Breaking bad news: self-perception of medical students

Esther Angélica Luiz Ferreira [1], *Fernanda Dermando Brida* [1], *Emilio Martins Curcelli* [1], *Cristina Ortiz Sobrinho Valete* [1]

1. Universidade Federal de São Carlos, São Carlos/SP, Brasil.

Abstract

This study analyzed medical students' self-perception regarding their aptitude to communicate bad news and identify associated factors. Using a self-administered questionnaire, 44.1% of 214 participants considered themselves suitable for the approach. The following were associated with greater self-perception of aptitude for breaking bad news: more time in the course ($p<0.001$); believing that the undergraduate course offered the necessary resources to acquire the skill to communicate bad news ($p<0.001$); knowing a validated protocol ($p=0.015$); having needed to communicate bad news during the undergraduate course ($p<0.001$). In conclusion, most students felt unable to communicate bad news. Knowing a protocol and having the need to communicate bad news during the undergraduate course were essential for aptitude. As a suggestion, the topic should be approached differently, with more practical activities.

Keywords: Health communication. Physician-patient relation. Education, higher.

Resumo

Comunicação de más notícias: autopercepção de estudantes de medicina
Este estudo analisou a autopercepção de estudantes de uma faculdade de medicina em relação a sua aptidão para comunicar más notícias e identificar fatores associados. Mediante questionário autoaplicável, 44,1% do total de 214 participantes se consideraram aptos para a abordagem. Foram associados à maior autopercepção de aptidão para a comunicação de más notícias: mais tempo de curso ($p<0,001$); achar que a graduação ofereceu os recursos necessários à aquisição da habilidade de comunicar más notícias ($p<0,001$); conhecer algum protocolo validado ($p=0,015$); e ter tido necessidade de comunicar má notícia na graduação ($p<0,001$). Concluiu-se que a maioria dos estudantes não se sentia apta a comunicar más notícias. Conhecer um protocolo e ter tido necessidade de comunicar más notícias na graduação foram importantes para a aptidão. Sugere-se que o tema seja abordado de forma diferente, com mais atividades práticas.

Palavras-chave: Comunicação em saúde. Relações médico-paciente. Educação superior.

Resumen

Comunicación de malas noticias: autopercepción de estudiantes de medicina
Este estudio analizó la autopercepción de los estudiantes de una facultad de medicina en relación con su aptitud para comunicar malas noticias e identificar factores asociados. A través de un cuestionario autoaplicable, el 44,1 % del total de 214 participantes se consideraron aptos para el enfoque. Se asociaron con una mayor autopercepción de aptitud para la comunicación de malas noticias: más tiempo de curso ($p<0,001$); pensar que el pregrado ofreció los recursos necesarios para adquirir la habilidad de comunicar malas noticias ($p<0,001$); conocer algún protocolo validado ($p=0,015$); y haber tenido necesidad de comunicar malas noticias en el pregrado ($p<0,001$). Se concluyó que la mayoría de los estudiantes no se sentían aptos para comunicar malas noticias. Conocer un protocolo y haber tenido la necesidad de comunicar malas noticias en el pregrado fue importante para la aptitud. Se sugiere que el tema sea abordado de forma diferente, con más actividades prácticas.

Palabras clave: Comunicación en salud. Relaciones médico-paciente. Educación superior.

Research

Bad news are any news whose communication will directly or indirectly lead to some negative change in the patients' lives, according to their perception, with traumatic implications and sensations. For example, the diagnosis of cancer or other end-stage diseases, diabetes in an adolescent, or limiting heart disease in an athlete [1,2].

Due to the negative impact on the patients' lives, breaking bad news (BBN) can be highly stressful and anxiety-inducing, especially for newly graduated professionals [3]. This occurs because healing is usually seen as the main focus of work in health. The impossibility of achieving it is generally understood as failure or lack of success. Thus, physicians may feel frustrated and even guilty for communicating that they cannot offer what the patients expect [4,5]. For this reason, the skill to communicate bad news is essential to medical practice.

