

Which factors explain information exchange and user referral among program implementers?

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Funding information

Universidad Tecnológica de Bolívar, Grant/Award Number: 23011398; Center for Development and Innovation at Universidad Pontificia Bolivariana, Grant/Award Number: 203-01/17/G-003

Abstract

The Program for Psychosocial Care and Comprehensive Health for Victims serves, on a yearly basis, an average of 25,000 users in northern Colombia alone. The program is implemented by multidisciplinary teams comprised of psychologists, social workers, and community facilitators, who step in at the individual, family, and community levels. An attempt has been made to determine the effect generated by the timeframe through which professionals have been engaged with the program-filling positions of centrality and betweenness within the networks of information exchange and user referral, including the potential mediating effect from the structure of the egocentric network of implementers in the two aforementioned networks and the moderating effect of the sense of belonging to a team of professionals. Both centrality and betweenness are positional measures describing the location actors occupied within the network structure. Centrality reflects the nominations made and receipt by an actor in a network and is considered an individual indicator of prominence and power. Betweenness shows the times that an actor act as a bridge among two actors in a network and it is considered an indicator of strategic positioning in social networks. An egocentric network is the local structure of relationships that each implementer maintains with his or her direct contacts. In this study, 112 active implementers were included, mostly women ($n = 97$, 88.2%), who had

been working on the program for 16.9 months on average ($SD = 14.7$). Through conditional process analysis, it has been shown that the time that the implementers have been working on the program and the sense of belonging to the task team are relevant factors that interact with each other toward explaining the level of centrality and betweenness of professionals in the information exchange and user referral networks.

KEYWORDS

Colombia, conditional process analysis, implementation, network analysis, program evaluation, sense of community

1 | INTRODUCTION

1.1 | Effect of implementation on program outcomes

The mechanism traditionally used to verify compliance with the objectives of the intervention has been the analysis of outcomes once the program ends. However, in recent decades, special attention has been paid to how the program activities influence the effectiveness of interventions. For example, program designers and implementers make efforts to understand how fidelity (the degree of implementations is according to the original program design) and adjustment (how the program is adapted to participants and to intervention contexts) impact the program's effectiveness (Brownson et al., 2017). The implementation process refers to the manner in which the actions that shape the program are rolled out, thus adapting to the specific intervention context. Such is the relevance that the systematic analysis of this process has acquired that it has become an independent discipline called *implementation science*, which encompasses the theoretical models and methods that make the adoption of practices based on empirical evidence possible (Bauer et al., 2015).

An assessment of the implementation is essential to examine the internal and external validity of programs (Durlak & DuPre, 2008, p. 328); interventions that include systems to assess the implementation process perform better than those that lack monitoring systems (Derzon et al., 2005; Smith et al., 2004). The effective assessment of intervention programs requires the inclusion of mechanisms to control the application process; the review carried out by Durlak and DuPre (2008) showed that in 76% of the more than 500 evaluated interventions, the application process affected half of the indicators utilized to assess the effectiveness of the health prevention and promotion programs analyzed.

Wandersman et al. (2008) suggest that the factors of the implementation process that most influence program outcomes are (a) the innovative elements of the intervention; (b) the support system that ensures the continuity of actions; (c) organizational capacity; (d) the features of the communities where the program is being applied; and (e) the implementers. This study focuses on examining the factors associated with program implementers, as they are in charge of making the adaptations of activities, as well as for interacting with users, with the community context, and with initiative managers. In this study, the term *user* identifies subjects who receive attention through intervention programs. All the activities mentioned are conducted during program continuum and are essential to guarantee program effectiveness. By aiming the analysis at the implementers, on a parallel basis, actions are being carried out on the factors that affect the effectiveness of the programs. This justifies the focus of implementation

analysis on the professionals who perform the activities that provide the intervention programs with content. The following section addresses the influence of factors associated with implementers in the development of programs.

1.2 | Role of implementers in the effectiveness of interventions

Oftentimes, implementation assessments focus solely on examining procedural indicators such as the level of user participation or the intensity with which program-based content is delivered (Angrist, 1975). However, more attention has increasingly been paid to the role played by the professionals who carry out the actions. This perspective points out that elements such as the fidelity with which the program is applied, the quality of the service, and the adaptation of the intervention to the context and to the beneficiaries directly rely on the implementers (Berkel et al., 2011).

The level of competence of the implementers is crucial to guarantee the success of programs. Professionals who demonstrate a higher degree of competence tend to better understand the characteristics of users, the context of the intervention, and, at the same time, are aware of the need to make adaptations to guarantee the effectiveness of programs (Dariotis et al., 2008). Professionals who have been implementing a program for a longer period of time develop a more realistic vision of the intervention, are considered key informants, and are more inclined to adopt innovations (Dolcini et al., 2010; Greenhalgh et al., 2004).

Previous studies confirm the influence that the most experienced professionals exert on the outcomes of the intervention, thus influencing the behavior of users with regard to the program (Vaughn et al., 2013). The most senior professionals and those who identify themselves with the objectives of the intervention ramp up the adherence of users to the treatment (Cross et al., 2015). In this sense, empirical evidence suggests that seniority is a key attribute of implementers that constitutes an indirect sign of commitment and implication of professionals in the intervention processes. In a comparative study of US and Korean workers, Hong et al. (2016) found that emotional organizational commitment is directly influenced by employee seniority. This evidence supports the connections between the time that implementers have been working in the program and the level of implication with program goals. Duncan et al. (2012) showed that seniority and the identification of professionals with the initiatives that they implement were key variables for reducing mistakes during clinical practice. The antecedents advice inclusion of seniority and the level of identification of professionals with program objectives as influential variables to explain the interplay among program applicators during the implementation process.

The literature demonstrates how important it is for the professionals who develop the program to identify with the team of implementers and be committed to the goals of the intervention (Cross & West, 2011). Despite the relevance that the sense of belonging that implementers experience toward the teams seems to have in the results of the intervention, the moderating effect that this process claims on the relational behavior of implementers has rarely been studied.

Previous studies indicate that behaviors such as exchanging data and referring users are decisive for programs to achieve good outcomes (Wensing et al., 2010). On the contrary, information exchange and the referral of users between professions are activities inherent to the implementation of programs; therefore, in the development of the programs, a high level of connectivity is required on an interpersonal, intragroup, and intergroup basis among the various agents involved in the intervention (Greenhalgh et al., 2004). Programs with smooth horizontal and vertical communication patterns perform better. The exchange of data about the users, about the activities, and potential barriers of the program allows for the detection of errors in the intervention process, thus correcting them and, consequently, improving the organization's operation and the quality of the service (Kierkegaard et al., 2014).

Effective programs usually have protocols for referring users between professionals or between organizations that implement the same program (Elwy et al., 2020). User referral enhances clinical diagnosis, makes it easier for beneficiaries to be cared for by the appropriate service, increases adherence to treatment, improves the results of

the intervention, and heightens user satisfaction from the service received (Yousefi-Nooraie et al., 2019). Therefore, the fact that implementers occupy central positions in information exchange and user referral networks is an indicator of the proper functioning of the implementation. From such a standpoint, structural assessment techniques (Social Network Analysis [SNA]) are useful tools to analyze the relationships that bind the implementers and the effects that these interactions exert on program indicators. The contributions of SNA toward enhancing program implementation are outlined below.

