SOCIODEMOGRAPHIC VARIABLES ASSOCIATED ALTERED TOLERANCE IN FRIENDSHIP RELATIONS IN THE COVID-19 PANDEMIC

VARIÁVEIS SOCIODEMOGRÁFICAS ASSOCIADAS À MUDANÇA NA TOLERÂNCIA NAS RELAÇÕES DE AMIZADE NA PANDEMIA PELA COVID-19

VARIABLES SOCIODEMOGRÁFICAS ASOCIADAS CON EL CAMBIO EN LA TOLERANCIA EN LAS RELACIONES DE AMISTAD EN LA PANDEMIA POR COVID-19

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Objective: to verify the association between sociodemographic variables and altered tolerance in friendship relationships during the COVID-19 pandemic. Method: cross-sectional study conducted in the five Brazilian macro-regions, from June to July 2020, through the application of a sociodemographic questionnaire, a semi-structured questionnaire and the Instrument for Assessing tolerance in friendship relationships. Fischer's chi-square and exact tests were used for data analysis. Results: 88.9% considered satisfactory tolerance in relationships in the home environment, 82.8% had help from friends to overcome tensions, 73% perceived a change in relationships during quarantine. This change was higher among heterosexuals (p=0.001), residents in the Southeast and Midwest (p=0.001), with complete higher education (p=0.004), linked to private institutions (p<0.001) and who received help from friends during quarantine (p<0.001). Conclusion: sociodemographic factors and social support received from friends are associated with changes in tolerance in friendship relationships during the pandemic.

Descriptors: Interpersonal Relationships. Friends. COVID-19. Pandemics. Social Isolation.

Objetivo: verificar a associação entre variáveis sociodemográficas e mudança na tolerância nas relações de amizade durante a pandemia pela COVID-19. Método: estudo transversal realizado nas cinco macrorregiões brasileiras, de

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junho a julho de 2020, mediante aplicação de um questionário sociodemográfico, um questionário semiestruturado e o Instrumento de Avaliação da tolerância nas relações de amizade. Utilizou-se o teste qui-quadrado e exato de Fischer para a análise de dados. Resultados: 88,9% consideram satisfatória a tolerância nas relações no ambiente domiciliar, 82,8% tiveram ajuda de amigos para superar as tensões, 73% perceberam mudança nas relações durante a quarentena. Essa mudança foi maior entre heterossexuais (p=0,001), residentes no Sudeste e Centro-Oeste (p=0,001), com ensino superior concluído (p=0,004), vinculados a instituições privadas (p<0,001) e que receberam ajuda dos amigos durante a quarentena (p<0,001). Conclusão: os fatores sociodemográficos e o suporte social recebido dos amigos estão associados às mudanças na tolerância nas relações de amizade durante a pandemia.

Descritores: Relações Interpessoais. Amigos. COVID-19. Pandemias. Isolamento Social.

Objetivo: verificar la asociación entre variables sociodemográficas y cambio en la tolerancia en las relaciones de amistad durante la pandemia por COVID-19. Método: estudio transversal realizado en las cinco macrorregiones brasileñas, de junio a julio de 2020, mediante la aplicación de un cuestionario sociodemográfico, un cuestionario semiestructurado y el Instrumento para la Evaluación de la tolerancia en las relaciones de amistad. La prueba chi-cuadrada y exacta de Fischer se utilizó para el análisis de datos. Resultados: el 88,9% consideró una tolerancia satisfactoria en las relaciones en el entorno doméstico, el 82,8% tuvo ayuda de amigos para superar las tensiones, el 73% percibió un cambio en las relaciones durante la cuarentena. Este cambio fue mayor entre los heterosexuales (p=0,001), residentes en el sureste y el medio oeste (p=0,001), con la educación superior completada (p=0,004), vinculada a instituciones privadas (p<0.001) y que recibieron ayuda de amigos durante la cuarentena (p<0.001). Conclusión: los factores sociodemográficos y el apoyo social recibido de los amigos están asociados con cambios en la tolerancia en las relaciones de amistad durante la pandemia.