Reports on the anguish experienced by oncologists when the prospects for cancer treatment were poor exist since before the 1970s, and most physicians considered BBN inhuman and harmful. With advances in cancer treatment, it has become easier to offer hope at diagnosis. However, at the same time, other situations have arisen, such as recurrence or progression of the disease and irreversible side effects, making the BBN skill fundamental to clinical practice [6].

Furthermore, changes in society, such as the development of new technologies, the accelerated improvement of science, and the emergence of bioethics, have contributed to the reformulation of paradigms in health. New values and moral rules associated with autonomy and valuing patients in fulfilling their desires and exercising their rights stand out in these circumstances.

Beauchamp and Childress [7] highlighted that, in the context of contemporary medical ethics, the virtues of sincerity and honesty, essential principles in BBN, are considered of high value in the character of health professionals. The Brazilian Code of Medical Ethics emphasizes patient autonomy, identifying the limits of the desire for knowledge and mutual planning in the management of situations [8]. Such ideas will only be understood if the health professional communicates appropriately [9].

The Spikes protocol, organized into six steps, aims to facilitate both the role of the physician breaking bad news and that of the receiving patient, aiming to reduce anxiety, the physician's sense of guilt, and the negative emotional impact on the patient. Its components include empathy, recognition, and validation of feelings, in addition to exploring the patients' understanding and acceptance of bad news, providing information about possible interventions, planning, and agreement on subsequent follow-up [6,10].

With the hypothesis that the Spikes protocol would not fit into the Brazilian socio-cultural context, an adaptation, called the "Paciente" protocol, was validated in 2017. This protocol is based on preparation, access to the patients' knowledge, an invitation to the truth, information, emotions, not abandoning the patient, and in "devising a strategy" [11]. It is essential to work on the truth, dosing it, via dialogue with the patients, empathically recognizing their fears, tastes, culture, and doubts [12].

Based on the premise that BBN is an essential competence for the health professional and requires training, there are validated protocols for its best execution. Medical students should have contact with this theme during the undergraduate course. Furthermore, it was taken into account that this topic has already been effectively applied using a structured questionnaire throughout the course [13]. Therefore, this study aimed to analyze students' self-perception in a medical school concerning BBN aptitude, identifying factors associated with this perception.

Method

This is an observational, cross-sectional, and mixed (qualitative and quantitative) study carried out from September 2018 to February 2019. All students regularly enrolled in a medical school in the 2018 academic year were invited to participate. The institution's framework is constructivist, and undergraduate students have been in contact with the BBN topic since the 1st year.

Convenience sampling was used, for 214 students attending the 1st to 6th years. Exclusion criteria were refusal to participate in the study; failure to complete the questionnaire; or previous training in which BBN content could have been addressed.

The data collection instrument consists of a self-administered questionnaire consisting of

http://dx.doi.org/10.1590/1983-80422022301506EN

Rev. bioét. (Impr.). 2022; 30 (1): 54-62   55

14 questions, 12 with alternatives and two open, for greater understanding. The participating student had 20 minutes to complete the questionnaire, in a quiet environment, without the presence of the researchers, to make the situation more comfortable.

Information such as age, gender, year of the course, contact with the BBN topic, the importance of the topic, self-perception of aptitude for BBN, difficulties, and experience with BBN during the undergraduate course were collected. For students who did not consider themselves suitable for BBN, the reason for this assessment was asked; those who believed that the undergraduate course did not offer the necessary resources to acquire the BBN skill were asked how the course could improve.

Self-perception of aptitude for BBN (yes/no) was considered an outcome variable. The explanatory variables were: gender, age, year of the course, having had first contact with BBN during the undergraduate course, year in which this first contact took place, having had contact with BBN in extracurricular activities, considering the BBN topic important for a medical career, knowing a BBN protocol, having communicated bad news at the undergraduate level, deeming BBN important at the undergraduate level, and believing that the undergraduate course offers the necessary resources to acquire the BBN skill.