1.3 | Network analysis and program implementation

SNA contributes to strengthening the theories and practices associated with the development of intervention programs (Gest et al., 2011), which are carried out by various agents (professionals, administrators, community representatives, etc.) who work in a coordinated fashion to provide services. In practice, intervention programs take the shape of a system—a social network—in which factors that sway implementation, such as interdependence, influence-based processes, hierarchy, roles, and power relations, all concur (Luke & Harris, 2007). Interdependence and influence between actors who are part of the same social network are foundational principles of structural analysis (Marsden & Friedkin, 1993). This implies that the behavior of the subjects, to a certain extent, is contingent on the actions carried out by other group members and that the stakeholders can directly and indirectly influence the behavior of other components of the network. For these reasons, SNA is a powerful ally to examine the influence-based processes that occur among professionals who implement intervention programs (Valente & Pitts, 2017).

Some proposals systematize SNA contributions to improve the program assessment system (Patterson et al., 2020; Popelier, 2018), whereas others focus on reinforcing the implementation phase (Ramos-Vidal et al., 2020; Valente et al., 2015). The work of Valente et al. (2015) shows that structural assessment techniques optimize the adoption of technical innovations, speed up the implementation of actions, and contribute to upholding programs over time. SNA allows for an evaluation of the networks formed through the interactions that connect implementers, users, community members, and program coordinators. A second contribution is that, by analyzing centrality measures such as degree or betweenness, it is possible to identify professionals who fill influential or strategic positions within the program's operational structure. Such stakeholders can become early adopters of innovations (Palinkas et al., 2018; Rogers, 2003). Lastly, through cohesion measures such as density or centralization, it is possible to achieve a representation of the entire network and identify isolated stakeholders, subgroups, and cutoff points at which communication is interrupted (Fujimoto et al., 2009).

A structural assessment is a comprehensive technique insofar as it leads to the adoption of a multilevel approach that is capable of simultaneously analyzing elements of an individual, group, and institutional nature. For instance, centrality measures such as degree and betweenness are instrumental in identifying the position that professionals take within a clinical information exchange network (Palinkas et al., 2013). Degree centrality is a positioning measure that identifies the stakeholders who have the highest number of contacts with other network members, whereas betweenness leads to pointing out the stakeholders who fill strategic positions, thus serving as a bridge between social groups (Wasserman & Faust, 2013). This analysis, when considering the direct and indirect relationships that professionals maintain with other network members, is useful for selecting professionals who can become disseminators of good practices. Stakeholders with a high level of degree centrality tend to occupy the central zone of networks and maintain many contacts with other group members, a property that provides them with the ability to influence the behavior of other stakeholders (Wasserman & Faust, 2013, p. 200). Stakeholders with a high betweenness centrality preferentially link other stakeholders in a social network. Stakeholders with a high level of betweenness are influential because their position in the network allows them to control the data that flows between different social circles.

Another possible application from the individual point of view is to analyze the local network of contacts (ego-centered network) that maintains a focal stakeholder, called the ego, with other network members, known as alter egos (Everett & Borgatti, 2005). This second perspective is based on theories that examine the emergence of individual social capital (i.e., Burt, 1992), and has been given less attention than the previous individual approach based on analyzing centrality measures. Research in the organizational field suggests that the structure of ego-centered networks affects the generation and adoption of innovations by other network members (Carnovale & Yenyurt, 2015). The structure of egocentric networks is usually assessed through indicators such as the size of the network, the local density showing the percentage of relationships that occur with regard to the total number of possible relationships, and the broker parameter that shows the number of times that the ego is placed on the shortest path that connects two stakeholders within the egocentric network (Burt, 1992). Within the context of the PAPSIVI program implementation, by analyzing professionals' egocentric networks, the focus is centered on evaluating the local web of contacts of each professional instead of the whole network structure formed by all program staff. Egocentric networks describe a microlevel phenomenon that has the potential of shaping implementers' behavior and their professional practice via social contagion (i.e., Burt, 1987). Implementers who share the same contacts at the local level are exposed to the same ideas and sources of influence, and therefore, this fact may promote the adoption of similar ways to execute program activities. However, when analyzing centrality measures like degree and betweenness, the aim is to evaluate social influence at the whole-network level. Professionals occupying similar positions within organizational networks are exposed to the same social forces and this phenomenon may provoke subjects to show similar power relations regarding the rest of the network members and the same perceptions about their organizational context (Ibarra & Andrews, 1993). Consequently, to some extent, professionals who are located at the same structural position in a social network tend to exhibit similar behavioral patterns and capacity to exert influence over other network members (Brass, 1984). This budding line of research displays the suitability of combining the analysis of individual centrality measures with the analysis of egocentric networks. Once the role that professionals play has been exposed, along with the implementation process in the outcomes of the programs, the following section presents the context of the study and the working hypotheses.

This study sought to analyze the implementation of the Program for Psychosocial Care and Comprehensive Health for Victims (PAPSIVI; for its Spanish acronym), designed by the Colombian Government to improve the mental health and psychosocial well-being of 9 million people victimized by the armed conflict in Colombia included in the Single Registry for Victims (<https://www.unidadvictimas.gov.co/es/registro-unico-de-victimas-ruv/37394>). The main objective is to identify the factors that affect the effectiveness of the implementation process. The management of the program is currently decentralized in some regions; however, it is the Government, through the Ministry of Health and Social Protection, that is responsible for ensuring compliance with program objectives. The program adopts a multi-level approach that seeks to repair the damage sustained by victims and by society at large by performing interventions at the individual, family, and community levels. The program was conceived as a systemic intervention oriented to increase well-being and resilience by intervening in different domains depending on the needs of each subject. The main objective of this initiative is to repair the damage directly or indirectly experienced by the victims of the conflict. At the individual level, users receive psychological attention for the treatment of mental health problems such as posttraumatic stress disorders, anxiety, and depression. Recent studies showed that the users of this program have suffered at least one episode of violence, usually forced displacement (Ramos-Vidal et al., 2020). Another investigation pointed out that 11.7% of the users who attended the program in other departments of the Colombian Caribbean coast experienced two or more victimization episodes (Campo-Arias et al., 2017). When the intervention is centered on the family unit, the focus of the therapy is to change the familial dynamics, for example, when the head of the family is a victim of forced displaced and this phenomenon produces severe disruptions of the functional roles of family members. In this kind of intervention, psychologists and social workers work in a coordinated way. When the intervention operates at the community level, social workers are agents responsible for conducting activities designed to (a) promote

interaction between community residents to increase their sense of community and responsibility toward the community; (b) strengthen community capacity and readiness to cope with social problems affecting the community; and (c) create bonding social capital by activating trust, commitment, and reciprocity among community members. These activities imply the development of formative actions for the acquisition of skills and competences for solving social problems and the active participation of users in communal activities designed for triggering capacity building, coalition formation, and community empowerment (Anderson-Carpenter et al., 2017; Lardier et al., 2019).

The implementation is carried out by multidisciplinary teams made up of psychologists, social workers, and community facilitators. Psychologists implement individual (psychotherapy) and family (family therapy) interventions; social workers operate at the family level, but fundamentally intervene at the community level by organizing collective action and restoring the social fabric; and community facilitators act as the link between professionals and communities, wherever the program is applied, and are a key component for the correct operation of the intervention, thus influencing its ecological validity.

