Patient safety culture: perspective of health and support workers

Cultura de segurança do paciente: perspectiva de trabalhadores da saúde e apoio

Cultura de seguridad del paciente: perspectiva de trabajadores de la salud y de apoyo

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Abstract

Objective: To analyze the culture of patient safety from the perspective of workers working directly or indirectly in the care of hospitalized patients.

Methods: Cross-sectional study of 2,634 hospital service workers from seven institutions in Rio Grande do Sul, Brazil. The Brazilian version of the Safety Attitudes Questionnaire was used. Descriptive and inferential analyzes were performed, considering scores ≥ 75 points as positive culture.

Results: A positive evaluation of the safety culture was evidenced in the Teamwork climate (median 75) and Job Satisfaction (median 90) domains. Physiotherapists, dentists and maintenance workers evaluated the safety culture positively ($p<0.05$). Psychologists, nutrition/dietetics professionals and security guards/doormen achieved higher percentages for negative culture ($p<0.05$).

Conclusion: The safety culture obtained predominantly negative scores, more expressive in the Perception of hospital management domain. When comparing the health and support categories, little variability was identified in scores of the instrument domains, although support professionals tended to score lower. Assessing the dimensions of the safety culture provides a situational diagnosis of the organization or work unit and can support management strategies aimed at improving the quality of patient care.

Resumo

Objetivo: Analisar a cultura de segurança do paciente na perspectiva dos trabalhadores que atuam direta ou indiretamente no cuidado ao paciente hospitalizado.

Métodos: Estudo transversal, com 2.634 trabalhadores do serviço hospitalar de sete instituições do Rio Grande do Sul, Brasil. Utilizou-se a versão brasileira do *Safety Attitudes Questionnaire.* Realizaram-se análises descritiva e inferencial, considerando cultura positiva escore ≥ 75 pontos.

Resultados: Evidenciou-se avaliação positiva da cultura de segurança nos domínios Clima de trabalho em equipe (mediana 75) e Satisfação no Trabalho (mediana 90). Os fisioterapeutas, dentistas e trabalhadores da manutenção avaliaram de forma positiva a cultura de segurança ($p<0,05$). Psicólogos, profissionais da nutrição/dietética e vigilantes/porteiros tiveram maiores percentuais para cultura negativa ($p<0,05$).

Conclusão: A cultura de segurança obteve escores predominantemente negativos, mais expressivos no domínio percepção da gerência do hospital. Quando comparadas as categorias da saúde e apoio, identificou-se pouca variabilidade nos escores dos domínios do instrumento. No entanto, os profissionais do apoio tenderam a pontuações mais baixas. Avaliar as dimensões da cultura de segurança fornece um diagnóstico situacional da organização ou unidade de trabalho e pode subsidiar estratégias gerenciais com vistas ao aprimoramento da qualidade da assistência prestada ao paciente.

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Resumen

Objetivo: Analizar la cultura de seguridad del paciente desde la perspectiva de los trabajadores que actúan directa o indirectamente en el cuidado al paciente hospitalizado.

Métodos: Estudio transversal con 2.634 trabajadores del servicio hospitalario de siete instituciones del estado de Rio Grande do Sul, Brasil. Se utilizó la versión brasileña del *Safety Attitudes Questionnaire*. Se realizó un análisis descriptivo e inferencial y se consideró como cultura positiva la puntuación ≥ 75.

Resultados: Se observó una evaluación positiva de la cultura de seguridad en los dominios Clima de trabajo en equipo (mediana 75) y Satisfacción en el trabajo (mediana 90). Los fisioterapeutas, dentistas y trabajadores de mantenimiento evaluaron de forma positiva la cultura de seguridad ($p<0,05$). Los psicólogos, profesionales de nutrición/dietética y vigilantes/porteros tuvieron porcentajes mayores de cultura negativa ($p<0,05$).

Conclusión: La cultura de seguridad obtuvo puntuaciones predominantemente negativas, más significativas en el dominio Percepción de la gerencia del hospital. Al comparar las categorías de salud y de apoyo, se identificó poca variabilidad en las puntuaciones de los dominios del instrumento. Sin embargo, los profesionales de apoyo tuvieron una tendencia de puntajes más bajos. Evaluar las dimensiones de seguridad ofrece un diagnóstico situacional de la organización o unidad de trabajo y puede respaldar estrategias gerenciales con el fin de mejorar la calidad de la atención prestada al paciente.