Statistical analysis of quantitative variables was performed using the Stata software, version 13.0 (Stata Corp, LCC, USA), and data were tested for normality (Kolmogorov-Smirnov test). Results are presented as frequencies, medians, interquartile ranges (IQR), and 95% confidence intervals (95% CI). Differences between more than two medians were calculated using the Kruskal-Wallis test, and bivariate analysis was performed with the outcome and possible associated variables.

Poisson analysis (robust estimation and log linkage function) was used to estimate the crude (PR) and adjusted (APR) prevalence ratios. Variables with $p<0.20$ were included in calculating the adjusted prevalence ratios, and in the final analysis, $p<0.05$ was considered significant. The analysis used the word cloud method for the two qualitative questions, with visual representation.

Results

The sample had 214 participants, 109 (50.9%) men, and 105 (49.1%) women, and the median age was 24 years (IQR 22-27). As for the year of the course, the distribution was as follows: 32 (14.9%) were in the 1st year, 41 (19.16%) in the 2nd 36 (16.8%) in the 3rd 32 (14.9%) in the 4th, 34 (15.9%) in the 5th, and 39 (18.2%) in the 6th. Of the 211 participants who answered about self-perception of aptitude in BBN, 93 (44.1%) considered themselves apt.

The answers to the questionnaire revealed that most students had contact with the BBN topic already in the first year of the undergraduate course (Table 1). Regarding the BBN protocols, 81 (38%) participants denied knowing them and, among the known protocols, Spikes was mentioned in 127 (59.3%) responses, appearing in an isolated or associated form, found together with the Paciente in three responses and with the Nurse in one. The Assist protocol was cited by one (0.5%) respondent and 12 (5.6%) respondents claimed to know protocols without citing names.

Table 1. Undergraduate students' knowledge on the topic of breaking bad news (n=214)

Question	Number of responses	%
Have you already had your first contact with the BBN topic in the undergraduate curriculum?		
Yes	173	80.9
No	41	19.1
Total responses	214	100.0

Table 1. Continuation

Question	Number of responses	%
In what year the first contact occurred?		
1st year	87	50.6
2nd year	49	28.5
3rd year	20	11.6
4th year	13	7.6
5th year	3	1.7
Total responses	172	80.4
Have you had contact with the BBN topic in an extracurricular activity?		
Yes	147	68.7
No	67	31.3
Total responses	214	100.0
Do you consider the BBN topic important for a medical career?		
Yes	210	98.6
No	3	1.4
Total responses	213	99.5
Do you know a validated protocol for BBN assistance?		
Yes	132	62.0
No	81	38.0
Total responses	213	99.5
If yes, where did you learn it?		
University	92	69.7
College/conferences, symposia	15	11.3
Congresses, symposia	7	5.3
Internet	5	3.8
Others	13	9.9
Total responses	132	61.7
In how many situations during your undergraduate course were you required to BBN?		
None	106	51.7
Once	29	14.1
Twice	28	13.7
More than twice	42	20.5
Total responses	205	95.8
Do you believe the BBN subject is essential in undergraduate course?		
Yes	199	97.5
No	5	2.5
Total responses	204	95.3
Do you believe that your undergraduate course offers the necessary resources to acquire the BBN skill?		
Yes	120	59.7
No	81	40.3
Total responses	201	93.9

Research

Table 1. Continuation

Question	Number of responses	%
Do you consider yourself suitable for BBN?		
Yes	93	44.1
No	118	55.9
Total responses	211	98.6
What do you consider your most significant difficulty?		
Nervousness	92	43.0
I believe that bad news is bad for the patient	23	10.7
I wouldn't know how to break the news	58	27.1
I wouldn't know how to deal with the patients' reaction	103	48.1
I don't believe I, a physician, should have this task	2	0.9
Other	18	8.4
Total responses	214	100.0

BBN: breaking bad news

For the question "Why don't you feel apt to BBN?" the result of the word cloud technique revealed, concerning the participants' most significant difficulties in breaking bad news, the answers "lack," "practice," "topic," "protocol," and "little." The question "How to improve the undergraduate course to offer the necessary resources to acquire the skill to break bad news?" presented as a response, mostly, the words "topic," "practice," "situations," "activities," "curricular," and "workshop."

