: Factors promoting and mitigating parental stress in parents within the framework of COVID-19 in Colombia, Argentina, Chile, and Aruba. Code: FAM-47-2020.

References

- Abidin, R. R. (1995). *Parenting stress index: professional manual*. (3.^a ed.). Psychological Assessment Resources.
- Bergman, K. N., Cummings, E. M., & Warmuth, K. A. (2016). The benefits of marital conflict: Constructiveness and resolution as predictors of positive child outcomes. In D. Narvaez, J. M. Braungart-Rieker, L. E. Miller-Graff, L. T. Gettler and P. D. Hastings (Eds.), *Context for young child flourish evolution, family, and society* (pp. 233-245). Oxford University Press. <https://doi.org/10.1093/acprof:oso/9780190237790.003.0012>
- Bañol, S., & Montoya, A. (2021). Experiencias traumáticas en la infancia durante el confinamiento por Covid-19. Una revisión documental [Traumatic experiences in childhood during the COVID-19 confinement. A documentary review]. *Ciencia y Academia*, (2), 20-36. <https://doi.org/10.21501/2744838X.4260>
- Bolze, S., Crepaldi, B., Schmidt, M., & Vieira, M. (2013). Marital and Parental Conflicts in Families with Children: Characteristics and Resolution. *Paidéia*, 27(1), 457-465. <https://doi.org/10.1590/1982-432727s1201711>
- Brooks, S. K., Webster, R. K., Smith, L. E., Woodland, L., Wessely, S., Greenberg, N. & Rubin, G.J. (2020). The psychological impact of quarantine and how to reduce it: rapid review of the evidence. *The Lancet*, 395(10227), 912-920. [https://doi.org/10.1016/S0140-6736\(20\)30460-8](https://doi.org/10.1016/S0140-6736(20)30460-8)
- Clark-Carter, D. (2002). *Investigación cuantitativa en Psicología [Quantitative research in psychology]*. Oxford University Press.

- Colunga-Rodríguez, C., Ángel-González, M., Vázquez-Colunga J. C., Vázquez-Juárez, C. L., & Colunga-Rodríguez, B. A. (2021), Relación entre ansiedad y rendimiento académico en alumnado de secundaria [Relation between anxiety and academic performance in high school students]. *Enfermería Universitaria*, 17(4), 437- 448. <https://doi.org/10.17979/reipe.2021.8.2.8457>
- Creswell, J. W., & Poth, C. N. (2018). *Qualitative Inquiry and Research Design Choosing among Five Approaches* (4th ed). SAGE Publications.
- Creswell, J.W. & Poth, C. N. (2003). *Qualitative inquiry and research design: among five approaches*. SAGE. <https://bit.ly/3UB16p2>
- Cummings, E. M., & Davies, P. T. (2011). *Marital conflict and children: emotional security perspective*. The Guilford Press.
- Daneshfar, Z., Sadatmahalleh, S. J., Youseflu, S., Khomani, M. B., & Kazemnejad, A. (2021). Influential factors on quality of life in married Irian women during the COVID-19 pandemic in 2020: a path analysis. *BMC Women Health. Edition; 21*(1), 1-8. <https://doi.org/10.1186/s12905-020-01114-2>
- De la Ossa, S., Martínez, Y., Herazo, E., & Campo, A. (2009). Estudio de la consistencia interna y estructura factorial de tres versiones de la escala de Zung para la ansiedad [Study of the internal consistency and factorial structure of three versions of Zung's scale for anxiety]. *Colombia Médica*, 40(1), 71-77.
- Directie Volksgezondheid (2020). Algemene regeling bestrijding COVID-19 LXVII [General regime of fight against COVID-19]. https://www.arubacovid19.org/_files/ugd/1a09f9_2bb22014631b4cecb33488bc5277758f.pdf
- Espinoza-Tamez, P., Hernández, H., López-Guzmán, R., & Lozano-Esparza, S. (2018). *Muestreo bola de nieve [Snowball sampling]*. Universidad Nacional Autónoma de México.
- Falkonier, M. K., Randall, A. K., & Bodenmann, G. (2016). *Couples coping with stress: A cross-cultural perspective*. Routledge. <https://www.taylorfrancis.com/books/e/9781315644394>
- Ferro-Vidal, L. E., (2020). Asimetrías culturales: la comunidad en la cultura de pandemia [Cultural asymmetries: Community in the culture of the pandemic]. *Revista Espacio Abierto*, 29(4), 230-245. <https://www.redalyc.org/journal/122/12265803017/12265803017.pdf>