The implementation of the PAPSIVI in the north of the country has been analyzed, in the following regional Departments of Colombia: Atlántico with 155,938 target subjects (victims who the Government recognizes as requiring psychosocial care through the program), Bolívar with 358,731 subjects, and Córdoba with 274,451 subjects. On average, between these three Departments, 25,000 users are served annually by the program under the individual, family, and community care modalities. In each department, information was collected on the implementation process; specifically, information exchange and user referral among the three types of professionals who carry out the intervention were examined through SNA techniques. Next, the working hypotheses are laid out.

2 | HYPOTHESES

Four hypotheses were formulated to determine the factors that forecast the occupation of centrality and intermediation positions of implementers in the information exchange and user referral networks, taking the effect of mediating and moderating variables into account. Figure 1 provides a visual illustration of the four models designed toward testing the hypotheses.

Hypothesis 1: Degree centrality in the information exchange network will be determined by the timeframe through which implementers have been working in the program, a variable whose effect is mediated by the structure of ego-centered networks, and, in turn, moderated by the sense of belonging held by professionals toward the team of implementers.

Hypothesis 2: Betweenness centrality in the information exchange network will be determined by the time that implementers have been working in the program, a variable whose effect is mediated by the structure of ego-centered networks and, in turn, moderated by the sense of belonging held by professionals toward the team of implementers.

Hypothesis 3: Degree centrality in the user referral network will be determined by the timeframe through which implementers have been working in the program, a variable whose effect is mediated by the structure of ego-centered networks and, in turn, moderated by the sense of belonging held by professionals toward the team of implementers.

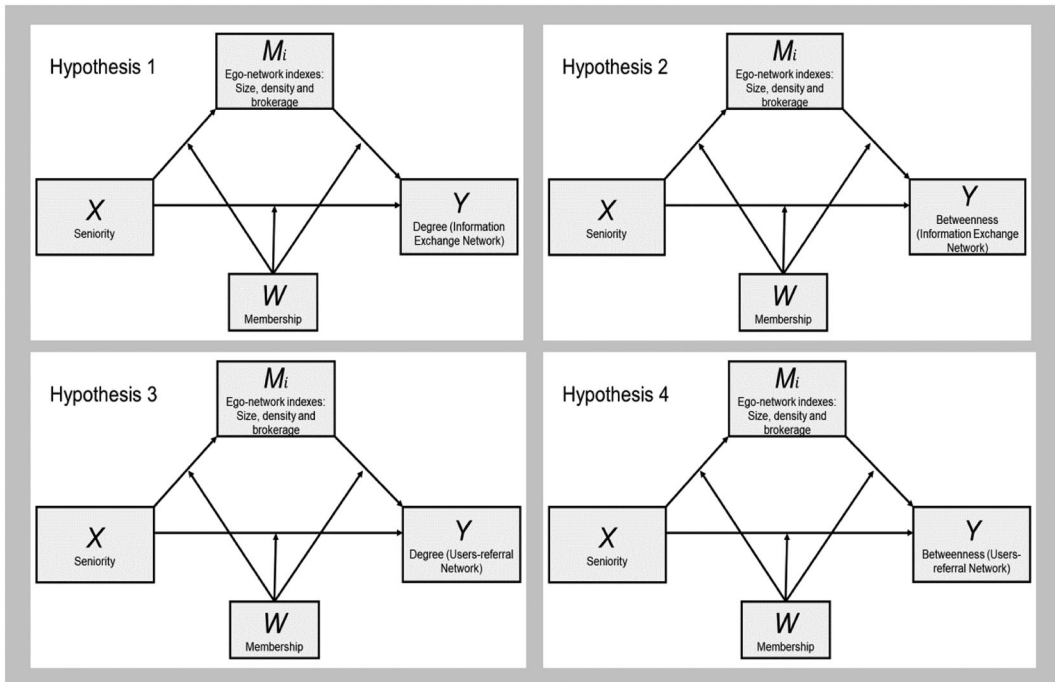


FIGURE 1 Visual illustration of the four moderated mediation models proposed

Hypothesis 4: Betweenness centrality in the user referral network will be determined by the time for which implementers have been working in the program, a variable whose effect is mediated by the structure of ego-centered networks and, in turn, moderated by the sense of belonging held by professionals toward the team of implementers.

3 | METHODS

3.1 | Description of the networks of implementers

Figure 2 shows the information exchange networks and user referral from PAPSIVI implementers in the three departments assessed.

The two types of networks assessed have a low level of structural cohesion that can be observed when examining the overall cohesion measures of each network. Information exchange networks have a moderate density ranging between 11.6% and 12.9% as well as a variable level of centralization that goes from a moderate 22.7% up to 65.5% of the most centralized network. User referral networks show a low-density level ranging between 2% and 17% as well as a moderate level of centralization ranging between 22% and 59%.

3.2 | Research and sampling design

This is an observational exploratory research design. Intentional sampling for convenience was carried out in all three departments. This decision was adopted for increasing the participation of implementers in the study (Lang

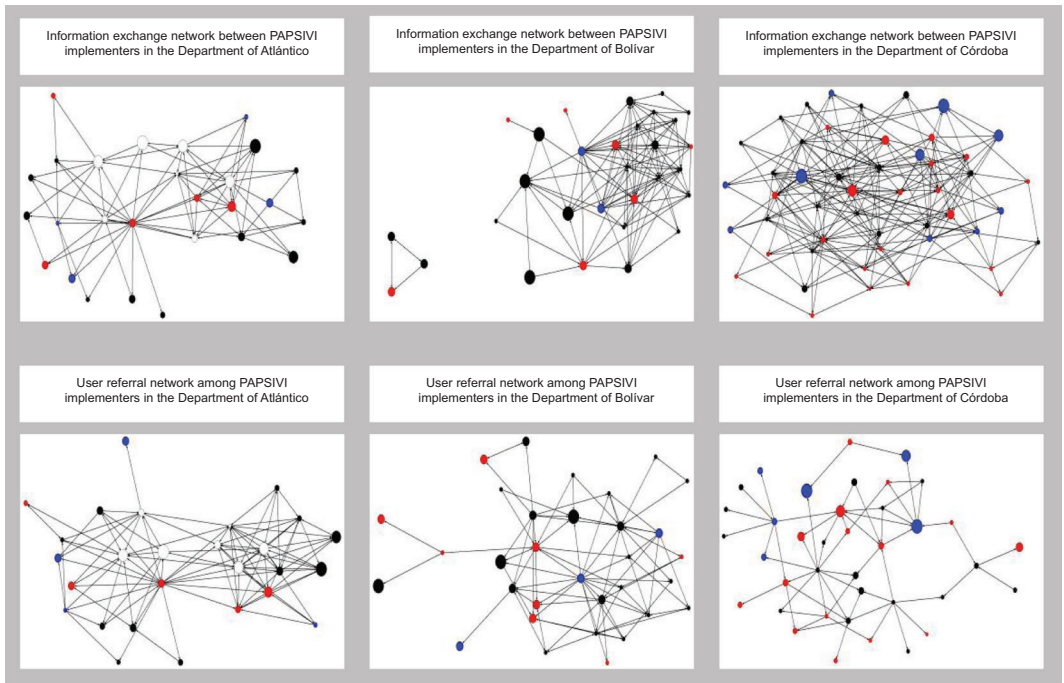


FIGURE 2 Information exchange and user referral networks among program implementers in the Departments of Atlántico, Bolívar, and Córdoba

et al., 2016). First, to access program implementers, the units that coordinate the intervention in the three aforementioned zones were contacted; from the coordination management, a list was submitted with the contact information of all professionals. The fieldwork was carried out between 2017 and 2018.

