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Factors associated with interprofessional collaboration in Primary Health Care: a multilevel analysis

Fatores associados à colaboração interprofissional na Atenção Primária à Saúde: uma análise multinível

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Abstract *Working with an interprofessional focus is increasingly necessary, in view of the growing complexity of the population's health needs. This study aims to assess interprofessional collaboration and the teamwork climate in primary health care (PHC) and determine whether there is a relationship between these two variables. The AITCS-II instrument was used to measure interprofessional collaboration, while to diagnose teamwork climate, the ECTE instrument was used, a version adapted to the SUS context of the Teamwork Climate Inventory instrument. These two instruments were applied online together with a questionnaire for the sociodemographic characterization of the 544 participants, who belonged to 97 Family Health Strategy (FHS) teams in a Brazilian municipality. The obtained data were submitted to a multilevel analysis. A positive correlation was observed between interprofessional collaboration and three of the four teamwork climate factors. The better the work climate, the better the interprofessional collaboration in the corresponding team, and this characteristic stands out in relation to other individual analyzed characteristics.*

Key words *Collaborative Working Environment, Primary Health Care, Family Health Strategy, Interprofessional Education*

Resumo *Trabalhar com foco interprofissional é cada vez mais necessário, tendo em vista a crescente complexidade das necessidades de saúde da população. Este estudo tem como objetivo avaliar a colaboração interprofissional e o clima de trabalho em equipe na atenção primária à saúde (APS) e verificar possível relação entre estas duas variáveis. Para mensurar a colaboração interprofissional foi utilizado o instrumento AITCS-II, enquanto para o diagnóstico do clima de trabalho em equipe foi utilizado o instrumento ECTE, versão adaptada para o contexto SUS do instrumento Teamwork Climate Inventory. Esses dois instrumentos foram aplicados on-line juntamente com um questionário para caracterização sociodemográfica dos 544 participantes, pertencentes a 97 equipes da Estratégia Saúde da Família (ESF) de um município brasileiro. Os dados obtidos foram submetidos a uma análise multinível. Foi observada uma correlação positiva entre a colaboração interprofissional e três dos quatro fatores do clima de trabalho em equipe. Quanto melhor o clima de trabalho, melhor a colaboração interprofissional na equipe correspondente, e essa característica se destaca em relação às demais características individuais analisadas.*

Palavras-chave *Local de Trabalho, Atenção Primária à Saúde, Estratégia Saúde da Família, Educação Interprofissional*

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Introduction

Professionals from different centers of knowledge, working from an interprofessional perspective, increase the quality of health services provided to the population. Thus, the skills of team members, the sharing and management of cases optimize health practices and productivity in the work environment, with a consequent improvement in results and in the relationship with patient safety[1]. The reorganization of the work process at the Primary Health Care (PHC) level is based on teamwork, with the aim of offering the care that users need. In this sense, the medical-centered health care has been replaced by qualified multiprofessional care, which consists of different types of knowledge, capable of offering a broad scope of interventions to meet the population's health needs[2].

Interprofessional teamwork can be defined as the joint work of two or more professionals to achieve a common goal. Behavioral aspects such as coordination, communication, accountability and sharing of ideas are included in this work process. In comparison interprofessional teamwork is less integrated than interprofessional collaboration[3]. Other author defined, interprofessional collaboration as a partnership between a team of health professionals and their patients in a participatory, collaborative and coordinated approach to achieve shared decision-making regarding health care[4]. This can occur within a small team, between teams from the same service, or in the networking involving users and the community[5].

Teamwork climate was defined by Anderson and West[6] as a shared perception about philosophy, politics, values, and beliefs. The same authors created an instrument able to evaluate the work climate in health teams, the Team Climate Inventory, consisting of four factors, which are team objectives, participation safety, task orientation and support for innovation[6].

There is evidence associating better teamwork climate values with better results in health care quality[7-11] and greater user satisfaction[9,12] in addition to providing strategic subsidies to support the development of collaboration within and between PHC teams[12]. In view of the importance of the theme for Primary Health Care and the scarcity of studies based on the Brazilian reality, the aim of this study was to identify the factors associated with individual interprofessional collaboration in Primary Health Care health teams.