The variables that, in isolation, were associated with greater self-perception of aptitude in BBN were: attending from the 4th to the 6th year; having had contact with BBN during the undergraduate course; having had contact with BBN in extracurricular activities; knowing some valid BBN protocol; having communicated bad news during the undergraduate course, and judging that the undergraduate course offered the necessary resources to acquire the BBN skill (Table 2).

In Poisson's multivariate analysis (Table 3), the variables that remained in the model were: attending from 4th to 6th year (APR 2.52; $p<0.001$), believing that the undergraduate course offered the necessary resources to acquire the BBN skill (APR 2.03; $p<0.001$), knowing a validated BBN protocol (APR 1.70; $p=0.015$), and having communicated bad news during the undergraduate course (APR 1.07; $p<0.001$).

Table 2. Prevalence and crude prevalence ratio of having aptitude in breaking bad news and variables

Variable	n	%	Aptitude for BBN (%)	PR	*p*-value
Having communicated bad news during the undergraduate course					
Yes	99	48.30	71.71	3.84	<0.001
No	106	51.70	18.86	1	
Year of the course					
4th to 6th	104	49.3	70.20	3.75	<0.001
1st to 3rd	107	50.7	18.70	1	
Knowing a validated protocol for BBN					
Yes	132	62.0	58.33	2.99	<0.001
No	81	38.0	19.75	1	

Research

Table 2. Continuation

Variable	n	%	Aptitude for BBN (%)	PR	*p*-value
Having had first contact with BBN during the undergraduate course					
Yes	173	80.9	49.71	2.87	0.003
No	41	19.1	17.07	1	
Believing that the undergraduate course offered the necessary resources to acquire the BBN skill					
Yes	120	59.7	55.83	1.99	<0.001
No	81	40.3	27.16	1	
Having had contact with BBN in extracurricular activities					
Yes	147	68.7	48.29	1.50	0.037
No	67	31.3	32.83	1	

BBN: breaking bad news; PR: prevalence ratio

Table 3. Adjusted prevalence ratio of having aptitude in breaking bad news and associated variables

Variable	APR	95% CI	*p*-value
Year of course	2.52	1.54-4.13	<0.001
Believing that the undergraduate course offered the necessary resources to acquire the BBN skill	2.03	1.45-2.82	<0.001
Knowing a validated protocol for BBN	1.70	1.10-2.63	0.015
Having communicated bad news during the undergraduate course	1.07	1.04-1.11	<0.001

BBN: breaking bad news; APR: adjusted prevalence ratio

Discussion

Most participants (98.6%) considered the BBN topic important for the medical career; 80.9% had first contact with the subject during the undergraduate course, half of them (50.6%) were still in the first year and extracurricular activities were also important moments of insertion into the topic (68.7%). The literature clearly shows the importance of learning the BBN skill during the undergraduate course from the students' perspective [13].

In the present study, 62% of the participants demonstrated validated BBN protocol knowledge, associated with 70% more aptitude for BBN. Other works have shown that, after introducing the theoretical basis on how to provide BBN in a lecture on the Spikes protocol, medical students felt, in the majority, apt for the task, showing that the presentation of the topic during the undergraduate course can reduce anxiety and anguish [2,14,15].

The qualitative evaluation revealed that words such as "lack," "practice," "topic," "protocol," and "little" were frequent in the students' opinions when explaining why they feel unable to provide BBN. Thus, it can be understood that the lack of practical activities and knowledge about the topic and protocols negatively influence the BBN skill.