3.3 | Participants

The sample of this study included professionals who implement PAPSIVI in the three aforementioned departments. In total, 112 professionals participated, mostly women ($n = 97, 88.2\%$), who have been working on the program for 16.9 months on average ($SD = 14.7$). Table 1 shows the distribution of each professional profile across the three entities assessed.

TABLE 1 Distribution of professionals in Atlántico, Bolívar, and Córdoba ($N = 112$)

Department	Psychologists	Social workers	Community advocates	Administrative staff
Atlántico ($n = 27$)	11	4	4	8
Bolívar ($n = 34$)	21	10	3	0
Córdoba ($n = 51$)	18	21	10	2
Total (percentage)	50 (45.45)	35 (22.72)	17 (15.45)	10 (10)

3.4 | Instrument and variables

A questionnaire was designed that included sociodemographic information, standardized scales to assess the sense of community toward the team of professionals, and a structural analysis instrument for identifying the properties of networks for information exchange and user referral among PAPSIVI implementers in each region. A previous study describes the instruments applied (Ramos-Vidal et al., 2020).

3.5 | Dependent variables (Y)

Dependent variables in the four models are degree centrality (H #1) and betweenness (H #2) in the information exchange network, and degree centrality (H #3) and betweenness (H #4) in the user referral network. A stakeholder's degree centrality depends on the nominations issued and received on a social network. It is a measure of social prestige as it allows for the identification of the most prominent subjects in relational terms (Wasserman & Faust, 2013). Betweenness centrality indicates the times that a stakeholder has been placed on the shortest path—the geodesic distance—which links two stakeholders within a social network (Wasserman & Faust, 2013, p. 210). As these are indicators whose value is normalized, it is possible to compare the centrality of the stakeholders in networks of different sizes such as those in the case under study.

3.6 | Independent variable (X)

This is the seniority in the program measured by the number of months that professionals have been working as PAPSIVI implementers.

3.7 | Mediating variables (M)

The size (M_1), density (M_2), and broker parameter (M_3) of the ego-centered network of each participant fulfill the function of mediating variables within the four proposed models. The size shows the number of stakeholders who are part of the ego-centered network for each implementer within the information exchange and user referral networks; the density indicates the proportion of real contacts in relation to the total number of possible contacts, whereas the broker parameter indicates the number of dyads that are not directly linked within the ego-centered network. To calculate such indicators, the indirect method was used, which considers all the stakeholders connected to the ego and from the ego (Burt, 1992).

3.8 | Moderating variable (W)

The sense of belonging to the team of professionals that implements the program acts as a moderating variable. According to McMillan and Chavis (1986), the sense of belonging describes the beliefs and expectations that the subjects experience about the fact that they feel there is a place for them in the group, that they are accepted by the rest of the team members, and that they are willing to sacrifice for the group (p. 10). To assess this variable, a subscale of the instrument developed by Chavis et al. (2008) was applied. The instrument is made up of six items in the form of a statement that participants must answer depending on their degree of agreement (1 = *not agree at all*; 4 = *completely agree*). An example of an item is "I can trust the people on the team." The scale has an acceptable level of reliability ($\alpha = 0.72$).

3.9 | Covariables

Across all the models, the number of users cared for by each professional throughout a regular month and the number of municipalities in which they provide care were included as covariates. This decision was made because both variables can affect the opportunities to exchange information and refer users among professionals.

3.10 | Analysis strategy

The visual representation of graphs and the calculation of relational indicators were performed with *Ucinet* software (v.669) (Borgatti et al., 2002). To test the hypothesis, a variant of the regression analysis known as conditional process analysis was applied (Hayes, 2017, pp. 386–389). The choice of this analysis strategy is based on the fact that this technique allows for the effects of moderation and mediation to be assessed jointly and, at the same time, reveals the magnitude of the direct and indirect conditional effects depending on the level of the moderating variable. Four moderated mediation models were designed to examine the effect of seniority on the organization (*independent*) on degree centrality and betweenness centrality (*dependent*) in the networks of information exchange and user referral, considering the mediating role displayed by the indicators of the professionals' ego-centered networks (size, density, and broker) as well as the moderating effect that the sense of belonging exerts on the team of implementers within the relationship between the remaining variables (see Figure 1).

4 | RESULTS

Table 2 shows the descriptive statistics and the bivariate correlations between the variables studied.

A strong association was observed between degree and betweenness centrality, ranging from $r = 0.371$; $p < 0.001$ and $r = 0.751$; $p < 0.001$, which is common in SNA (Valente et al., 2008). The behavior of indicators from the ego-centered networks and the rest of the parameters, nonetheless, varied considerably depending on the type of relationship assessed. First, the effect of X on each mediating variable will be submitted (M_1 , M_2 , and M_3) taking the moderating effect of W into account, and then, the direct and indirect conditional effects of X over Y are examined.

4.1 | Hypothesis 1

The moderate mediation model proposed to test the first hypothesis introduces an optimal fit when all effects were included in an aggregated manner ($R^2 = 0.912$; $F = 81.14$; $p < 0.0001$) (Table 3). When examining the effect of X on each mediator, including the impact of W , a remarkable variability was observed. Seniority affected the size of the ego-centered network for each participant in the information exchange network; however, this interaction was modulated by the moderating variable. By assessing the significant regions in which W produces significant interactive effects using the Johnson–Neyman technique, it is observed that the moderating effect appeared only at high levels of W (>3.27) and that the most outstanding effects (Effect = 0.17; $SE = 0.03$; $t = 4.93$; $p < 0.0001$) came into play at values nearing the maximum of W (>3.83). In the case of the broker variable, the moderating effect emerged at higher levels of W (>3.41), but this effect was sharply intensified at the highest level of the moderating variable (Effect = 1.05; $SE = 0.29$; $t = 3.6$; $p < 0.0005$). Conversely, it was found that the relationship between the independent and the density-mediating variable of the ego-centered network was not influenced by the effect of W , regardless of its intensity.