Methods

Study design

The present is a cross-sectional analytical study reported according to the STrengthening the Reporting of OBservational studies in Epidemiology (STROBE)[13] statement. It was approved by the Human Research Ethics Committee (CEP) of Federal University of Mato Grosso do Sul (UFMS) under the number 11920919.4.0000.0021.

Setting, sample and participants

The research was carried out in Campo Grande, capital of the state of Mato Grosso do Sul (Brazil), municipality that had 146 Family Health Strategy (FHS) teams. The collection data was performed, from 2019 to 2020, being completed in the pre-pandemic period of COVID-19. For the purpose of this study, we considered as inclusion criteria:

1) complete teams according to the Ministry of Health definition, which recommends that the team should consist of a doctor, a nurse and a nursing assistant or technician[14], in addition to community health agents and;

2) in addition to the aforementioned professional categories, when available, dental surgeons and dental assistants or technicians were also invited to participate in the study, as recommended by Agreli *et al.*[15].

Only 125 out of 146 teams met the two established inclusion criteria and were considered eligible for inclusion in this study. In view of the singularity of the studied municipality, where most of the FHS units have professional social workers and pharmacists, these were also included in the sample.

For the sample calculation, a 95% confidence interval and a 0.5% margin of error were taken into account, establishing a sample of 97 health teams (N=97). The participating teams were randomly stratified, respecting the geographic distribution and representativeness of each of the 7 health districts in this municipality (Anhanduizinho, Prosa, Segredo, Lagoa, Bandeira, Centro and Imbirussu), aiming at portraying a scenario as close as possible to reality. The 97 health teams drawn were composed of a total of 1.195 professionals.

To assess the team's participation, the criterion of a response rate of at least 40% was adopted in relation to the total number of professionals

of the corresponding team. This strategy was also adopted by the authors of the team climate instrument[14].

Data source and instruments used in data collection process

Data collection was performed online using the Google Forms® platform. First, contact was made by email and telephone, with the administrative managers of each participating health unit, to present the study proposal and request the submission of this information, along with the link to the online form, for the professional members of the selected teams. The participants' doubts related to the study were resolved by telephone contact and e-mail.

For health professionals' characterization, the following information were collected: age, gender, education, specialization or continuing education course in Primary Health Care, time working in the team and time working in the institution.

To measure interprofessional collaboration, the instrument Assessment of Interprofessional Team Collaboration Scale-II (AITCS-II)[16] validated in Brazil by Bispo and Rossitt[17] was applied. The AITCS-II consists of 3 dimensions, namely: partnership (8 items), cooperation (8 items) and coordination (7 items). Each item uses a 5-point Likert scale (ranging from 1 = never to 5 = always), and the higher the achieved value, the better the interprofessional collaboration of the respective team.

To assess teamwork climate, the Teamwork Climate Scale (ECTE) instrument[18], an adapted version, translated and validated into Portuguese from the Team Climate Inventory (TCI)[6], was applied. The instrument consists of four factors: participation (frequency of interaction between team members, and how much they share ideas and information), support for new ideas (encouragement and practical support for new ideas), team objectives (information about the clarity and sharing of team objectives), task orientation (team commitment to the achievement of high standards of quality in the offered service)[6].

Two of these factors use a Likert scale ranging from 1 to 5: participation (12 items) and support for new ideas (8 items). The other two factors use a Likert scale ranging from 1 to 7: team objectives (11 items) and task orientation (7 items). The higher the informed value, the better the work climate of the respective team.

Variables

The analyzed variables are presented in Chart 1, as well as how the qualitative and quantitative variables were treated in the analysis.

Data analysis

Descriptive analyses of all variables with absolute and relative frequencies were performed. Simple regression models were constructed for each independent variable and the outcome "individual interprofessional collaboration", followed by a multilevel multiple logistic regression analysis. All variables with $p<0.20$ in the individual analyses were tested in the multiple model, and those with $p<0.05$ remained after adjustments. Based on the regression models, the raw and adjusted odds ratios were estimated, with their respective 95% confidence intervals. The fit of the models was evaluated by the QIC (quasi-likelihood criterion). The analyses were performed using the programs R[19] and SAS[20], with a significance level of 5%.