When asked about the most significant difficulties, most students indicated nervousness in dealing with patients' reactions. These were also the most significant difficulties faced by oncologists in the 1950s and 1960s, but they can be minimized with a better theoretical-practical knowledge of the topic [6].

Such adversities are reported in more recent studies, such as the one by Dias and collaborators [16], who showed that fear, lack of support from supervisors, and fear of disappointing or taking away the patients' hope were obstacles to BBN. In this research, resident physicians cited the lack of approach to the topic during the undergraduate course as an explanation for the difficulty in BBN, and 80% felt more apt after the theoretical-practical approach to the topic [16].

Research

It is interesting to point out that the institution where this research was conducted uses a constructivist spiral methodology, where the same topic is reinforced at different time points of the course. Regarding the BBN, half of the students claimed to have their first contact in the 1st year of the course, and most had it before residency. Thus, as the students acquire more knowledge and increase their patient-caregiver responsibilities, more complex aspects of the BBN skill are progressively apprehended.

Also, considering the set of factors associated with self-perception of aptitude for BBN, being in the second half of the course increased the feeling of aptitude for BBN more than twice, and having had to communicate bad news during the undergraduate course increased by 7%. Thus, the greater frequency of contact with the subject contributed positively to acquiring the skill.

Freiberger, Carvalho, and Bonamigo [13] observed that students in the second half of the medical course reported greater BBN preparation than those in the first half. A recent systematic review showed that BBN is well accepted and valued by medical students who reported better communication skills after training [17].

However, even having early contact with the subject during the undergraduate course, which was reinforced over the years, only 44.1% of the participants reported aptitude for BBN. This may be due to how and the depth the subject is approached during the undergraduate course. In this regard, studies show that this skill is achieved via experience and knowledge, training, and constant reflection, both by students and medical professionals.

Based on the premise that communication skills can be taught, different education strategies for medical students have been used. They include didactic classes, group discussions, individual or group performance practices with simulated patients, and didactic moments during clinical care. Studies also reinforce that the most effective training goes beyond the theoretical method, using multiple sessions of opportunities, practices, discussions, reflections, and feedback techniques.

Empathy can thus be developed and verbal and non-verbal communication skills learned [16-18]. Although BBN training can be effective for physicians and medical students, doubt about its actual impact on global competence seem to remain, so controlled studies are needed [19].

The most recurrent words in the answers to "How to improve the undergraduate course to offer the necessary resources to acquire the skill to communicate bad news?" referred to how the topic was approached. The most frequent terms were "topic," "practice," "situations," "activities," "curricular," and "workshop," which may suggest that students consider practical activities on the topic in the curriculum, such as simulations of situations and workshops, of great value for learning and acquiring the BBN skill.

Furthermore, finding that the undergraduate course offered the necessary resources to acquire the BBN skill was associated with a perception of having the skill twice as high. Then, it can be understood that the resources are available, but how they are used in training deserves to be reassessed.

The students' perception is known to influence their skill to communicate. Several studies consider the individual's belief concerning their skill to deal with certain situations – called self-perception – as a predictor and influencer of academic development and student performance [20-24].

Final considerations

Most participants did not consider themselves suitable for the BBN, despite considering the subject important in the undergraduate course. The absence of practical activities on the subject emerged as a response to this lack of aptitude. Despite this, participants felt more prepared when they were students from the 4th to the 6th year, and those who communicated bad news during the undergraduate course. Regarding protocols, most know some, with Spikes being the most cited, and such knowledge was associated with greater self-perception of aptitude in BBN.

Believing that the undergraduate course offered the necessary resources to acquire the BBN skill was associated with better self-perception. Therefore, it is relevant to consider that practical activities were suggested beyond those already occurring among the proposed improvements.

