



Barriers to help-seeking for deliberate self-harm: construction and validation of a questionnaire for Portuguese adolescents and young adults

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Abstract

Objective Deliberate self-harm (DSH) is a prevalent and significant public health concern. However, help-seeking remains notably low, and there is no previously published work providing a validated measurement to address the barriers to help-seeking for DSH. This study developed and validated the Questionnaire of Barriers to Help-seeking for Deliberate Self-harm (QBH-DSH), an instrument designed to measure perceived barriers to help-seeking among adolescents and young adults with a lifetime history of DSH. **Methods** The QBH-DSH was developed by adapting items from the Barriers to Help-seeking Scale (BHSS, Mansfield et al., 2005) and incorporating insights from interviews with a clinical sample of adolescents with a history of these behaviors and from Portuguese research on this topic. **Results** An initial 29-item version of the questionnaire was reduced to a 20-item scale with a four-factor structure through an exploratory and a confirmatory factor analysis. **Conclusions** The scale demonstrated good model fit and reliability, providing a foundation for targeted prevention and intervention strategies focused on promoting help-seeking.

Keywords Self-injurious behaviors · Suicide · Adolescence · Help-seeking · Deliberate self-harm

Introduction

Deliberate self-harm (DSH) rates have risen in adolescence over the last decades (Cox et al., 2024; Hawton et al., 2012). In Portugal, its lifetime prevalence among adolescents ranges from 33.9% to 50.9% in community

samples (Gouveia-Pereira et al., 2022; Fuschini et al., 2024b) and from 49% to 84% in clinical samples (Duarte et al., 2020; Guerreiro et al., 2009), in agreement with international prevalences (Farkas et al., 2024). DSH encompasses non-fatal, self-directed, intentional, and self-aggressive behaviors, irrespective of whether there is suicidal intent, and includes behaviors such as cutting, biting, and burning, among others (Duarte et al., 2019; Gouveia-Pereira et al., 2022; Madge et al., 2008). Regarding known predictors of these behaviors, a robust body of literature has shown that depressive symptoms, having a history of sexual or physical abuse, adverse childhood experiences, family history of suicidal behaviors, and family conflicts, amongst others, predict DSH in adolescents and young adults (Hawton et al., 2012; O'Brien et al., 2021; Plener et al., 2015).

These behaviors have long-term effects on one's quality of life and personal and social abilities (Cox et al., 2024) and might constitute an entry point to a wider spectrum of suicidal thoughts and behaviors (STBs). Research has shown that DSH is the most important predictor of completed suicide (Grandclerc et al., 2016; Muehlenkamp &

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Gutierrez, 2007). Therefore, adolescents with DSH must find help early to prevent suicide risk.

Despite the urgency of early intervention, many adolescents do not seek help when they need it. Help-seeking refers to the actions one takes to find alternative ways to cope with specific challenges and to address personal, emotional, psychological, or healthcare needs. It includes informal help-seeking, i.e., the act of seeking help from family or friends, and formal help-seeking, which involves reaching out to qualified professionals (e.g., psychologists, family doctors). On the other hand, help-negation consists of avoiding or withdrawing from specific types of support (Hasking et al., 2015; Rickwood et al., 2005).

Previous research has shown that only a minority of youth with DSH seek help for their behaviors (Cox et al., 2024; Michelmores & Hindley, 2012; Rowe et al., 2014; Salvador et al., 2023). International systematic reviews conducted by Cox et al. (2024) and Rowe et al. (2014) have highlighted different common reported barriers to help-seeking for DSH among young people. These include being ashamed of presenting DSH, believing they have the capacity to manage and stop DSH on their own, fearing being a burden or worrying others, fearing being stigmatized, not knowing where to turn for support, and being concerned that others would disclose their behaviors to further people.

Regarding the national context, as far as we know, there is only one published Portuguese study that explored young adults' motives for seeking/not seeking help for DSH (Salvador et al., 2023). This research consisted of two separate studies, both using self-reported online protocols with a combination of closed and open-ended questions. Study 1 aimed to gain understanding on the barriers and facilitators to help-seeking for DSH amongst young people aged between 18 and 25 years old, while Study 2 focused on understanding their expectations regarding help sources (Study 2) (Salvador et al., 2023). The authors identified several different barriers to help-seeking, including devaluation of the severity of the behaviors; shame; fear of the consequences; fear of disappointing, hurting, or worrying other people, amongst others, which is consistent with the findings from international studies (Cox et al., 2024; Edwards et al., 2021; Rosenrot & Lewis, 2020; Rowe et al., 2014) and are in line with the Theory of Planned Behavior (TPB, Ajzen, 1991).