Descriptores: Relaciones Interpersonales. Amigos. Covid-19. Pandemias. Aislamiento Social.

Introduction

Since December 2019, the world has been in a COVID-19 pandemic. A disease still little explained by science, and whose all impacts cannot be predicted or measured[1]. The number of deaths, increasing every day, allows realizing the amount of human lives lost to the disease. However, there are still psychological, social and economic effects that have also not yet been widely explored[2].

Among the psychoemotional effects, this global health crisis imposes high psychological burdens, not only because of panic due to transmissibility, the risk of death among different populations, the lack of effective treatment or vaccine, or the uncertainty about the future, but also because of the measures to prevent dissemination that have been implemented, such as social isolation[2].

Social isolation has, in turn, generated its own challenges. Since the Declaration of the World Health Organization (WHO) that COVID-19 was a global emergency and, specifically in Brazil, since the notification of the first case[3], this health crisis has promoted changes in interpersonal relationships, whether in the work environment or in the home of people[4].

Thus, in view of the measures to prevent the dissemination of COVID-19, interpersonal relationships may be impaired[5]. And, in the absence of important bonds of friendship, it is possible that pictures of anxiety and depression, for example, may appear or worsen. These findings highlight the influence of social relations, in particular, of friendship relationships, in minimizing the negative impact of social isolation of COVID-19[6].

Interpersonal relationships can still be influenced by socioeconomic characteristics, as some of these characteristics unite and homogenize the group, and consequently, can, in turn, influence the level of tolerance of relationships[7].

In this context, the aim of this study was to verify the association between sociodemographic variables and the change in tolerance in friendship relationships during the COVID-19 pandemic.

Method

This is a cross-sectional, analytical and quantitative study conducted with the Brazilian population of the five macro-regions (North, Northeast, Southeast, South and Midwest),

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between June and July 2020. Individuals aged over 18 years, with internet access through registration to digital social relationship platforms or messages, were included. Participants who did not fully fill out the questions of the research instrument were excluded. For this purpose, a non-probabilistic convenience sample was used, ending data collection when a minimum number of 5,000 people were obtained, including all Brazilian macro-regions.

Data were collected using the following self-administered instruments: sociodemographic questionnaire; semi-structured questionnaire on the pattern of interpersonal relationships and the unique feeling of each participant regarding the COVID-19 pandemic; and Instrument for Assessing Tolerance in Friendship Relations (ATRA)[8]. These were typed in the Google form® and submitted by social platforms: Facebook®, Twitter®, WhatsApp® and Instagram®. Such instruments could only be answered after the digital confirmation of acceptance to participate in the study, by signing the Informed Consent Form (ICF).

The sociodemographic questionnaire, constructed by the authors, involved the following variables: Federation Unit, date of birth, gender, sexual orientation, race, education, higher education institution, monthly income, region of residence and residents in the household (alone or not). The semi-structured questionnaire addressed the pattern of relationships and the feeling about the COVID-19 pandemic, and contained the following questions: "In your family environment, is friendship tolerance satisfactory?", "Have your friends helped you overcome the tensions experienced during the COVID-19 quarantine/social isolation period?", "Do you believe that there have been changes in your friendship relationships since the beginning of the quarantine/social isolation due to the COVID-19 pandemic?".

ATRA[8] was built in 2019 to assess tolerance in friendship relationships[8]. Its construction was based on semantic analysis of evidence[9] and based on the process of construction of psychometric scales[10]. It is composed of 21 items, arranged on a five-point Likert scale, namely: 1 – strongly agree, 2 – partially agree, 3 – do not agree nor disagree, 4 – partially disagree and 5 –strongly disagree. After the sum of the scores indicated in each item, the scores of the degree of friendship tolerance are obtained, in which the lower the score, the greater the tolerance of friendship relationships. Based on the general mean for the population surveyed, the friendship tolerance is dichotomized in high tolerance (when the individual has a score higher than the population mean) and low tolerance (when the individual has a score lower than the population mean). The items with the highest mean represent the situations in which there is greater tolerance in friendship relationships between individuals[8].