Results

Data from 575 professionals belonging to 97 Primary Care Health Teams were analyzed, ranging from three to 13 evaluated professionals per team. Table 1 depicts the descriptive analyses of the team variables.

Table 2 shows that 85.2% of the sample was female, 44.7% had a level of schooling up to high school, 55.3% had higher education, and 28.5% had postgraduate degrees. Also, 13.2% of the sample had a specialization degree in Public Health. When analyzing the variables individually, a significant association was observed with interprofessional collaboration for the following variables: professional's age, time on the professional team, as well as for all teams' variables ($p<0.05$).

When the professionals' individual variables were analyzed together in the multiple analysis, only time working with the team remained in the model (Table 3).

Figure 1 shows there was a higher proportion of professionals with a higher rate of collaboration among those with more time working with the team (from three years), with $p<0.05$. However, when the team variables were included in the multiple model, this individual professional variable did not remain in the final model. It

Chart 1. Outcome and independent variables used in the study.

Variables	Definition	Presentation
Ourcome		
Individual interprofessional collaboration	Instrument used to measure the individual assessment of interprofessional collaboration. It contains three dimensions and a total of 23 items. Each item uses a 5-point Likert scale (ranging from 1 = never to 5 = always). The interprofessional collaboration is then calculated by adding all the items and dividing by 23. The results will vary from 1 to 5, and the higher the achieved value, the better the interprofessional collaboration of the respective team.	Dichotomized by the sample median: <3.78 or ≥3.78
Individual independent variables		
Sex	Gender chosen by the interviewee	Male or Female
Age	Age in complete years on the day the questionnaire was completed	Dichotomized by the sample median: <39 or ≥39
Education	Higher education level	Up to high school University education Postgraduate studies
Specialization in public health	*Lato sensu* postgraduate level in Public Health	Yes, No or Not applicable
Time in the profession	Time working in the profession	Dichotomized by the sample median: <10 years or ≥10 years
Time in the institution	Length of time working at municipal health department	Dichotomized by the sample median: <7 years or ≥7 years
Time in the team	Time working in the team	Dichotomized by the sample median: <3 years or ≥3 years
Contextual independent variables (analysis by health team)		
Team participation	This factor has 12 items, and each item can be scored on a Likert scale of 1 5. scale ranging from 1 to 5. The "Team participation" factor is then calculated by adding all the items together and dividing by 12. The results will range from 1 a 5, and the higher the achieved value, the better Team participation according to the respondent.	Dichotomized by the sample median: <3.89 or ≥3.89
Support for new ideas	This factor has 8 items, and each item can score on a Likert scale of 1 5. scale ranging from 1 to 5. The "Support for new ideas" factor is then calculated by adding all items together and dividing by 8. Results will vary from 1 to 5, and the higher the achieved value, the better Support for new ideas according to the respondent.	Dichotomized by the sample median: <3.84 or ≥3.84
Team Objectives	This factor has 11 items, and each item can score on a Likert scale of 1 5. scale ranging from 1 to 7. The "Team Objectives" factor is then calculated by adding all the items together and dividing by 11. The results will range from 1 to 7, and the higher the achieved value, the better Team Objectives according to the respondent.	Dichotomized by the sample median: <5.79 or ≥5.79
Task orientation	This factor has 7 items, and each item can be scored on a Likert scale of 1 5. scale ranging from 1 to 7. The "Task orientation" factor is then calculated by adding all the items together and dividing by 7. The results will vary by 1 a 7, and the higher the achieved value, the better Task orientation according to the respondent.	Dichotomized by the sample median: <5.51 or ≥5.51

*Numerical variables were dichotomized by the median.