Introduction

The promotion of safe care in health organizations is essential for the quality of care provided to patients. The lack of safety in the work environment can have a negative impact on the lives of professionals, generate social and financial burdens, destabilize work processes, and have negative publicity for those involved.[1]

Given the complex demands of health services, they are considered as high risk for incidents. The development of a safety culture is fundamental and requires the engagement of everyone.[1,2] Conceptually, it is understood as a "set of values, attitudes, skills and behaviors that determine the commitment to health and safety management by replacing guilt and punishment with the opportunity to learn from failures and improve health care".[2,3] The promotion of a fair culture favors effective communication, teamwork and the transmission of knowledge, contributing for successful care practices.

The assessment of the institutional safety culture results from the environment surrounding an organization and how it is perceived by workers. The characteristics of an organization and its pretensions can be identified, as well as the level of engagement of the organization's management to work with the strengths and weaknesses. The measurable components of the safety culture are the behaviors observed, the policies, practices, procedures and perceptions of professionals.[2,4] Research[1] conducted with 1,342 employees from 32 organizations indicated that safety requirements tend to be performed by employees in institutions with a positive culture, regardless of supervision from a professional. Such evidence demonstrates the importance of strengthening it on a daily basis.

One of the ways to measure the safety culture is through the Safety Attitudes Questionnaire (SAQ), translated and validated into the Portuguese language.[2] The SAQ has 41 questions arranged in six domains focused on the attitudes and perceptions of workers from different services and professional teams. The use of this instrument makes it possible to make comparisons.[2,5]

In this regard, health organizations have a growing concern with mapping the patient safety culture in order to guide decision making directed to the weak points identified. However, studies[4,6,7] have basically researched health professionals. Even though local microcultures exist in the same institution,[8] this theme permeates all areas. In other words, it involves all professionals in the area who directly or indirectly work in patient care, therefore, the focus of assessments with categories in the same area indicates a gap in knowledge aimed at diagnosing the safety culture from the perspective of other workers, i.e., those working in support services. In this context, the objective was to analyze the culture of patient safety from the perspective of workers working directly or indirectly in the care of hospitalized patients.

Methods

Cross-sectional study developed in seven small, medium and large hospital institutions located in the central region of Rio Grande do Sul, Brazil. The

population comprised all professional categories in health care (nurse, nursing assistant/technician, doctor, pharmacist, physiotherapist, nutritionist, psychologist, dentist) and support services (managers/directors, administrative, hygiene and cleaning, nutrition/dietetics, maintenance, security, doorman), regardless of the unit or sector of activity, totaling 4,040 workers. The minimum sample of participants was calculated based on an estimated percentage of 50% and a sample error of 1%, which resulted in 2,508 participants.

The inclusion criterion was having been working in the institution for at least 30 days, a period necessary to experience the safety culture of the organization.[9] Workers on sick leave or on leave for any reason during data collection were excluded. According to this criterion, 648 (16%) workers were excluded, totaling an eligible population of 3,392. Of these, the following losses were considered: 694 (20.5%) (refusals; not being found on the day and time of collection in the sector after three attempts; unavailability of time to complete the instrument), and 64 (1.89%) exclusions due to incomplete questionnaires. Thus, 2,634 workers participated in the study.

The data collection period was between February and August 2014, after institutional authorization and processing by the Research Ethics Committee. The invitation to participate in the study was made by the researcher during team meetings in individual approaches. The questionnaires were applied by 18 research assistants previously trained by the project coordinator. The instruments were answered individually in the workplace, in a reserved space, after signing the Informed Consent form in two copies. All necessary clarifications were provided according to Resolution 466/12 of the National Health Council.

The Brazilian version of the SAQ was used as the study protocol.[2] The instrument has 41 questions distributed in six domains of the patient safety culture (teamwork climate; safety climate; job satisfaction; stress recognition; perception of health unit and hospital management, and working conditions). The response options follow a five-point Likert scale: strongly disagree (A), partially disagree (B), neutral (C), partially agree (D), strongly agree (E) and not applicable (X).[2] The SAQ includes a second part, composed of demographic and labor data (sex, profession, length of experience in the specialty and main activity). In addition to these, age, work shift, another job engagement, overtime and direct or indirect work with the patient were added.