For data organization and analysis, a database was built in the Excel program (Office 2020) and the Statistical Package for the Social Science (SPSS) program, version 25.0, was used. The qualitative variables were presented in absolute (n) and percentage (%) values. Quantitative variables were exposed in descriptive measures: minimum and maximum values, mean and standard deviation.

To test the association between categorical variables of interest, Fischer's exact test (for matrices with expected value below 0.20) and chi-square test were used. P values below 0.05 were considered statistically significant. Cronbach's alpha was used to analyze the reliability of the applied instrument[11]. Also, the Wordle system was used, available on the website "www.wordle.net", for the construction of the word cloud for the variable "feeling about the COVID-19 pandemic". This technique consists of using different font sizes and types, according to the frequency of words in the analyzed text[12].

This project is part of a larger study entitled: Tolerance in Friendship Relations in the Context of the COVID-19 Pandemic. The project was submitted, via the Brazil platform, for consideration by the Research Ethics Committee (REC), being approved under Opinion n. 4.113.127, on June 26, 2020. Furthermore, in compliance with the Guidelines and Regulatory

Standards for Research Involving Human Beings, Resolution of the National Health Council (CNS) 466/12, the Informed Consent Form was presented and signed before the response to the instruments (in online mode) by the subjects who agreed to participate in the research.

Results

Of the 5,315 people who were invited to the study, 24 did not agree to participate, which led to a population of 5,291 subjects. Cronbach's Alpha analysis showed a value of 0.80 for the 21 items of the ATRA, which attests to satisfactory reliability to the instrument. Table 1 shows the sociodemographic characterization data of the population surveyed.

There is a predominance of subjects aged between 18 and 29 years (64.0%), females (81.5%), heterosexuals (71.2%), white race/color (50.7%), who receive between 4 and 10 minimum wages (31.1%). They are linked to private educational institutions (40.4%), have complete higher education (51.4%), are from the Midwest (33.8%) and Southeast (33.3%) and most live with other people (86.9%).

Table 1 – Sociodemographic characterization of the surveyed population. Brazil – 2020. (N=5,291) (continued)

Variables	n
Age group	
18 - 29 years	3,403
30 - 49 years	1,450
50 - 59 years	196
≥60 years	242
Gender	
Female	4,310
Male	956
Other	25
Sexual Orientation	
Heterosexual	3,768
Homosexual	621
Bisexual	786
Others	89
Uninformed	27
Higher Education Institution	
Public	1,743
Private	2,135
No current education institution	1,413
Schooling	
Primary education	55
Secondary education	1,212
Higher education	2,717
Post-graduation	946
MSc	265
PhD	96
Living Alone	
Yes	693
No	4,598
Race	
Yellow	149
White	2,685
Indigenous	20

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Table 1 – Sociodemographic characterization of the surveyed population. Brazil – 2020. (N=5,291) (conclusion)

Variables	n
Race	
Brown	1,777
Black	615
Other	45
Monthly Income	
20 or more minimum wages	204
Between 10 and 20 minimum wages	632
Between 4 and 10 minimum wages	1,647
Between 2 and 4 minimum wages	1,549
Up to 2 minimum wages	1,259
Place of residence	
Midwest	1,789
South	528
Southeast	1,760
Northeast	984
North	182
Outside Brazil	48

Source: Created by the authors.

Table 2 shows the evaluation of the pattern of interpersonal relationships and the unique feeling of each participant regarding the COVID-19 pandemic. There is a predominance of individuals who consider their tolerance in friendship relationships in the home environment satisfactory (88.9%) whose friends helped them overcome the tensions experienced during the quarantine/social isolation period (82.8%) and who believe there has been a change in friendship relationships since the beginning of the quarantine (73%).