Source: Authors.

was then observed in the final model that team professionals with a higher participation rate (OR=2.63; CI: 1.56-4.44), greater clarity regarding the team objectives (OR=1.62; CI: 1, 07-2.44)

and greater clarity regarding the roles played in the team (OR=1.77; CI: 1.07-2.93) were more likely to show a higher rate of professional collaboration (p<0.05).

Table 1. Descriptive analysis of the variables related to the Primary Care Health Teams (n=97).

Variable	Category	Frequency (%)
Team participation	<3.89	48 (49.5)
	≥3.89	49 (50.5)
Support for new ideas	<3.84	50 (51.5)
	≥3.84	47 (48.5)
Team objectives	<5.79	48 (49.5)
	≥5.79	49 (50.5)
Task orientation	<5.51	47 (48.5)
	≥5.51	50 (51.5)

Source: Authors.

Discussion

The results of the present study demonstrate that professionals with a higher rate of interprofessional collaboration are those who work in teams with a higher rate of participation, greater clarity regarding the team objectives and the roles played in them. These findings emphasize the importance of creating appropriate spaces to encourage improvement in the work climate by the management, considering its importance for the individual performance of health professionals. It is also worth emphasizing the merit of frequently

Table 2. Crude (individual) analyses between independent variables and individual interprofessional collaboration in Primary Health Care professionals (n=575).

Variable	Category	n (%)	Outcome		Crude OR (95%CI)	p-value
			Minor	*Major		
			n (%)	n (%)		
Individual						
Sex	Male	85 (14.8)	34 (40.0)	51 (60.0)	1.36 (0.89-2.11)	0.1565
	Female	490 (85.2)	237 (48.4)	253 (51.6)	Ref	
Age (years)	<39	279 (48.5)	145 (52.0)	134 (48.0)	Ref	
	≥39	296 (51.5)	126 (42.6)	170 (57.4)	1.40 (1.01-1.94)	0.0413
Level of schooling	Up to high school	257 (44.7)	128 (49.8)	129 (50.2)	Ref	
	Higher education	154 (26.8)	72 (46.8)	72 (53.2)	1.22 (0.79-1.88)	0.3689
	Postgraduate degree	164 (28.5)	71 (43.3)	93 (56.7)	1.32 (0.92-1.90)	0.1261
Specialization in Public Health	Yes	76 (13.2)	31 (40.8)	45 (59.2)	1.17 (0.73-1.87)	0.5182
	No	242 (42.1)	112 (46.3)	130 (53.7)	Ref	
	Not applicable	257 (44.7)	128 (49.8)	129 (50.2)	0.82 (0.57-1.16)	0.2626
Time of professional experience (years)	<10 years	274 (47.6)	140 (51.1)	134 (48.9)	Ref	
	≥10 years	301 (52.4)	131 (43.5)	170 (56.5)	1.23 (0.90-1.68)	0.1846
Time working at the institution (years)	<7 years	260 (45.2)	128 (49.2)	132 (50.8)	Ref	
	≥7 years	315 (54.8)	143 (45.4)	172 (54.6)	1.10 (0.78-1.57)	0.5730
Time working with the team (years)	<3 years	279 (48.5)	146 (52.3)	133 (47.7)	Ref	
	≥3 years	296 (51.5)	125 (42.2)	171 (57.8)	1.47 (1.05-2.04)	0.0235
Teams						
Team Participation	<3.89	276 (48.0)	183 (66.3)	93 (33.7)	Ref	
	≥3.89	299 (52.0)	88 (29.4)	211 (70.6)	4.71 (3.24-6.85)	<0.0001
Support for new ideas	<3.84	286 (49.7)	181 (63.3)	105 (36.7)	Ref	
	≥3.84	289 (50.3)	90 (31.1)	199 (68.9)	3.75 (2.53-5.57)	<0.0001
Team objectives	<5.79	281 (48.9)	176 (62.6)	105 (37.4)	Ref	
	≥5.79	294 (51.1)	95 (32.3)	199 (67.7)	3.43 (2.30-5.12)	<0.0001
Task orientation	<5.51	283 (49.2)	184 (65.0)	99 (35.0)	Ref	
	≥5.51	292 (50.8)	87 (29.8)	205 (70.2)	4.34 (2.97-6.33)	<0.0001

*Outcome event (≥3,78). Ref: Reference category for independent variables. OR: Odds ratio. CI: Confidence interval.