Data were organized in the Epi-info® program, version 6.4, with independent double typing. After checking for typing errors and inconsistencies, data analysis was performed using the R® software. Categorical variables were analyzed using absolute (n) and relative (%) frequencies. Quantitative variables were expressed by measures of central tendency and dispersion, according to the normality distribution or not of data assessed by the Kolmogorov-Smirnov test. The SAQ reliability analysis was performed using the Cronbach's alpha.

The analysis of the safety culture was made by general score and domain scores of the SAQ. The score can vary from 0 to 100 points; zero being the worst perception of the safety climate and 100 being the best perception. The "High and Low" dichotomization was performed using the cutoff point indicated for positive safety culture (≥75 points).[2] After inversion of reverse items (items 2, 11 and 36), the descriptive analysis of the SAQ was performed by the mean of responses to its 41 items, as recommended by the authors.[2] Subsequently, the items were grouped by domains and the score of the domain was calculated using the formula (m-1)x25, in which m is the mean of items in each domain [0–100].[2]

For the analysis of professional categories, joint evaluations (health professionals and support services) and different evaluations by professional categories were performed. The following terminologies were used to describe the results: General (Health and Support), Health (health professionals) and Support (other professionals of the institution: hygiene and cleaning, maintenance, nutrition and dietetics and administrative services, such as warehouse, secretariat and surveillance). For the bivariate analysis between the SAQ domains and the professional category, the Mann-Whitney and Chi-square

tests were used. In all analyzes, the significance level of 5% was adopted.

This study was approved by the Research Ethics Committee under opinion number 494.080 and CAAE number 25325613.5.0000.5346.

Results

An overall response rate of 77.7% was obtained, and small and medium-sized institutions showed better adherence to the survey. The total of 1,830 (69.5%) health professionals and 804 (30.5%) support service professionals participated. Female workers (n=1,901; 72.6%); aged between 19 and 38 years (n=1,312; 50.9%); working in mixed shifts (n=1,182; 45.1%); and who provided direct care to patients (n=1,854; 71.6%) predominated. Workers who did not occupy leadership positions (n=2,412; 91.9%), without other job engagements (n=2,097; 79.9%) and who did not work overtime (n=1,727; 66.2%) prevailed.

Table 1 shows the descriptive analyzes of the SAQ total scores and by domains, as well as the internal consistency of the instrument according to the professional categories analyzed.

The safety culture was negative (median 70.1), with a positive assessment in the domains "Job satisfaction" and "Teamwork environment" (median ≥ 75). The "Perception of management" domain obtained the lowest score. The SAQ showed adequate internal consistency (α=0.90) in the assessment of the General category, as well as in the individualized measurement by the Health and Support categories (α = 91). The assessment of the safety culture by professional category and divided among the six domains is shown in Table 2.

In the assessment by categories, the positive score for safety culture was achieved in the "Teamwork climate" and "Job satisfaction" domains by health professionals and only in the "Job satisfaction" domain by support workers. Table 3 presents the evaluation of the safety culture according to SAQ domains and professional categories.

Among health workers, physiotherapists had a better positive evaluation for "Teamwork climate" (p=0.026) and "Safety climate" (p=0.012); dentists for "Job satisfaction" (p=0.025); psychologists, on the other hand, presented the lowest ratings for "Working conditions" (p=0.001). As for the support category, security guards/doormen showed a more evident negative assessment for "Teamwork environment" (p=0.006), "Perception of hospital management" (p=0.003) and "Working conditions" (p=0.020). Among nutrition/dietetics professionals, the negative evaluation for "Perception of unit management" (p=0.004) stood out. In contrast, maintenance workers showed higher proportions for a positive culture in the "Job satisfaction" (p=0.010) domain.