Table 2 – Pattern of interpersonal relationships and the unique feeling of each participant about the COVID-19 pandemic. Brazil – 2020. (N = 5,291)

Questions	n
In your family environment, is the tolerance of friendship satisfactory?	
Yes	4,704
No	587
Did your friends help you overcome tensions during the social isolation of COVID-19?	
Yes	4,382
No	909
Do you believe that there have been changes in your friendship relations since the beginning of the quarantine/social isolation due to the COVID-19 pandemic?	
Yes	3,863
No	1,428

Source: Created by the authors.

Figure 1 presents the word cloud obtained for the question: "Define your feeling in a word before the COVID-19 pandemic". The feelings most frequently mentioned by the respondents were: anxiety (n=594) and fear (n=513), followed by sadness (n=311) and anguish (n=250).

Figure 1 – Word cloud obtained for the question: Define your feeling before the COVID-19 pandemic

Source: Created by the authors.

Table 3 shows data on the evaluation of tolerance in friendship relationships in the population during the COVID-19 pandemic. There was a predominance of low tolerance in friendship relationships (53.1%) in the population analyzed. It is observed that "accept the defects of friends; understand friendship as accepting the other person the way he/she is; strive to find something good in people; understand and keep friendships demand extreme dedication; and apologize even if not wrong" are the situations in which the subjects are more tolerant in their friendship relationships.

Table 3 – Evaluation of tolerance in friendship relations in the population during the COVID-19 pandemic. Brazil – 2020. (N = 5,291)

Tolerance in friendship relationships	
General Classification	**n**
High	2,483
Low	2,808
Items with the highest mean in the Assessment of Tolerance in Friendship Relationships	
Item	**Mean**
I accept the defects of my friends, because I know that I also have defects	4.44
Friendship is accepting the other person as he/she is	4.31
I always strive to find something good in people	4.22
Maintaining friendships is something that demands extreme dedication	4.11
I have already apologized even without being wrong	3.89

Source: Created by the authors.

Table 4 describes the results of the analysis of the association of sociodemographic characteristics and the pattern of interpersonal relationships/feelings with the change in the relationships of friendship tolerance during the COVID-19 pandemic. There was a statistically significant association between sexual orientation (p=0.001), housing region (p=0.001), schooling (p=0.004) and higher education institution (p<0.001) with the change in friendship tolerance relationships (p<0.001), so that the percentage of change in friendship relationships was higher among heterosexuals (51.2%), living in the Southeast (24.6%) and Midwest (24.0%), with

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complete higher education (38.4%) and linked to private institutions (29.9%). Moreover, the change in friendship tolerance relationships was greater among subjects who reported receiving help from friends to overcome tensions during social isolation (59.6%).

Table 4 – Analysis of the association of sociodemographic/standard characteristics of interpersonal relationships with the change in friendship tolerance relationships during the COVID-19 pandemic. Brazil – 2020. (N = 5,291)

Variable**	Change in tolerance in friendship relationships in the pandemic	
	Yes n (%)	No n (%)
Sexual Orientation		
Heterosexual	2,696 (51.2%)	1,072 (20.4%)
Homosexual	474 (9.0%)	147 (2.8%)
Bisexual	609 (11.6%)	177 (3.4%)
Others	63 (1.2%)	26 (0.5%)
Place of residence		
Midwest	1,269 (24.0%)	520 (9.8%)
South	419 (7.9%)	109 (2.1%)
Southeast	1,299 (24.6%)	461 (8.7%)
Northeast	705 (13.3%)	279 (5.3%)
North	141 (2.7%)	41 (0.8%)
Outside Brazil	30 (0.6%)	18 (0.3%)
Schooling		
Primary education	37 (0.7%)	18 (0.3%)
Secondary education	885 (16.7%)	327 (6.2%)
Higher education	2031(38.4%)	686 (13.0%)
Post-graduation	658 (12.4%)	288 (5.4%)
MSc	193 (3.6%)	72 (1.4%)
PhD	59 (1.1%)	37 (0.7%)
Higher Education Institution		
Public	1,310 (24.8%)	433 (8.2%)
Private	1,580 (29.9%)	555 (10.5%)
No education institution	973 (18.4%)	440 (8.3%)
Did your friends help you overcome tensions during the social isolation of COVID-19?		
Yes	3,156 (59.6%)	1,226 (23.2%)
No	707 (13.4%)	202 (3.8%)

Source: Created by the authors.