Source: Authors.

Table 3. Multiple analyses for the outcome "greater individual interprofessional collaboration" in Primary Health Care professionals (n=575).

Variable	Category	Model 1 (Individual variables)		Final Model (Including the Teams' variables)	
		Adjusted OR (95%CI)	p-value	Adjusted OR (95%CI)	p-value
Individual					
Time working with the team(years)	<3	Ref		-	-
	≥3	1.47 (1.05-2.04)	0.0235		
Teams					
Team Participation	<3.89	-	-	Ref	
	≥3.89			2.63 (1.56-4.44)	0.0003
Team Objectives	<5.79	-	-	Ref	
	≥5.79			1.62 (1.07-2.44)	0.0215
Task Orientation	<5.51	-	-	Ref	
	≥5.51			1.77 (1.07-2.93)	0.0256
QIC (quasi-likelihood criterion)		795.00		706.00	

Ref: Reference category for independent variables. OR: Odds ratio. CI: Confidence interval. QIC (empty model) = 798.85.

Source: Authors.

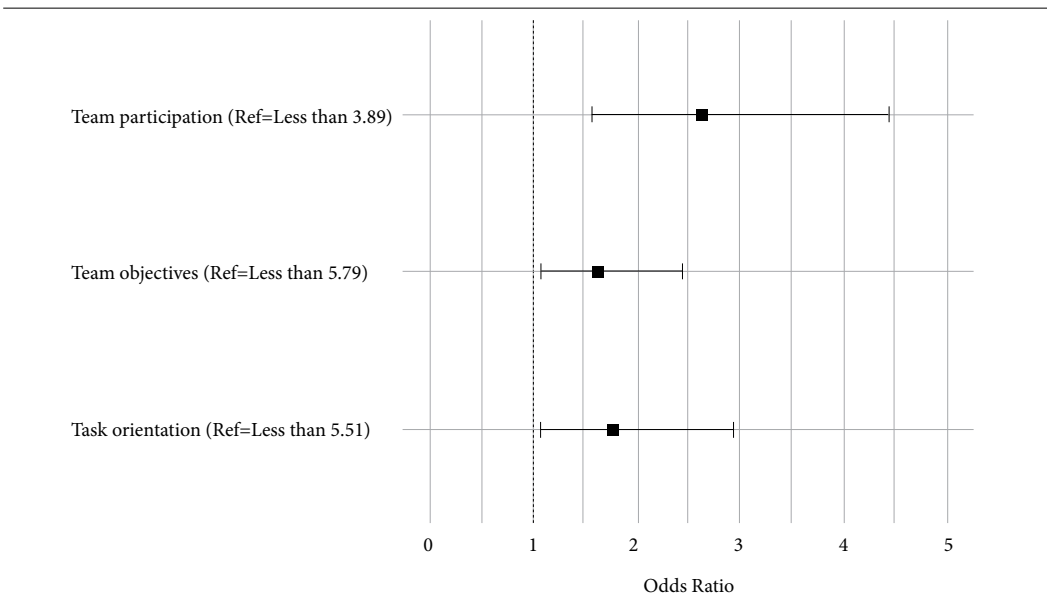

Figure 1. Odds ratio of independent variables for the outcome "greater individual interprofessional collaboration" in Primary Health Care professionals (n=575).

Source: Authors.

evaluating teamwork climate in health services, aiming at providing subsidies to promote actions intended to improve this aspect of interprofessional work and, consequently, promote a work environment that is more favorable to interprofessional collaboration.

Therefore, it is suggested that there is an association between interprofessional collaboration

and three of the four factors that comprise the climate for innovation theory, defended by Anderson and West[6], and the better the results regarding these factors, the better the results related to interprofessional collaboration. This association corroborates recent studies that have suggested a possible relationship between teamwork climate and interprofessional collaboration[15,21].