Table 1. Descriptive analysis of the general score of the Safety Attitude Questionnaire (SAQ) and by domains in hospital institutions (n=2634)

General SAQ and Domains*	n†	Mean	Standard deviation	PCV‡	IQ interval§			Minimum	Maximum	Cronbach's alpha by professional category		
					25	50	75			General*	Health	Support
SAQ total	2.634	68.4	13.4	0.19	59.7	70.1	77.7	13.9	97.9	0.90	0.91	0.91
Teamwork climate	1989	74.3	16.6	0.22	62.5	75.0	87.5	12.5	100.0	0.61	0.60	0.65
Safety climate	2149	68.5	17.5	0.25	57.1	71.4	82.1	3.5	100.0	0.65	0.66	0.64
Job satisfaction	2556	83.6	17.4	0.20	75.0	90.0	95.0	0.0	100.0	0.78	0.75	0.83
Stress recognition	1959	62.6	28.1	0.44	43.7	68.7	87.5	0.0	100.0	0.79	0.79	0.77
Perception of management												
Unit	2200	63.3	21.8	0.34	50.0	66.6	79.1	0.0	100.0	0.73	0.72	0.75
Hospital	2332	60.8	23.2	0.38	45.0	60.0	80.0	0.0	100.0	0.76	0.75	0.76
Working conditions	1862	63.1	26.7	0.42	41.6	66.6	83.3	0.0	100.0	0.71	0.71	0.70

*Applied to health professionals and support services jointly; †The frequency of each variable may have a different n depending on the number of "not applicable" responses for each item of the instrument; ‡PCV = Standard deviation/Mean; §Interquartile interval

Table 2. Distribution of scores in the domains of the Safety Attitude Questionnaire and safety culture (SAQ) according to professional categories in the areas of Health and Support

SAQ domain Professional category	SAQ score					Safety culture	
	Mean	SD	Median	Minimum	Maximum	Low n(%)	High* n(%)
Teamwork climate†							
Health	75.6	15.9	79.1	16.6	100.0	648(39.8)	981(60.2)
Support	69.5	19.1	70.8	16.6	100.0	193(54.4)	162(45.6)
Safety climate‡							
Health	68.7	17.2	71.4	3.5	100.0	915(55.5)	733(44.5)
Support	67.8	17.1	67.8	25.0	100.0	278(56.3)	216(43.7)
Job satisfaction†							
Health	84.6	15.8	90.0	5.0	100.0	324(18.2)	1461(81.8)
Support	80.4	22.5	90.0	0.0	100.0	189(24.7)	575(75.3)
Stress recognition‡							
Health	62.5	28.1	62.5	0.0	100.0	869(54.7)	720(45.3)
Support	58.5	28.1	62.5	0.0	100.0	200(54.9)	164(45.1)
Perception of unit management†							
Health	62.1	21.3	66.6	0.0	100.0	1068(65.3)	568(34.7)
Support	64.9	20.7	66.6	4.1	100.0	318(57.0)	240(43.0)
Perception of hospital management†							
Health	59.1	22.8	60.0	0.0	100.0	1149(68.4)	530(31.6)
Support	61.3	22.9	60.0	5.0	100.0	379(58.7)	267(41.3)
Working conditions‡							
Health	63.1	27.0	66.6	0.0	100.0	847(54.6)	705(45.4)
Support	65.4	24.1	66.6	0.0	100.0	172(56.0)	135(44.0)

*Dichotomization cutoff point: score ≥ 75 points; †Mann-Whitney U test p-value <0.001; ‡ Mann-Whitney U test p-value >0.05

Table 3. Evaluation of the safety culture according to professional categories and domains of the Safety Attitude Questionnaire - SAQ (n=2634).