References

1. Emanuel LL, Ferris FD, von Gunten CF. EPEC: education for physicians on end-of-life care. Am J Hosp Palliat Care [Internet]. 2002 [acesso 18 jan 2021];19(1):17. DOI: 10.1177/104990910201900105

2. Lino CL, Augusto KL, Oliveira RAS, Feitosa LB, Caprara A. Uso do protocolo Spikes no ensino de habilidades em transmissão de más notícias. Rev Bras Educ Méd [Internet]. 2011 [acesso 18 jan 2021];35(1):52-7. DOI: 10.1590/S0100-55022011000100008

3. Ptacek JT, Ptacek JJ, Ellison NM. "I'm sorry to tell you…": physicians' reports of breaking bad news. J Behav Med [Internet]. 2001 [acesso 18 jan 2021];24(2):205-17. DOI: 10.1023/a:1010766732373

4. Pereira CR. Comunicando más notícias: protocolo paciente [tese] [Internet]. Botucatu: Universidade Estadual Paulista; 2010 [acesso 18 jan 2021]. Disponível: https://bit.ly/3HAx6QI

5. Dias L, Chabner BA, Lynch TJ Jr, Penson RT. Breaking bad news: a patient's perspective. Oncologist [Internet]. 2003 [acesso 18 jan 2021];8(6):587-96. DOI: 10.1634/teoncologista.8-6-587

6. Baile WF, Buckman R, Lenzi R, Glober G, Beale EA, Kudelka AP. Spikes: a six-step protocol for delivering bad news: application to the patient with cancer. Oncologist [Internet]. 2000 [acesso 18 jan 2021];5(4):302-11. DOI: 10.1634/theoncologist.5-4-302

7. Beauchamp TL, Childress JF. Princípios de ética biomédica. São Paulo: Loyola; 2002.

8. Conselho Federal de Medicina. Código de Ética Médica: Resolução CFM n° 2.217, de 27 de setembro de 2018, modificada pelas Resoluções CFM n° 2.222/2018 e 2.226/2019 [Internet]. Brasília: CFM; 2019 [acesso 18 jan 2021]. Disponível: https://bit.ly/2YX9oNm

9. Geovanini F, Braz M. Conflitos éticos na comunicação de más notícias em oncologia. Rev. bioét. (Impr.) [Internet]. 2013 [acesso 18 jan 2021];21(3):455-62. Disponível: https://bit.ly/3JbaKFE

10. Pereira ATG, Fortes IFL, Mendes JMG. Comunicação de más notícias: revisão sistemática da literatura. Rev Enferm UFPE [Internet]. 2013 [acesso 18 jan 2021];7(1):227-35. Disponível: https://bit.ly/3ovTvHm

11. Pereira CR, Calônego MAM, Lemonica L, Barros GAM. The P-A-C-I-E-N-T-E Protocol: an instrument for breaking bad news adapted to the Brazilian medical reality. Rev Assoc Méd Bras [Internet]. 2017 [acesso 18 jan 2021];63(1):43-9. DOI: 10.1590/1806-9282.63.01.43

12. Araujo JA, Leitão EMP. A comunicação de más notícias: mentira piedosa ou sinceridade cuidadosa. Rev Hupe [Internet]. 2012 [acesso 18 jan 2021];11(2):58-62. Disponível: https://bit.ly/360DUt7

13. Freiberger MH, Carvalho D, Bonamigo EL. Comunicação de más notícias a pacientes na perspectiva de estudantes de medicina. Rev. bioét. (Impr.) [Internet]. 2019 [acesso 18 jan 2021];27(2):318-25. DOI: 10.1590/1983-80422019272316

14. Chehuen Neto JA, Sirimarco MT, Cândido TC, Bicalho TC, Matos OB, Berbet GH, Vital LV. Profissionais de saúde e a comunicação de más notícias sob a ótica do paciente. Rev Méd Minas Gerais [Internet]. 2013 [acesso 18 jan 2021];23(4):518-25. Disponível: https://bit.ly/380FpbD