Moreover, it was possible to observe that professionals who had been working in a given team for a longer period of time were more prone to interprofessional collaboration than professionals who had worked for a shorter time in the team. This finding is consistent with the literature, which describes team stability as favorable to shared work and joint decision-making[22,23]. However, this study showed, at a second level of analysis, that when working in a team with a satisfactory teamwork climate, professionals are more prone to interprofessional collaboration, regardless of the time they have worked in this respective team.

This may be the result of dynamics of the teamwork climate, such as the quality of the relationship between workers, dialogical accessibility between superiors and subordinates and sharing decision-making[24]. These characteristics, intrinsic to the daily work in PHC and close to the relational field, may, in practice, have a greater impact on interprofessional collaboration profiles.

In this interface, at a global level, there were innovation policies in the interprofessional work process in the context of PHC, such as those integrated in Australia, Canada, USA, including three Canadian provinces (Alberta, Ontario and Quebec). Comparatively, evidence of impact on communication, relationships between professional groups, understanding of the roles of health professionals and the satisfaction of PHC workers with their work was identified. There were intrajurisdictional manifestations when incident to interjurisdictional ones, being related to local contextual factors, such as size, power dynamics, leadership, and physical environment of the practice[25]. This points to the need for adaptations in the implementation of interprofessional collaboration practices to the local reality, in unison with the profile/needs of the professionals and the services offered in the PHC, the demands of the community and the results to be achieved. Translating to the Brazilian reality, given the continental dimensions of the country, there is a significant challenge in this regard, given the different configurations with which the FHS/PHC can be presented in the territory.

It is also possible to say that even years after the onset of actions aimed at proposing a new guideline in the process of training new professionals, focused on comprehensive care and interprofessional work[26-28], no significant difference was identified between professionals with less time since graduation and the others in relation to the CI results. Therefore, from the health training perspective, in terms of the work process, it is worth reflecting that redirecting actions are still necessary, aiming to minimize these weaknesses and strengthen PHC, thus promoting quality care centered on the territory demands, based on an effective service.

Continuing education actions, such as postgraduate courses, have been subsidized by the Ministries of Health and Education since the mid-1990s[29]. Unlike permanent education actions, those do not offer the conditions for a true reflection on professional roles when facing the reality of health services[30]. The present study did not show any significant difference regarding CI results when comparing the results of professionals with or without specialization in public health or family health. This demonstrates that the challenge of transforming the work process and providing effective interprofessional work goes beyond the subsidy of continuing education actions, and that permanent and interprofessional education actions need to be constant in the routine of the health sector workers.

In this regard, it is known that, in the context of the Brazilian Multidisciplinary Residencies in Health (RMS), interprofessional education and collaboration are still considered incipient and in the process of effectiveness and development, respectively. Although these themes are explored, experienced, and contemplated in the curricular matrices, they are crossed by weaknesses inherent in health services and by the pedagogical misalignment of tutors and preceptors[31].

Considering this perspective, the results of the present study demonstrate training flaws in both the most recent training at the undergraduate level and in the *lato sensu* postgraduate level. Based on this fact, strategic curricular reorientations are suggested at these two levels of training, so that this topic can be considered longitudinally as the periods/modules progress.

This study had a cross-sectional design, that is, the variables were measured at a single moment in time, suggesting the data cannot infer cause and effect; additionally, the data cannot be generalized to all contexts of PHC, given that there are different PHC configurations, charac-

terized according to the local health system and the territory demands.

Hence, other studies, preferably with a mixed design, must be carried out aiming to better understand the possible associations between work climate, professional collaboration and other factors that may influence the results of these two dimensions of the health work process.

The findings of this study are relevant, as they provide support for health managers to adopt measures aimed at improving teamwork climate and, consequently, provide more collaborative health care and thus, higher quality health care with better results. Moreover, the results issue a warning regarding the training of new professionals and the actions aimed at the qualification of professionals that have already been trained, showing the need to expand the interprofessional education actions and the adaptation of the training process, aiming at training professionals and students to increasingly work according to the precepts of interprofessionality. To this end, it is necessary to encourage processes to implement a culture of interprofessionality, going beyond the limits of teaching (through intersectoral actions, for example), promoting the construction of a community of interprofessional practices[32].