TABLE 2 Descriptive statistics and bivariate correlations among study variables

No.	Variables	M	SD	1	2	3	4	5	6	7	8	9	10	11
1	Seniority (months)	16.99	17.7											
2	Membership	3.38	0.42	0.282**										
3	Ego-N size (Inf. Ex.)	7.05	4.04	0.341**	0.331**									
4	Ego-N size (User ref.)	2.94	2.77	0.446**	0.345**	0.653**								
5	Ego-N density (Inf. Ex.)	49.07	14.9	0.078	0.156	0.114	0.268**							
6	Ego-N density (User ref.)	18.13	17.24	0.209	0.228	0.219	0.319**	0.669**						
7	Ego-N brokerage (Inf. Ex.)	20.75	22.88	0.293**	0.253**	0.891**	0.531**	-0.114	-0.022					
8	Ego-N brokerage (User ref.)	6.12	12.06	0.356**	0.275**	0.510**	0.868**	0.114	0.040	0.466**				
9	Degree (Inf. Ex.)	0.16	0.11	0.483**	0.348**	0.867**	0.741**	0.431**	0.434**	0.694**	0.553**			
10	Degree (User ref.)	0.08	0.06	0.515**	0.330**	0.625**	0.944**	0.416**	0.437**	0.458**	0.792**	0.834**		
11	Betweenness (Inf. Ex.)	0.02	0.03	0.252**	0.165	0.692**	0.412**	-0.143	-0.022	0.822**	0.319**	0.587**	0.375**	
12	Betweenness (User ref.)	0.01	0.03	0.422**	0.187	0.505**	0.673**	0.228*	0.137	0.459**	0.611**	0.677**	0.751**	0.480**

Abbreviations: Ego-N, Ego-network; Inf. Ex, Information exchange network; User ref., Users referral network.

* $p < 0.05$.** $p < 0.001$.

TABLE 3 Regression coefficients of the moderated mediation model to test Hypothesis 1

Output variable → degree centrality in the information exchange network						
Model summary ($R = 0.946$; $R^2 = 0.912$; $MSE = 0.0014$; $F = 81.1480$; $df1 = 11$; $df2 = 87$; $p < 0.0001$)						
Variables	Coeff.	SE	t	p	LLCI	ULCI
Constant	-0.0085	0.1596	-0.0531	0.9578	-0.3258	0.3088
Seniority (X)	0.0004	0.0032	0.1105	0.9123	-0.006	0.0067
Ego-Network Size (M_1)	0.0513	0.0222	2.3127	0.0231	0.0072	0.0954
Ego-Network Density (M_2)	-0.0012	0.0028	-0.4285	0.6694	-0.0068	0.0044
Ego-Network Brokerage (M_3)	-0.0074	0.004	-1.8454	0.0684	-0.0153	0.0006
Membership (W)	-0.038	0.0466	-0.8163	0.4165	-0.1306	0.0546
$X \times W$	0.0004	0.0009	0.4251	0.6718	-0.0014	0.0022
$M_1 \times W$	-0.0082	0.0065	-1.2501	0.2146	-0.0211	0.0048
$M_2 \times W$	0.001	0.0008	1.2563	0.2124	-0.0006	0.0027
$M_3 \times W$	0.002	0.0012	1.7681	0.0805	-0.0003	0.0043
# Districts	0.003	0.0015	1.9914	0.0496	0	0.0061
# Users attended	0.0000	0.0000	-0.6631	0.5090	0.0000	0.0000
Test of the highest-order unconditional interactions: Output variable → degree centrality in the information exchange network						
Variables	Change in R^2	F	df1	df2	p	
$X \times W$	0.0002	0.1807	1	87	0.6718	
$M_1 \times W$	0.0016	1.5626	1	87	0.2146	
$M_2 \times W$	0.0016	1.5783	1	87	0.2124	
$M_3 \times W$	0.0032	3.1263	1	87	0.0805	
Direct and indirect conditional effects: Conditional direct effects of X on Y						
Levels of W	Effect	t	p	LLCI	ULCI	
3	0.0015	2.9445	0.0041	0.0005	0.0026	
3.3333	0.0017	4.7447	0.0001	0.001	0.0024	
3.8333	0.0019	3.6633	0.0004	0.0009	0.0029	
Conditional indirect effects: $X \rightarrow M_1 \rightarrow Y$						
Levels of W	Effect	Boot SE	Boot LLCI	Boot ULCI		
3	0.0001	0.0011	-0.0018	0.0026		
3.3333	0.0018	0.0007	0.0006	0.0033		
3.8333	0.0035	0.0013	0.0019	0.0069		
Conditional indirect effects: $X \rightarrow M_2 \rightarrow Y$						
Levels of W	Effect	Boot SE	Boot LLCI	Boot ULCI		
3	0	0.0004	-0.0007	0.0009		
3.3333	0.0001	0.0003	-0.0004	0.0007		
3.8333	0.0004	0.0004	-0.0004	0.0013		

Conditional indirect effects: $X \rightarrow M_3 \rightarrow Y$				
Levels of W	Effect	Boot SE	Boot LLCI	Boot ULCI
3	0	0.0004	-0.0009	0.0006
3.3333	-0.0002	0.0003	-0.0009	0.0003
3.8333	0.0004	0.0013	-0.0024	0.0026

Abbreviations: LLCI, lower limit confidence interval; ULCI, upper limit confidence interval.

The direct and indirect conditional effects of X over Y showed that the moderating variable intensified the relationship between both variables, but this incidence occurred at the highest values of W . The value at which the moderating variable began to produce observable effects on the ratio of X over Y was 3.3 and, at this point, the size of the effect, though moderated, was observable: 0.0017 ($t = 4.744$; $p < 0.0001$). The indirect conditional effects of X over Y including the mediating variables and the moderating effect showed similar results. The size of the ego-centered network (M_1) was the variable that generated a higher mediating effect (Effect = 0.0035), whereas the density (M_2) and the broker parameter (M_3) produced an insubstantial effect. In any case, the moderation effect appeared at the highest levels of W . It is worth pointing out that the number of districts in which professionals paid attention was associated with the degree centrality of professionals in the information exchange network. Considering the results presented, the first hypothesis can be accepted, although it must be pointed out that the moderating effect of the sense of belonging on the independent and mediating variables emerged only at the highest values.

4.2 | Hypothesis 2

The summary of the second moderated mediation model that includes the interactive effects between the different types of variables explained 69.7% of the betweenness variance of implementers in the information exchange network ($R^2 = 0.697$; $F = 18.189$; $p < 0.0001$). In the case of this model, as in the previous model, when examining the unconditional interaction test at the higher order, it was observed that the interactive effect of the independent and the moderating variables produced an increase of 0.53 ($F = 7.828$; $p < 0.0063$) in the value of R^2 , which amplified the effect produced on M_1 . Given that the mediating, independent, and moderating variables were identical to those of the previous model, we refer to the above description and will now examine the results of Table 4.

The direct conditional effect of X over Y showed that the moderating variable exerted no outstanding effect on the dependent variable. In this model, the moderating variable only maintained a remarkable low-intensity relationship with the broker variable of the information exchange network, whose indirect conditional effect was 0.0018 (Boot SE = 0.0013), and such an impact occurred exclusively at the highest levels of the moderating variable ($W = 3.83$). Below this threshold, the moderating effect becomes diluted in the rest of the interactions. The results reflected partial support for the second hypothesis, given that, although a positive association was observed between the dependent and the independent variable ($r = 0.252$; $p < 0.001$), and between the dependent and two of the three mediating variables (M_1 and M_3), as no significant effects of the mediating or moderating variables were identified in the global adjustment of the model, it was not possible to fully accept the second hypothesis.