15. Bastos BR, Fonseca ACG, Pereira AK, Silva LCS. Formação dos profissionais de saúde na comunicação de más notícias em cuidados paliativos oncológicos. Rev Bras Cancerol [Internet]. 2016 [acesso 18 jan 2021];62(3):263-6. Disponível: https://bit.ly/3Le9PpT

16. Dias LM, Carvalho AEV, Furlaneto IP, Oliveira CGS. Percepção de médicos residentes quanto às habilidades de comunicação após uma oficina de comunicação de más notícias. Rev Bras Educ Méd [Internet]. 2018 [acesso 18 jan 2021];42(4):175-83. DOI: 10.1590/1981-52712015v42n3RB20180047ING

17. Camargo NC, Lima MG, Brietzke E, Mucci S, Góis AFT. Ensino de comunicação de más notícias: revisão sistemática. Rev. bioét. (Impr.) [Internet]. 2019 [acesso 18 jan 2021];27(2):326-40. DOI: 10.1590/1983-80422019272317

18. Turini B, Martins Neto D, Nunes SOV, Silva VLM, Thomson Z. Comunicação no ensino médico: estruturação, experiência e desafios em novos currículos médicos. Rev Bras Educ Méd [Internet]. 2008 [acesso 18 jan 2021];32(2):264-70. DOI: 10.1590/S0100-55022008000200015

19. Nonino A, Magalhães SG, Falcão DP. Treinamento médico para comunicação de más notícias: revisão da literatura. Rev Bras Educ Méd [Internet]. 2012 [acesso 18 jan 2021];36(2):228-33. DOI: 10.1590/S0100-55022012000400011

Research

20. Rosenbaum ME, Ferguson KJ, Lobas JG. Teaching medical students and residents skills for delivering bad news: a review of strategies. Acad Med [Internet]. 2004 [acesso 18 jan 2021];79(2):107-17. DOI: 10.1097/00001888-200402000-00002

21. Araújo MMTA, Silva MJP. Estratégias de comunicação utilizadas por profissionais de saúde na atenção a pacientes sob cuidados paliativos. Rev Esc Enferm USP [Internet]. 2012 [acesso 18 jan 2021];46(3):626-32. DOI: 10.1590/S0080-62342012000300014

22. Moreira BBG, Martins-Reis VO, Santos JN. Autopercepção das dificuldades de aprendizagem de estudantes do ensino fundamental. Audiol Commun Res [Internet]. 2016 [acesso 18 jan 2021];21:e1632. DOI: 10.1590/2317-6431-2015-1632

23. Dalbosco SNP, Ferraz AS, Santos AAA. Metas de realização, autorregulação da aprendizagem e autopercepção de desempenho em universitários. Rev Bras Orientac Prof [Internet]. 2018 [acesso 18 jan 2021];19(1):75-84. Disponível: https://bit.ly/35XaNXu

24. Zheng C, Erickson AG, Kingston NM, Noonam PE. The relationship among self-determination, self-concept, and academic achievement for students with learning disabilities. J Learn Disabil [Internet]. 2012 [acesso 18 jan 2021];47(5):462-74. DOI: 10.1177/0022219412469688

Esther Angélica Luiz Ferreira – PhD – estherferreira@ufscar.br
0000-0003-2582-9045

Fernanda Dermando Brida – Undergraduate student – ferxbrida@gmail.com
0000-0002-2480-8835

Emilio Martins Curcelli – Undergraduate student – emilio.curcelli@gmail.com
0000-0001-6946-7715

Cristina Ortiz Sobrinho Valete – PhD – cristina.ortiz@ig.com.br
0000-0002-6925-4346

Correspondence
Esther Angélica Luiz Ferreira – Universidade Federal de São Carlos. Rod. Washington Luiz, 310, km 235 CEP 13565-905. São Carlos/SP, Brasil.

Participation of the authors
All authors participated in the review, writing, analysis of the article, and the approval of the final version.

Research