Conclusion

It was concluded that there is an association between three of the four factors of teamwork climate and interprofessional collaboration, which are: team participation, team objectives and task orientation; so that the better the working climate, the better the interprofessional collaboration of the professionals in the corresponding team.

Collaborations

J Vasconcelos, MNS Higashijima, AD De Carli and LF Probst: conception and design of the research. J Vasconcelos, AS Souza, MNS Higashijima and AD De Carli: acquisition of data. J Vasconcelos, AD De Carli, MLM Santos, MV Costa, LF Probst and MNS Higashijima: drafting the article. J Vasconcelos, AD De Carli, MNS Higashijima, MV Costa, LF Probst, AS Souza, MLM Santos and JAM Silva: revision of the article. All authors read and approved the final manuscript.

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References

1. World Health Organization (WHO). *Framework for action on interprofessional education and collaborative practice*. Genebra: WHO; 2010.
2. Silva MC, Peduzzi M, Sangaleti CT, Silva DD, Agreli HF, West MA, Anderson NR. Cross-cultural adaptation and validation of the teamwork climate scale. *Rev Saude Publica* 2016; 50:52.
3. Reeves S, Xyrichis A, Zwarenstein M. Teamwork, collaboration, coordination, and networking: Why we need to distinguish between different types of interprofessional practice. *J Interprof Care* 2017; 32(1):1-3.
4. Orchard CA, Curran V, Kabene S. Creating a Culture for Interdisciplinary Collaborative Professional Practice. *Med Educ Online* 2005; 10(1):4387.
5. Peduzzi M, Agreli HLF, Silva JAM, Souza HS. Teamwork: revisiting the concept and its developments in inter-professional work. *Trab Educ Saude* 2020; 18(Supl. 1):e0024678.
6. Anderson NR, West MA. Measuring climate for work group innovation: development and validation of the team climate inventory. *J Organiz Behav* 1998; 19(3):235-258.
7. Beaulieu MD, Dragieva N, Del Grande C, Dawson J, Haggerty J, Barnsley J. The Team Climate Inventory as a Measure of Primary Care Teams' Processes: Validation of the French Version. *Healthcare Policy* 2014; 9(3):40-54.
8. Bower P. Team structure, team climate and the quality of care in primary care: an observational study. *Quality Safety Health Care* 2003; 12(4):273-279.
9. Campbell SM, Hann M, Hacker J, Burns C, Oliver D, Thapar A, Mead N, Safran DG, Roland MO. Identifying predictors of high quality care in English general practice: observational study. *BMJ* 2001; 323(7316):784.
10. Mundt MP, Agneessens F, Tuan WJ, Zakletskaia LI, Kamnetz SA, Gilchrist VJ. Primary care team communication networks, team climate, quality of care, and medical costs for patients with diabetes: A cross-sectional study. *Int J Nurs Stud* 2016; 58:1-11.
11. Poulton BC, West MA. The determinants of effectiveness in primary health care teams. *J Interprof Care* 1999; 13(1):7-18.
12. Proudfoot J, Jayasinghe UW, Holton C, Grimm J, Bubner T, Amoroso C, Beilby J, Harris MF. Team climate for innovation: what difference does it make in general practice? *Int J Quality Health Care* 2007; 19(3):164-169.
13. Elm EV, Altman DG, Egger M, Pocock SJ, Gøtzsche PC, Vandenbroucke JP. Strengthening the reporting of observational studies in epidemiology (STROBE) statement: guidelines for reporting observational studies. *BMJ* 2007; 335(7624):806-808.
14. Brasil. Portaria nº 2.436, de 21 de setembro de 2017. Aprova a Política Nacional de Atenção Básica (PNAB), estabelecendo a revisão de diretrizes para a organização da Atenção Básica, no âmbito do Sistema Único de Saúde (SUS). *Diário Oficial da União* 2017; 22 set.