TABLE 4 Regression coefficients of the moderated mediation model to test Hypothesis 2

Output variable → betweenness in information exchange network						
Model summary ($R = 0.834$; $R^2 = 0.697$; $MSE = 0.005$; $F = 18.189$; $df1 = 11$; $df2 = 87$; $p < 0.0001$)						
Variables	Coeff.	SE	t	p	LLCI	ULCI
Constant	0.0407	0.0942	0.4317	0.667	-0.1465	0.2278
Seniority (X)	-0.0003	0.0019	-0.181	0.8568	-0.0041	0.0034
Ego-Network Size (M_1)	0.0151	0.0131	1.1556	0.251	-0.0109	0.0411
Ego-Network Density (M_2)	-0.0014	0.0017	-0.8146	0.4175	-0.0046	0.0019
Ego-Network Brokerage (M_3)	-0.0017	0.0024	-0.7104	0.4794	-0.0064	0.003
Membership (W)	-0.0088	0.0275	-0.3217	0.7484	-0.0635	0.0458
$X \times W$	0.0002	0.0005	0.2986	0.766	-0.0009	0.0013
$M_1 \times W$	-0.0052	0.0039	-1.3608	0.1771	-0.0129	0.0024
$M_2 \times W$	0.0004	0.0005	0.8343	0.4064	-0.0006	0.0014
$M_3 \times W$	0.001	0.0007	1.4331	0.1554	-0.0004	0.0023
# Districts	-0.0006	0.0009	-0.6335	0.5281	-0.0024	0.0012
# Users attended	0	0	-0.9954	0.3223	0	0
Test of highest-order unconditional interactions: Output variable → betweenness in information exchange network						
Variables	Change in R^2	F	df1	df2	p	
$X \times W$	0.0003	0.0892	1	87	0.766	
$M_1 \times W$	0.0065	1.8519	1	87	0.1771	
$M_2 \times W$	0.0024	0.696	1	87	0.4064	
$M_3 \times W$	0.0072	2.0539	1	87	0.1554	
Direct and indirect conditional effects: Conditional direct effects of X on Y						
Levels of W	Effect	t	p	LLCI	ULCI	
3	0.0001	0.4839	0.6297	-0.0005	0.0008	
3.3333	0.0002	0.981	0.3293	-0.0002	0.0006	
3.8333	0.0003	0.9494	0.345	-0.0003	0.0009	
Conditional indirect effects: $X \rightarrow M_1 \rightarrow Y$						
Levels of W	Effect	Boot SE	Boot LLCI	Boot ULCI		
3	0	0.0001	-0.0002	0.0002		
3.3333	-0.0002	0.0002	-0.0005	0.0002		
3.8333	-0.0009	0.0009	-0.0022	0.0011		
Conditional indirect effects: $X \rightarrow M_2 \rightarrow Y$						
Levels of W	Effect	Boot SE	Boot LLCI	Boot ULCI		
3	0	0.0001	-0.0002	0.0001		
3.3333	0	0	-0.0001	0		
3.8333	0	0.0001	-0.0002	0.0002		

Conditional indirect effects: $X \rightarrow M_3 \rightarrow Y$				
Levels of W	Effect	Boot SE	Boot LLCI	Boot ULCI
3	0	0.0003	-0.0006	0.0006
3.3333	0.0006	0.0003	0.0001	0.0013
3.8333	0.0018	0.0013	-0.0003	0.0045

Abbreviations: LLCI, lower limit confidence interval; ULCI, upper limit confidence interval.

4.3 | Hypothesis 3

This model showed a high global adjustment ($R^2 = 0.931$; $F = 71.130$; $p < 0.0001$) (Table 5). When reviewing the interactive effect generated by the independent and moderating variables on the mediating variables, a minimal moderating effect was observed. The summary of the regression models to determine the effects of X and W over the three mediating variables indicated that, in the case of the size of the personal network, the variance explained by the variables introduced in the regression equation gets reduced ($R^2 = 0.334$; $F = 6.441$; $p < 0.0001$); in the case of the ego-centered network density of the user referral network, the explained variance was even lower and the model failed to adjust ($R^2 = 0.113$; $F = 1.638$; $p < 0.162$), whereas, in the case of the broker mediator variable, as a whole, the variables explained only 20% of the variance of the said variable ($R^2 = 0.204$; $F = 3.295$; $p < 0.01$).

The most interesting outcomes were observed upon an assessment of the direct and indirect conditional effects. The direct conditional effect of X over Y for different levels of W showed that the greatest effect ($t = 3.147$; $p < 0.0023$) occurred at an intermediate-high level of the moderating variable ($W = 3.5$) instead of at the maximum level ($W = 4$), as was appreciated in the preceding models. Upon observation of indirect conditional effects, the only notable interactive effect was found in the $X \rightarrow M_1 \rightarrow Y$ ratio, which showed a progressive increase in the effect, until reaching 0.0019 (Boot $SE = 0.0008$), as the moderating variable increased to values close to the maximum possible ($W = 3.8$). These outcomes provided partial support to the third hypothesis by identifying an insubstantial impact of the moderating and mediating variables on the relationship between X and Y .

4.4 | Hypothesis 4

Given that the moderation effects between the independent and the different mediating variables were identical to those described in the previous model, we will focus on exploring the direct and indirect conditional effects of X over Y . Table 6 shows the results of the model including the interactive effects between all variables to predict the betweenness of implementers in the user referral network.

The model adequately adjusted and explained 50% of the variance of the dependent variable ($R^2 = 0.511$; $F = 5.512$; $p < 0.0001$). The direct conditional effect of X over Y indicated a considerable increase in the moderating effect ($t = 2.4965$; $p < 0.0154$) generated by the sense of belonging at high levels of this variable ($W = 3.8$). When the indirect conditional effects of $X \rightarrow M_1 \rightarrow Y$ were observed, a similar phenomenon was noticed and, although in an insubstantial manner, the moderating variable at its highest level ($W = 3.8$) produced an effect of small magnitude in the relationship between the indicated variables (Effect = 0.0009; Boot $SE = 0.0010$). On its part, the density effect was not moderated by W at any level, while the indirect conditional effect $X \rightarrow M_3 \rightarrow Y$ was minimally influenced by the moderating effect of the sense of belonging (Effect = 0.0010; Boot $SE = 0.0013$), an effect that, in this case, was accentuated at moderate levels of this variable ($W = 3.06$). In the face of such outcomes, we can claim that the fourth hypothesis has partial support.