Notes:

 * Statistically significant association.

** The variables gender, race, living alone and monthly income did not show a statistically significant association (p <0.05) with the estimated outcome.

Discussion

The sociodemographic data found in another study[5], also conducted in Brazil in all Federative Units and also using social networks for data collection, showed that, of the 16,440 valid responses in the sample, 69% of the people were female, corroborating the pattern found in this study. However, regarding income, in a nationwide survey[5], 34% of the answers were in the range of up to 2 minimum wages, as opposed to the findings of this research, according to which most of the interviewees had an income of 4 to 10 minimum wages. It is believed that this difference in income range is justified due to this study having a large part of the participants living, mostly, in more privileged regions of the country, such as the Midwest and Southeast.

Even so, when the population studied does not reflect the Brazilian reality, in which more than half of the population lives on less than one minimum wage or in informality, it is important to emphasize that, for these people, quarantine measures, the situation of social vulnerability, the fact of not having access to treated water, the difficulty of understanding the prevention measures against COVID-19[13-14] and all this social complexity can confer discrepancy of the reality portrayed and, thus, does not allow the data to be generalized and representative for the entire Brazilian population.

Regarding the level of education, which, in the population of this study, was mostly higher education, this association can be due to the fact that the university experience can influence social, technical, cognitive and affective aspects of the students. Similar to that found in this study, another study concluded that people with higher education have higher levels of altruism and interpersonal flexibility. This fact suggests that higher education can influence affective and cognitive aspects of empathy, explaining the association found[7,15]. From another perspective, a Chinese study[16] with young people demonstrated that, when highly educated, they demonstrate that they do not need professional psychological support, which may be associated with more developed emotional maturity.

In the sample studied, 40.4% of the participants are linked to private educational institutions and are contained in the age group between 18 and 29 years (64.0%). It is known that this population was impacted in their academic activities, since the measures to prevent the dissemination of COVID-19 included closing schools and universities. Therefore, in this portion of the population, whose main occupation is the studies, the pandemic seems to have a greater effect with psychological consequences and difficulties for the normal development of the school year, as evidenced by a study[17] in China, the first affected country that adopted restrictive measures of social isolation/quarantine. In addition, a Spanish study[18], conducted with 1,596 people during the pandemic, found that, in older people, age acts as a protective factor in coping with the pandemic, resulting in lower psychological impacts in these people in relation to the social and health crisis caused by the pandemic, characterizing an antagonism between age groups.

There was also a predominance of individuals who consider their tolerance of friendship in the home environment satisfactory (88.9%). In this context, it is essential to highlight that marital coexistence emerges as a source of social support, producing more significant effects than the support of other people in the interpersonal network[19].

In addition to the marital relationship, the family network is also constituted as active social support that is established during the process of socialization with the children. This resource, which has been used in this moment of social isolation that is experienced. If the perspective is broadened, in addition to a bond based on feelings of security, trust and love, it is perceived that resilience is woven into a network of relationships and experiences throughout the life cycle and between generations[19].

The results of this study also highlighted that friends helped overcome the tensions experienced during the quarantine/social

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isolation period and that they believe there has been a change in friendship relationships since the beginning of the quarantine. Thus, relationships seem to have been shown to have been an important coping tool and strategy associated with idle time, maintenance of routines and habits in coexistence during isolation, in which individuals perceived that the support of people with whom they live and occupy time and space becomes a predictor for coping with adversity[20], corroborating the findings of this study.

Despite the support reported by the participants, the feelings regarding the most cited COVID-19 pandemic were anxiety, fear, sadness and anguish. In line with a study[21] conducted with 14,992 people in 2015 during the Middle East Respiratory Syndrome epidemic, symptoms of anxiety and anger were identified in people, as well as risk factors for such feelings, both in the isolation period and in 4 to 6 months after the release of quarantine.