Professional category		Domains of the safety culture (SAQ)													
		Teamwork climate		Safety climate		Job satisfaction		Stress recognition		Perception of management Unit		Perception of management Hospital		Working conditions	
		Low	High*	Low	High	Low	High	Low	High	Low	High	Low	High	Low	High
	n	%		%		%		%		%		%		%	
Health category	1102	38.3	61.7	57.2	42.8	17.8	82.2	63.4	36,6	68,8	31,2	71,1	28,9	55,4	44,6
Nurse	339	45.7	54.3	58.6	41.4	20.9	79.1	49.9	50,1	65,2	34,8	67,3	32,7	63,7	34,3
Doctor	113	25.2	74.8	59.8	40.2	23.9	76.1	40.7	59,3	68,9	31,1	71,8	28,2	79,3	20,7
Pharmacist	52	47.4	52.6	57.7	42.3	17.3	82.7	67.3	32,7	61,2	38,8	68,6	31,4	67,3	32,7
Physiotherapist	11	10.0	90.0	18.2	81.8	9.1	90.9	54.5	45,5	30,0	70,0	54,5	45,5	27,3	72,7
Nutritionist	21	42.9	57.1	66.7	33.3	33.3	66.7	76.2	23,8	78,9	21,1	71,4	28,6	61,9	38,1
Psychologist	7	25.0	75.0	28.6	71.4	14.3	85.7	71.4	28,6	80,0	20,0	57,1	42,9	83,3	16,7
Dentist	6	33.3	66.7	20.0	80.0	----	100	83.3	16,7	33,3	66,7	16,7	83,3	33,3	66,7
Others	178	53.3	46.7	70.1	29.9	25.3	74.7	69.0	31,0	63,6	36,4	75,4	24,6	74,7	25,3
Total	1830	39.8	60.2	58.6	41.4	19.5	80.5	60.4	39	67,2	32,8	70,4	29,6	60,8	39,2
p-value†		0.026		0.012		0.025		0.115		0.111		0.592		0.001	
Support category															
Administrative	328	53.1	46.9	58.5	41.5	24.3	75.7	54.6	45,4	60,6	39,4	62,3	37,7	57,5	42,5
Hygiene and cleaning service	174	63.9	36.1	52.9	47.1	30.5	69.5	48.1	51,9	49,7	50,3	57,7	42,3	48,4	51,6
Nutrition/dietetics	92	50.0	50.0	60.6	39.4	37.5	62.5	59.2	40,8	72,3	27,7	70,0	30,0	67,4	32,6
Maintenance	34	53.8	46.2	50.0	50.0	5.9	94.1	55.0	45,0	42,9	57,1	44,4	55,6	28,6	71,4
Security guard/doormen	29	88.2	11.8	70.0	30.0	32.0	68.0	90.0	10,0	69,6	30,4	76,2	23,8	85,7	14,3
Managers/directors	10	16.7	83.3	57.1	42.9	20.0	80.0	80.0	20,0	50,0	50,0	37,5	62,5	25,0	75,0
Others	137	42.1	57.9	50.0	50.0	14.1	85.9	55.0	45,0	47,1	52,9	44,3	55,7	53,1	46,9
Total	804	54.1	45.9	56.2	43.8	24.7	75.3	54.8	45,2	37,0	43,0	58,6	41,4	56,0	44,0
p-value†		0.006		0.606		0.010		0.353		0.004		0.003		0.020	

*Cutoff point in all domains: score ≥ 75; † Chi-square test

Discussion

The overall rate of responses to the survey was appropriate, considering the population and the subject studied, when compared to other publications.[4,7,10] The percentage of responses was lower than those of Portuguese[10] and Arab studies,[11] but higher than Brazilian studies,[4,7,12] since discussions about safety culture are still recent in the Brazilian context. The instrument reliability proved to be satisfactory, thereby corroborating other evidence in general evaluation between 0.83 and 0.86.[8,12,13]

The general assessment of the patient safety culture was predominantly negative among the institutions surveyed. This finding is similar to international studies conducted in China[14] and Palestine,[15] with a score ranging from 61.3[15] to 70.2[14] and to national studies conducted in Ceará,[4,7] with scores between 63.4 and 71.5.[4,7] However, it differs from a study with support workers performed in the same state that presented a positive safety culture.[12]

In both professional categories, positive perceptions were identified in the "Job satisfaction" domain, as it obtained a higher score compared to the other domains evaluated, especially among dentists. It was similar to international[16,17] and national studies that presented favorable scores.[4,7,12,18] The positive perception in this domain is relevant, since the quality of care provided by professionals and consequently, the patient safety, are directly related to their satisfaction.[18] Aspects such as recognition, enjoying the professional role and good relationships in the workplace contribute to job satisfaction.[19]

Furthermore, a Chinese study developed in a pediatric unit corroborates the positive findings in the "Teamwork climate" domain.[20] Teamwork conducted through a relationship that provides knowledge, motivation, collaboration, interaction and cooperation between professionals contributes to less adverse events and reduces rates of complications related to the care provided.[13,19] Another important aspect is the efficient and constant communication between management and other professionals.[13] Thus, a positive teamwork climate contributes to promote a healthy environment, which makes safe care possible and consequently, strengthens the safety culture.[20]

When analyzing the "Teamwork climate" by professional categories, physiotherapists clearly presented superior positive results to the others, mainly when compared to security guards/doormen, who evaluated it negatively. The autonomy and distinct work dynamics of physiotherapists in work activities may indicate their excellent relationship with the other teams. Regarding support service workers, a study corroborates the evidence that they have lower scores in this domain and are less favorable to safety attitudes than those who provide direct care.[12] However, the sometimes lonely activity can trigger the perception of lack of companionship in work relations.