TABLE 5 Regression coefficients of the moderated mediation model to test Hypothesis 3

Output variable → degree centrality in the user referral network						
Model summary ($R = 0.964$; $R^2 = 0.931$; $MSE = 0.004$; $F = 71.130$; $df1 = 11$; $df2 = 58$; $p < 0.0001$)						
Variables	Coeff.	SE	t	p	LLCI	ULCI
Constant	0.0573	0.0452	1.2691	0.2095	-0.0331	0.1477
Seniority (X)	0.0014	0.0027	0.5225	0.6033	-0.004	0.0069
Ego-Network Size (M_1)	-0.0018	0.0226	-0.0792	0.9372	-0.047	0.0435
Ego-Network Density (M_2)	-0.0006	0.0016	-0.4044	0.6874	-0.0038	0.0025
Ego-Network Brokerage (M_3)	0.0071	0.0057	1.2422	0.2192	-0.0043	0.0185
Membership (W)	-0.0151	0.0132	-1.1475	0.2559	-0.0416	0.0113
$X \times W$	-0.0002	0.0008	-0.2685	0.7893	-0.0017	0.0013
$M_1 \times W$	0.0055	0.0063	0.8742	0.3856	-0.0071	0.0181
$M_2 \times W$	0.0004	0.0005	0.8001	0.4269	-0.0006	0.0013
$M_3 \times W$	-0.0018	0.0015	-1.202	0.2343	-0.0049	0.0012
# Districts	0.0005	0.0009	0.5604	0.5774	-0.0012	0.0022
# Users attended	0	0	-0.7564	0.4525	0	0
Test of highest-order unconditional interactions: Output variable → Degree centrality in the user referral network						
Variables	Change in R^2	F	df1	df2	p	
$X \times W$	0.0001	0.0721	1	58	0.7893	
$M_1 \times W$	0.0009	0.7643	1	58	0.3856	
$M_2 \times W$	0.0008	0.6402	1	58	0.4269	
$M_3 \times W$	0.0017	1.4448	1	58	0.2343	
Direct and indirect conditional effects: Conditional direct effects of X on Y						
Levels of W	Effect	t	p	LLCI	ULCI	
3.06	0.0008	0.0005	1.768	0.0823	-0.0001	
3.5	0.0007	0.0002	3.1473	0.0026	0.0003	
3.8333	0.0006	0.0003	2.2471	0.0285	0.0001	
Conditional indirect effects: $X \rightarrow M_1 \rightarrow Y$						
Levels of W	Effect	Boot SE	Boot LLCI	Boot ULCI		
3.06	0.0014	0.0011	-0.0011	0.0034		
3.5	0.0017	0.0006	0.0005	0.0029		
3.8333	0.0019	0.0008	0.0006	0.0036		
Conditional indirect effects: $X \rightarrow M_2 \rightarrow Y$						
Levels of W	Effect	Boot SE	Boot LLCI	Boot ULCI		
3.06	0	0.0002	-0.0002	0.0006		
3.5	0.0001	0.0001	-0.0001	0.0004		
3.8333	0.0002	0.0002	0	0.0006		

Conditional indirect effects: $X \rightarrow M_3 \rightarrow Y$				
Levels of W	Effect	Boot SE	Boot LLCI	Boot ULCI
3.06	0.0005	0.0007	-0.0011	0.0019
3.5	0.0002	0.0003	-0.0002	0.001
3.8333	0	0.0004	-0.0005	0.0011

Abbreviations: LLCI, lower limit confidence interval; ULCI, upper limit confidence interval.

5 | DISCUSSION

Program implementation is a critical stage of the intervention cycle, and evidence shows that programs that include systems to assess the application process are more effective (Derzon et al., 2005; Durlak & DuPre, 2008). Implementers are responsible for transferring program contents to beneficiaries, and the success of the intervention largely hinges on them, given the fact that they are in charge of adapting the activities to the users and to the contexts where the programs are carried out (Berkel et al., 2011; Dariotis et al., 2008). Professionals fulfill an important mission as intervention facilitators, developing a systemic vision that encompasses their own perspectives as well as those of beneficiaries, the community at large, and program managers (Greenhalgh et al., 2004). The relational setting that involves the application of a program, namely, the different types of relationships that occur between implementers, is a salient factor in the implementation process, which impacts effectiveness (Kierkegaard et al., 2014). Examining the factors that affect the connectivity of professionals in information exchange and user referral networks is relevant for understanding and strengthening the implementation stage (Gittell et al., 2020; Palinkas et al., 2018; Valente et al., 2015; Yousefi-Nooraie et al., 2019).

This study shows that the timeframe for which the implementers have been working in the program and the sense of belonging that they experience toward the team of professionals are important factors that account for the centrality and betweenness positions of professionals in information exchange and user referral networks. This implies that both spending more time on the management of the program and feeling like a member of the group of implementers facilitate the exchange of data and the referral of users among professionals. The results suggest that some structural indicators of the focal (i.e., egocentric) networks of each implementer act as mediating variables between the seniority and the central positioning of the stakeholders in the two aforementioned networks. This finding shows that the immediate relational context that every single professional builds within the program's framework notably influences the position that the professional takes within the broader network of the team of implementers. Consequently, the relational behavior of each professional contributes to the structure of the entire network of implementers, thus showing the individual impact on the configuration of the whole implementation system. Therefore, there is a connection between the micro (individual) and macro (network of implementers) levels that demonstrates the need to study both levels altogether when the implementation process is evaluated from a relational viewpoint.

However, not all the parameters of the ego-centered network exert the same effect on the connectivity of professionals. The size of the egocentric network and the broker indicator are the ones that produce the greatest mediating effect between seniority and the level of degree and betweenness of professionals. This suggests that what is truly outstanding is for professionals to maintain a high number of contacts in their egocentric network and for such contacts to be free of too many connections to each other, something that provides the ego with the ability to model the structure of its ego-centered network and thus adapt it to its own needs. Conversely, the cohesion of the egocentric network is an irrelevant factor when it comes to influencing the position of implementers in the information exchange networks. This means that to improve

TABLE 6 Regression coefficients of the moderated mediation model to test Hypothesis 4

Output variable → betweenness in the user referral network						
Model summary ($R = 0.714$; $R^2 = 0.511$; $MSE = 0.001$; $F = 5.512$; $df1 = 11$; $df2 = 58$; $p < 0.0001$)						
Variables	Coeff.	SE	t	p	LLCI	ULCI
Constant	0.0982	0.0725	1.3543	0.1809	-0.0469	0.2433
Seniority (X)	-0.0047	0.0044	-1.0704	0.2889	-0.0134	0.0041
Ego-Network Size (M_1)	-0.0412	0.0363	-1.1362	0.2605	-0.1139	0.0314
Ego-Network Density (M_2)	0.0025	0.0025	0.9699	0.3361	-0.0026	0.0075
Ego-Network Brokerage (M_3)	0.0167	0.0091	1.8318	0.0721	-0.0016	0.035
Membership (W)	-0.0306	0.0212	-1.4451	0.1538	-0.0731	0.0118
$X \times W$	0.0015	0.0012	1.2509	0.216	-0.0009	0.0039
$M_1 \times W$	0.0133	0.0101	1.3137	0.1941	-0.007	0.0335
$M_2 \times W$	-0.0008	0.0007	-1.05	0.2981	-0.0023	0.0007
$M_3 \times W$	-0.0045	0.0025	-1.8258	0.073	-0.0095	0.0004
# Districts	0.0001	0.0014	0.0433	0.9656	-0.0027	0.0028
# Users attended	0	0	-1.3587	0.1795	0	0
Test of highest-order unconditional interactions: Output variable → betweenness in the user referral network						
Variables	Change in R^2	F	df1	df2	p	
$X \times W$	0.0132	1.5647	1	58	0.216	
$M_1 \times W$	0.0145	1.7258	1	58	0.1941	
$M_2 \times W$	0.0093	1.1026	1	58	0.2981	
$M_3 \times W$	0.0281	3.3337	1	58	0.073	
Direct and indirect conditional effects: Conditional direct effects of X on Y						
Levels of W	Effect	t	p	LLCI	ULCI	
3.06	0	-0.0376	0.9701	-0.0015	0.0014	
3.5	0.0006	1.7676	0.0824	-0.0001	0.0014	
3.8333	0.0011	2.4965	0.0154	0.0002	0.0021	
Conditional indirect effects: $X \rightarrow M_1 \rightarrow Y$						
Levels of W	Effect	Boot SE	Boot LLCI	Boot ULCI		
3.06	-0.0001	0.0009	-0.0012	0.0024		
3.5	0.0005	0.0005	-0.0008	0.0014		
3.8333	0.0009	0.001	-0.0018	0.0023		
Conditional indirect effects: $X \rightarrow M_2 \rightarrow Y$						
Levels of W	Effect	Boot SE	Boot LLCI	Boot ULCI		
3.06	0	0.0001	-0.0003	0.0002		
3.5	-0.0001	0.0001	-0.0002	0.0001		
3.8333	-0.0002	0.0002	-0.0005	0.0003		