The duration of quarantine is also associated with psychological problems, since the longer individuals experience isolation, the more stressors can be experienced, considering that they can still be triggered post-pandemic[22].

Also studies[23] with the Chinese population, the first country that adopted quarantine and social isolation as protective measures for the dissemination of the new coronavirus, indicate that there are possible consequences of general psychological suffering of this mass confinement. In a sample of more than 1,000 Chinese, the results showed a higher rate of anxiety, depression, harmful alcohol use and lower mental well-being than the general population indexes[23].

Although there are measures to prevent contagion from appearing not to be related to psychological impact, there are several coping strategies that can help reduce it, such as maintaining a daily routine, reading exercise, reducing overexposure to information about the pandemic and spirituality work, aiming at integrating various dimensions of health care to promote the well-being of the person and family[18,24].

The present study showed that the majority of those surveyed (53.1%) are not tolerant in the friendship relationship. Even so, the situations were most often pointed out: "I accept the defects of my friends, as I know that I also have defects; strive to find something good in people; understand and keep friendships demand extreme dedication; and apologize even if not wrong for knowing I also have defects", that is, situations in which people are more tolerant. Thus, they recognize the factors for a good friendship relationship, but do not practice them. This finding can be explained by the fact that, during the quarantine period, the negative psychological effect of the situation is so influential that it can change the pattern of people's behavior and cause loss of control and balance between relationships[22].

Moreover, in the case of young students, private educational institutions adapted during quarantine and social isolation not to totally paralyze their activities, remaining connected in some way and, thus, young people were more connected through social networks, reading or talking[6].

Another highlighted factor was receiving help from friends during quarantine, even at the lowest tolerance levels. This fact may have occurred because family members did not know how to give help for this new demand. In addition, it is important to give them the chance to express themselves and tell what their real needs are to be helped[25].

The study has limitations because it does not portray all social and age extracts of the Brazilian population, besides the fact that there are not many studies with this approach to promote broad discussion and debate on the subject, with repercussion even on the possible explanations for the associations found. Nevertheless, to capture the phenomenon of relations in this quarantine, light technologies applied to many participants were used, enabling the variability of the results that may reflect the moment experienced by society and the impact of the pandemic on relationships.

Conclusion

Individuals consider their tolerance in friendship relationships in the home environment satisfactory, friends have helped overcome the tensions experienced in social isolation and believe there has been a change in friendship relationships since the beginning of quarantine. The feelings towards the COVID-19 pandemic most cited were anxiety and fear, followed by sadness and anguish.

There was a predominance of low tolerance in friendship relationships in the population analyzed. It was observed that "accept the defects of friends; understand friendship as accepting the other person the way he/she is; strive to find something good in people; understand and keep friendships demand extreme dedication; and apologize even if not wrong" were the situations in which the subjects are more tolerant in their friendship relationships.

The percentage of change in friendship relationships was higher, with a statistically significant association between heterosexuals (51.2%), residents in the Southeast (24.6%) and Midwest (24.0%), with higher education completed (38.4%) and linked to private institutions (29.9%). Furthermore, the change in friendship tolerance relationships was greater among subjects who reported receiving help from friends to overcome tensions during social isolation (59.6%). Thus, the sociodemographic factors and the social support received from friends are associated with changes in tolerance in friendship relationships during the COVID-19 pandemic.

Collaborations:

1 – conception, design, analysis and interpretation of data: Iel Marciano de Moraes Filho, Thais Vilela de Sousa, Thaís Pereira Lima and Rodrigo Marques da Silva;

2 – writing of the article and relevant critical review of the intellectual content: Iel Marciano de Moraes Filho, Thais Vilela de Sousa, Thaís Pereira Lima, Francidalma Soares Sousa Carvalho Filha, Mayara Cândida Pereira and Rodrigo Marques da Silva;

3 – final approval of the version to be published: Iel Marciano de Moraes Filho, Thais Vilela de Sousa, Thaís Pereira Lima, Francidalma Soares Sousa Carvalho Filha, Mayara Cândida Pereira and Rodrigo Marques da Silva.

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