Although support workers develop essential activities for safe and quality patient care, they experience feelings of devaluation and contempt in relation to the development of their activities, which directly interferes in job satisfaction.[21] This may occur due to the lack of integration and strengthening between teams that distances them from the patient care process and demonstrates the need to encourage continuing education and the transversal insertion of the theme as strategies for building a culture of patient safety.[22]

In this perspective, interpersonal relationships need improvement in health institutions, especially among support service professionals. Studies[23,24] indicate that different perceptions may vary according to the position. According to a study conducted in Saudi Arabia, these variations are probably related to differences in status/authority and professional cultures, differential responsibilities and capabilities and gender issues.[24]

As for the "Safety climate" domain, the general assessment was negative, in contrast to the study conducted with 630 health and support workers.[12] However, in the present study, an association between physiotherapists and a positive perception of safety was observed. The relevance of this domain lies in its relationship with patient safety, since hospitals with higher levels of safety climate have a lower incidence of avoidable complications and adverse events.[25] In addition,

professionals in support positions presented the lowest scores in this domain. A study indicates that the worker's possibility of choosing the unit of activity is associated with a positive perception of the safety climate and configures a strategy for strengthening the culture.[12]

Regarding the "Perception of unit and hospital management", a negative overview of actions aimed at patient safety was observed. Note that management plays a fundamental role in planning, developing, instituting and monitoring actions aimed at promoting the organizational culture and sensitizing team professionals about safe care.[26] For a stronger safety culture, participatory management is indispensable to know and assist in the challenges faced by the team. Through effective communication, the participation of managers in activities can contribute to a relationship of trust between all professionals.[27]

In the associations, it was found that security guards/doormen together with nutrition/dietetics workers have a negative perception of the unit and hospital management. These findings are opposed to the positive patterns detected in the evaluation of maintenance workers in these domains, as well as compared to another study[12] with a similar population, suggesting a greater approximation between management and their work team and between the team and their management. Thus, the need to readjust work processes in health institutions and include all professional categories in the development of improvement strategies and administrative decisions.

Furthermore, health and support service professionals, especially psychologists and security guards/doormen presented negative scores regarding the "Working conditions" domain, consistent with findings from a study in northeastern Brazil.[18] Clearly, aspects related to lack of qualification, low remuneration, reduced number of professionals and exposure to risk factors contribute to inadequate working conditions.[27] In this context, the importance of investigating and promoting favorable environments for the performance of professional activities is emphasized, since this directly influences the quality of care provided.[18,27]

Based on the above, the limitation of the study is the difficulty in confronting data related to support service professionals because of the scarcity of scientific productions including this population.[12] Although these professionals still remain with little visibility and sometimes do not realize their real importance as members of a team, they play a significant role in institutions, as they provide indirect care to patients and assist the other categories in the excellence of care provided.

Moreover, the variability of the size of the institution and complexity of hospitals evaluated may have interfered with the interpretation of results. In line with scientific evidence,[25] the institutional contexts, the units within the same hospital and the general culture of patient safety are organized and create subcultures according to its specificities.

Conclusion

The culture of patient safety was assessed as negative by workers, except in the "Job satisfaction" and "Teamwork climate" domains. The "Perception of hospital management" obtained lower results and this indicator may be related to actual management problems that interfere with workers' motivation. When comparing the professional categories (health and support), little variability in the scores was identified, although support service professionals had a tendency to score lower. Physiotherapists, dentists and maintenance workers evaluated the safety culture positively. Psychologists, nutrition/dietetics professionals and security guards/doormen had higher percentages in negative culture. The culture change in relation to safety must start from the management involvement with the review and improvement of work processes that may impact on the behavior and performance of other workers.

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Collaborations

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