Conditional indirect effects: $X \rightarrow M_3 \rightarrow Y$				
Levels of W	Effect	Boot SE	Boot LLCI	Boot ULCI
3.06	0.001	0.0014	-0.0027	0.0025
3.5	0.0003	0.0005	-0.0003	0.0018
3.8333	-0.0002	0.0009	-0.001	0.0027

the implementation of programs, it is more effective for professionals to have a wide network of contacts, rather than for such network to be too dense, and it is positive for professionals to have the capacity to act as bridges between the stakeholders who are part of their egocentric network, which is a phenomenon that allows them to capitalize on the potential offered by the structural holes in their local network of contacts (Burt, 1992).

The interplay between individual, group, and organizational dynamics that takes place during the program implementation stage enables analysis of how individuals, through their actions—and interactions—influence the teams and the organizational performance. The decision regarding what level analysis should be evaluated depends on the research objectives. Some proposals suggesting that when the dependent variable under study is quantitative and involves multiple behaviors a practical option is applied dyadic and egocentric analyses. However, when the phenomenon under study is related to understanding the way in which organizational structure determines individual behavior, a valid, but more complex option is to conduct a whole-network analysis (i.e., Mizruchi & Marquis, 2006, p. 207). In case of organizations implementing intervention programs, when researchers are interested in identifying contagion or social influence processes (e.g., regarding innovation adoption of evidence-based clinical practices among program implementers), the best option could be designing a dyadic or an egocentric-level network analysis. However, when the focus is on identifying how organizational structural dynamics is affecting program effectiveness (e.g., by evaluating how network centralization and cohesiveness impact on program capacity to reach program users), a whole-network analysis may be a suitable option.

Another remarkable finding is the importance of seniority in the job post as a factor that determines both the size of the egocentric network and the brokerage in the focal network and in the entire network. Professionals with more experience in the program become information resources and tend to receive more requests for information, a factor that elevates degree centrality in the whole network and increases the size of the focal network. However, beyond this, being active in information exchange networks and maintaining direct contact with many professionals give them power, prestige, and the capacity to influence the way other professionals apply the program (Wensing et al., 2010). Intervention managers must ensure the continuity of professionals within the program to reduce staff turnover. Although the assessed program has been applied on a continuous basis as of 2013, only 25% of professionals have been working in the program for more than 24 months. This figure reflects a high staff turnover and constitutes an important barrier against guaranteeing the success and continuity of the intervention. The review carried out by Buchan (2010) shows that staff turnover in organizations that provide health services produces harmful effects both on the quality of service and on the organization's response capacity. In relation to the quality of the service, turnover affects the morale of workers who remain in the organization, produces a leak of knowledge, and negatively affects the level of fidelity with which the program is applied (Woltmann & Whitley, 2007). At the organizational level, turnover generates significant economic costs associated with the recruitment, induction, and training of new professionals who join the program (Buchan, 2010).

To reduce staff turnover and, at the same time, increase professionals' sense of belonging to the team and program goals, managers must implement strategies to ramp up staff motivation, develop empowerment with regard to their functions, and activate a feedback and monitoring system that ensures the involvement of professionals in the implementation stage (Durlak & DuPre, 2008; Wandersman et al., 2008). Along these lines, Cross

and Wyman (2006) describe how, by heightening the satisfaction and motivation of health professionals, it is possible to retain staff, reduce turnover rates, and, in parallel, enhance the sense of belonging to the organization. In conclusion, intervention managers should have the longest working professionals in the program and conceive them as key stakeholders toward adopting evidence-based intervention innovations and practices.

6 | LIMITATIONS

This study is based on data collected in three different regions, which, in turn, depend on different regional administrations. Because of this, each institution may have its own regulatory frameworks that may be influencing the way the program is managed, besides indirectly affecting the implementation process. On the contrary, although the three departments are based in the same macro-region, there are notable cultural differences between the various regions that can affect the supply of services. At the methodological level, regression models have shown partial support for the hypothesis proposed, and the size of the mediating and moderating effect of the variables analyzed is small. This indicates that other types of exogenous or latent variables, not examined in this study, be identified that may be affecting the level of connectivity of implementers in the information exchange and user referral networks. Lastly, this study only examines the implementation in 3 out of the 32 departments in which the program is executed. To have a global vision of the implementation process at the state level, it is necessary to increase the number of case studies in different departments that reflect the ethnic and cultural diversity of Colombia, including inland areas, the Amazon, and the Pacific region.

ACKNOWLEDGMENTS

We are indebted to Ilse C. Villamil, Alicia Uribe, María Angélica Aleán, Lisey Mendoza, Linda Pérez, and Valery Arrieta for their support with data collection in Córdoba and Bolívar. The funding for this study was received from the following projects: "Structural evaluation of the implementation of the Program of Psychosocial Attention to Victims of the conflict in Colombia (PAPSIVI)." Funding entity: Research Center for Development and Innovation at Universidad Pontificia Bolivariana (Montería). Project reference: 203-01/17/G-003 (PI: Prof. Ramos-Vidal). "Comparative analysis of the interprofessional teams that implement the psychosocial care and comprehensive health program for victims of the conflict (PAPSIVI) in the departments of Bolívar and Córdoba (Colombia)." Funding entity: Universidad Tecnológica de Bolívar. Project reference: 23011398 (PI: Prof. Domínguez de la Ossa).

CONFLICT OF INTERESTS

The authors declare that there are no conflict of interests.

PEER REVIEW

The peer review history for this article is available at <https://publons.com/publon/10.1002/jcop.22634>

DATA AVAILABILITY STATEMENT

The data of this study corresponding to the Department of Cordoba are available in the OPEN ICPS repository in the following link: <https://www.openicpsr.org/openicpsr/project/115230/version/V1/view;sessionId=F709F652E6C5EE7B29779B9C3CF319B0>

REFERENCE OF THE DATA SET

Ramos-Vidal, Ignacio. Structural evaluation of the implementation of the Psychosocial Intervention Program for Victims of the armed conflict in Colombia (PAPSIVI). Ann Arbor, MI: Interuniversity Consortium for Political and Social Research [distributor], 2019-10-30. <https://doi.org/10.3886/E115230V1>

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How to cite this article: Ramos-Vidal, I., Palacio, J., Domínguez de la Ossa, E., & Wehdking, I. (2021). Which factors explain information exchange and user referral among program implementers? *Journal of Community Psychology*, 1–23. <https://doi.org/10.1002/jcop.22634>