15. Agreli HF, Peduzzi M, Bailey C. The relationship between team climate and interprofessional collaboration: Preliminary results of a mixed methods study. *J Interprof Care* 2017; 31(2):184-186.
16. Orchard C, Pederson LL, Read E, Mahler C, Laschinger H. Assessment of Interprofessional Team Collaboration Scale (AITCS). *J Contin Educ Health Prof* 2018; 38(1):11-18.
17. Bispo EP, Rossit RA. Processo de validação e adaptação transcultural do assessment of interprofessional team collaboration SCALE II (AITCS II). *JMPHC* 2018; 8(3):10-11.
18. Silva MC, Peduzzi M, Sangaleti CT, Silva DD, Agreli HF, West MA, Anderson NR. Cross-cultural adaptation and validation of the teamwork climate scale. *Rev Saude Publica* 2016; 50:52.
19. R Core Team. *R: A language and environment for statistical computing*. Vienna: R Foundation for Statistical Computing; 2021.
20. SAS Institute Inc. *SAS® Studio 3.8: User's Guide*. Cary: SAS Institute Inc.; 2021.
21. Kebe NNMK, Chiocchio F, Bamvita JM, Fleury MJ. Variables associated with interprofessional collaboration: The case of professionals working in Quebec local mental health service networks. J Interprof Care 2018; 33(1):76-84.
22. Pelled LH, Eisenhardt KM, Xin KR. Exploring the Black Box: An Analysis of Work Group Diversity, Conflict, and Performance. *Admin Sci Quarterly* 1999; 44(1):1.
23. Slotegraaf RJ, Atuahene-Gima K. Product Development Team Stability and New Product Advantage: The Role of Decision-Making Processes. *J Marketing* 2011; 75(1):96-108.
24. Kumra T, Hsu Y-J, Cheng TL, Marsteller JA, McGuire M, Cooper LA. The association between organizational cultural competence and teamwork climate in a network of primary care practices. *Health Care Manage Rev* 2020; 45(2):106-116.
25. Harris MF, Advocat J, Crabtree BF, Levesque J-F, Miller WL, Gunn JM, Hogg W, Scott CM, Chase SM, Halma L, Russell GM. Interprofessional teamwork innovations for primary health care practices and practitioners: evidence from a comparison of reform in three countries. *J Multidiscip Healthc* 2016; 9:35–46.
26. Feuerwerker L, Almeida M. Diretrizes curriculares e projetos pedagógicos: é tempo de ação! Rev Bras Enferm 2003; 56(4):351-352.
27. Furlan PG, Campos ID, Meneses KV, Ribeiro HM, Rodrigues LM. A formação profissional de terapeutas ocupacionais e o curso de graduação da Universidade de Brasília, Faculdade de Ceilândia. *Cad Terapia Ocup UFSCar* 2014; 22(1):109-119.
28. Furlanetto DLC; Bastos MM, Silva Junior JWS, Pinho DLM. Reflections on the conceptual basis of the National Curriculum Guidelines for the health degree courses. *Comun Cien Saude* 2014; 25(2):193-202.
29. Scherer MD, Oliveira CI, Carvalho WM, Costa MP. Cursos de especialização em Saúde da Família: o que muda no trabalho com a formação? *Interface (Botucatu)* 2016; 20(58):691-702.
30. Ribeiro ECO, Motta JIJ. Educação Permanente como estratégia na reorganização dos serviços de saúde. *Divulg Saude Debate* 1996; 12:39-44.

31. Flor TBM, Cirilo ET, Lima RRT, Sette-de-Souza PH, Noro LRA. Formação na Residência Multiprofissional em Atenção Básica: revisão sistemática da literatura. *Cien Saude Colet* 2022; 27(33):921-936.
32. Cantaert GR, Pype P, Valcke M, Lauwerier E. Interprofessional Identity in Health and Social Care: Analysis and Synthesis of the Assumptions and Conceptions in the Literature. *Int J Environ Res Public Health* 2022; 19(22):14799.

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