- García-Muñoz, M., & Trujillo-Camacho, A. (2022). Niveles de ansiedad durante el confinamiento obligatorio por COVID-19, en estudiantes de una Universidad Estatal del Caribe colombiano [Anxiety levels during the COVID-19 mandatory confinement in students of a State University of the Colombian Caribbean]. *Psicogente*, 25(47), 1-22. <https://doi.org/10.17081/psico.25.47.4421>
- Granjo, A. (2020). Los covidivorcios después del confinamiento por el COVID-19: Breve análisis de las causas y soluciones desde una visión constructiva [Covidivorces after COVID-19 confinement: Brief analysis of the causes and solutions from a constructive vision]. *Revista Jurídica Valenciana*, (35).70-92. https://www.revistajuridicavalenciana.org/wp-content/uploads/0035_0006_05_-LOS-COVIDIVORCIOS-DESPUES-DEL-CONFINAMIENTO.pdf
- Grych, J. H., Seid, M., & Fincham, F. D. (1992). Assessing marital conflict from the child's perspective: the children's perception of interparental conflict scale. *Child Dev.* 63(3), 558-72. <https://doi.org/10.1111/j.1467-8624.1992.tb01646.x>
- Hameister, B. D. R., Barbosa, P. V., & Wagner, A. (2015). Conjugalidade e parentalidade: Uma revisão sistemática do efeito spillover [Marriage and paternity: A systematic review of the spillover effect]. *Arquivos Brasileiros de Psicologia*, 67(2), 140-155. <https://www.lume.ufrgs.br/handle/10183/150284>
- Hernández-Sampieri, R., Fernández-Collado, C., & Baptista-Lucio, P. (2014). *Selección de la muestra [Sample selection]*. In R. Hernández-Sampieri, C., Fernández-Collado, & P., Baptista-Lucio (2014). (pp. 207-238) *Metodología de la Investigación*. McGraw-Hill.
- Hodges, C., Moore, S., Lockee, B., Trust, T., & Bond, A. (March 27, 2020). *The difference between emergency remote teaching and online learning*. Educause Review. <https://bit.ly/3b0Nzx7>
- Idoiaga, N., Berasategi, N., Eiguren, A., & Picaza, M. (2020). Exploring children's social and emotional representations of the COVID-19 pandemic. *Frontiers Psychology*. 11(1952), 1-9. <https://doi.org/10.3389/fpsyg.2020.01952>
- Johnson, N., Veletsianos, G., & Seaman, J. (2020). U.S. Faculty and administrators experiences and approaches in the early weeks of the COVID-19 pandemic. *Online Learning*, 24(2), 6-21. <https://doi.org/10.24059/olj.v24i2.2285>
- Jorquera-Gutiérrez, R., Morales-Robles, E., & Vega-Álvarez, A. (2021). Salud mental y apoyo social en habitantes de Copiapó, Chile, en el contexto de la COVID-19 [Mental health and social support for the inhabitants of Copiapó, Chile, in the context of COVID-19]. *Psicogente*, 24(46), 1-16. <https://doi.org/10.17081/psico.24.46.4308>

- Macías-Ruano, A. J. (2020). Reacción de la sociedad civil y el tercer sector en el abordaje de las pandemias [Reaction of the civil society and the third sector when addressing pandemics]. *Revista de Ciencias Sociales*, 26(2), 16-20. <https://produccioncientificaluz.org/index.php/rcs/article/view/32417/33845>
- Moreno-Mora, R., & Machado-Lubián, M. C. (2020). Formas de maltrato infantil que pudieran presentarse durante el confinamiento debido a la COVID-19 [Forms of child maltreatment that may occur during the COVID-19 confinement]. *Revista Cubana de Pediatría*, 92(1), 1-19. <http://www.revpediatria.sld.cu/index.php/ped/article/view/1241>
- Neff, L. A., & Karney, B. R. (2004). How does context affect intimate relationships? Linking external stress and cognitive processes within marriage. *Personality and Social Psychology*, 30(2), 134-148. <http://dx.doi.org/10.1177/0146167203255984>
- World Health Organization. (2020) WHO Director-general's opening remarks at the media briefing on COVID-19. <https://www.who.int/es/dg/speeches/detail/who-director-general-s-opening-remarks-at-the-media-briefing-on-covid-19---11-march-2020>
- Orellana, I. C., & Orellana, L. M. (2019). Predictores de síntomas emocionales durante la cuarentena domiciliar por pandemia de COVID-19 [Predictors of emotional symptoms during the home quarantine due to the COVID-19 pandemic]. *Actualidades en psicología*, 34(128), 103-120. <http://dx.doi.org/10.15517/ap.v34i128.41431>
- Raines E. M., Viana A. G., Trent E. S., Conroy H. E., Woodward E. C., Zvolensky M. J., & Storch E. A. (2020). The explanatory role of anxiety sensitivity in the association between effortful control and child anxiety and depressive symptoms. *Cognitive Behaviour Therapy*, 49(6), 501-517. <https://doi.org/10.1080/16506073.2020.1790644>
- Resolución No. 0000380 (10 de marzo de 2020), por la cual se adoptan medidas preventivas sanitarias en el país, por causa del coronavirus COVID-19 y se dictan otras disposiciones Ministerio de Salud y Protección Social [Resolution No. 0000380 (March 10, 2020), whereby preventive health measures are adopted in the country due to the COVID-19 and other provisions of the Ministry of Health and Social Protection are issued]. <https://vlex.com.co/vid/resolucion-numero-0000380-2020-841226665>
- Reyes-Rojas, M., Mielles-Barrera, M. D., & Hernández-Vargas, B. A. (2021). Afrontamiento familiar y su relación con el bienestar infantil y familiar: estudio sobre familias en condición de vulnerabilidad [Family coping and its relationship with child and family well-being: A study on families in vulnerable conditions]. *Revista Colombiana de Ciencias Sociales*, 12(1), 50-75. <https://doi.org/10.21501/22161201.3335>

- Rodríguez-Salazar, T., & Rodríguez-Morales, Z. (2020). Intimidad y relaciones de pareja durante la pandemia de la COVID-19 en Guadalajara [Intimacy and couple relationships during the COVID-19 pandemic in Guadalajara]. *Espiral*, 27(78-79), 215-264. <https://doi.org/10.32870/ees.v28i78-79.7206>
- Rodríguez-Domínguez, C., Carrascal-Caputto, B., & Durán, M. (2022). Anxiety and intimate relationships in times of lockdown due to COVID-19. *Psychological Trauma: Theory, Research, Practice, and Policy*, 14(2), 237-246. <https://doi.org/10.1037/tra0001094>
- Rinaldi, C. M., & Howe, N. (2003). Perceptions of constructive and destructive conflict within and across family subsystems. *Infant and child development*, 12(5), 441-459. <https://doi.org/10.1002/icd.324>
- Sandín, B., Valiente, R. M., García-Escalera, J., & Chorot, P. (2020). Impacto psicológico de la pandemia de COVID-19: Efectos negativos y positivos en población española asociados al periodo de confinamiento nacional [The psychological impact of the COVID-19 pandemic: Negative and positive effects on the Spanish population associated with the period of national confinement]. *Revista de Psicopatología y Psicología Clínica*, 25(1). <https://doi.org/10.5944/rppc.27569>
- 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. *Frontiers in Psychology*, 11(1713), 1-7. <https://doi.org/10.3389/fpsyg.2020.01713>
- Sprang, G., & Silman, M. (2013). Posttraumatic stress disorder in parents and youth after health-related disasters. *Disaster Medicine and Public Health Preparedness*, 7(1), 105-110. <https://doi.org/10.1017/dmp.2013.22>
- Straus, M. A., Gelles, R. J., & Steinmetz, S. K. (1980). Behind closed doors: Violence in the American family. Beverly Hills, CA: Sage.
- United Nations Educational, Scientific and Cultural Organization. (2020). *La educación debe continuar durante la emergencia sanitaria, afirman UNESCO y UNICEF [Education must continue during the health emergency, state UNESCO and UNICEF]*. <https://es.unesco.org/news/la-educacion-debe-continuar-durante-la-emergencia-sanitaria-UNESCO-UNICEF>
- United Nations Children's Fund. (2021). *Niñas y niños menores de 6 años en la pandemia [Children under 6 years old during the pandemic]*. <https://www.unicef.org/mexico/ni%C3%B1as-y-ni%C3%B1os-menores-de-6-a%C3%B1os-en-la-pandemia>

- Vélez-Álvarez, C., Sánchez-Palacio, N., & Betancurth-Loaiza, D. P. (2020). Cuarentena por COVID-19 en un profesional de la salud: dimensión psicológica, social y familiar [Quarantine due to COVID-19 in a healthcare professional: Psychological, social, and familial dimensions]. *Revista Salud Pública*, 22(2), 1-5. <https://doi.org/10.15446/rsap.v22n2.86663>
- Wang, G., Zhang, Y., Zhao, J., Zhang, J., & Jiang, F. (2020). Mitigate the effects of home confinement on children during the COVID-19 outbreak. *The Lancet*, 395(10228), 45-947. [https://doi.org/10.1016/S0140-6736\(20\)30547-X](https://doi.org/10.1016/S0140-6736(20)30547-X)
- Williamson, H. C. (2020). Early Effects of the COVID-19 Pandemic on Relationship Satisfaction and Attributions. *Psychological Science*, 31(12), 1479-1487. <https://doi.org/10.1177/0956797620972688>
- Zung, W. W. (1971). A rating instrument for anxiety disorders. *Psychosomatics: Journal of Consultation and Liaison Psychiatry*, 12(6), 371-379. [https://doi.org/10.1016/S0033-3182\(71\)71479-0](https://doi.org/10.1016/S0033-3182(71)71479-0)