The TPB posits that behavioral intentions and, consequently, the behavior itself, are influenced by the attitudes towards the behavior, subjective norms (i.e., perceived social pressures from relevant others), and perceived behavioral control (i.e., perceiving that one has the necessary resources, abilities and opportunities to perform the behavior) (Adams et al., 2022; Ajzen, 1991; Mo & Mak, 2009). Past studies have given support to the utility of applying TPB in the study and comprehension of help-seeking for

mental health problems (Adams et al., 2022; Mo & Mak, 2009). Indeed, it is possible that, for instance, minimizing the severity of DSH behaviors (attitudes), fearing disappointing others (subjective norms), and lacking knowledge of available services or fearing the consequences (perceived control) are barriers that reduce the intention and the action of seeking help for DSH.

Due to this topic's novelty, further exploration is needed to understand why some adolescents seek help for their DSH behaviors while others do not. Several international measures have been developed to assess help-seeking for general mental health problems in adolescence (Divin et al., 2018). For example, the Barriers to Adolescent Help Scale (BASH, Kuhl et al., 1997) and its brief version (BASH-B; Vogel et al., 2006) have been used to identify general barriers (e.g., such as self-sufficiency and family sufficient to help). Furthermore, the Self-Stigma of Seeking Help scale (SSOSH; Vogel et al., 2006) has provided further understanding into how individuals might avoid seeking help to maintain autonomy and self-worth, encompassing items pertaining to self-stigma. Likewise, the Perceived Barriers to Psychotherapy scale (Mohr et al., 2010) has also contributed to gaining knowledge of emotional and practical or access-related aspects that may affect one's ability or willingness to seek psychological help, such as the cost of psychotherapy and time constraints. However, as far as we know, there are no psychological assessment tools that specifically analyze the barriers to help-seeking for DSH. Thus, the goal of this study is to construct an instrument to assess the barriers to help-seeking for DSH in Portuguese adolescents and young adults, as well as analyze its psychometric properties. The development of this measurement will be informed by the TPB (Ajzen, 1991), and its scope is specific to DSH and to the barriers to seeking help among adolescents with a lifetime history of these behaviors. Indeed, our questionnaire differentiates itself from previous measures because it is DSH-specific and it considers the process of asking for help from both formal and informal sources, while other measures, such as BASH (Kuhl et al., 1997) and its shortened version, BASH-B (Vogel et al., 2006), focus on mental health problems in general, target a more broader population of adolescents, and only take into account seeking help from formal sources. Previous studies have highlighted that it is important to distinguish between the factors that affect help-seeking for general mental health concerns and those specific to DSH, as those sometimes differ (Divin et al., 2018).

Another limitation to the current knowledge refers to the conceptualization of help-seeking behaviors itself, where most studies narrow their focus on the request for help at a single point in time, not accounting for the non-linear and dynamic nature of this phenomenon (Cox et al., 2024), that is, the fact that the process of help-seeking can vary across

time and circumstances, being shaped by shifting internal and external factors. For example, certain barriers, such as feelings of shame or accessibility to healthcare facilities, might constitute a total impediment for an adolescent to asking for help in a specific period, while at another point in time, they may only discourage them or complicate the decision to ask for support, or not be a barrier at all. This study aims to develop and validate a new measurement tool that assesses perceived barriers to help-seeking for DSH among Portuguese adolescents and young adults and considers the dynamic and context-dependent nature of this phenomenon.

Exploratory factor analysis

Method

Questionnaire development

The Questionnaire of Barriers to Help-seeking for DSH comprises items from three different sources: (a) the translation and adaptation of the items from The Barriers to Help-Seeking Scale (BHSS) (Mansfield et al., 2005); (b) items that resulted from the analysis of interviews with a clinical sample of adolescents with DSH; (c) items that were developed based on the study conducted by Salvador et al. (2023) regarding help-seeking for DSH among adolescents.

The first step in the construction of the questionnaire was the translation and adaptation of items from the BHSS (Mansfield et al., 2005), a scale that was designed to evaluate reasons men identify for not seeking professional help for mental and physical health problems. Although, to our knowledge, the BHSS has not been previously used to predict DSH, we selected this scale since it has been identified as an applicable and valid mental health help-seeking measure to use with adolescent populations in a systematic review conducted by Divin et al. (2018).

The BHSS comprises 31 items, which are organized in five subscales, namely *Need of Control and Self-reliance*; *Minimizing Problems and Resignation*; *Concrete Barriers and Distrust of Caregivers*; *Concerns about Privacy*; and *Concerns about Emotional Control*. Overall, the BHSS has shown good psychometric properties, with a very good internal consistency [total values of Cronbach's alphas of 0.95 and 0.94 for the two studies conducted by Mansfield et al. (2005), and average subscale alphas ranging from 0.75 to 0.93].

The translation and back-translation of this instrument's items were independently conducted by three Portuguese psychologists and researchers proficient in English. Afterwards, the three versions were compared with each other and with the original scale, and the items with the greatest similarity were chosen by the researchers. Following this

procedure, the experts reviewing the scale evaluated the items based on their theoretical relevance, clarity, and potential to capture the unique barriers to help-seeking for DSH amongst adolescents and young adults. Nine items from the original scale were removed due to insufficient alignment with these criteria, as they did not achieve consensus among the three psychologists.

The remaining 22 items were changed and adapted according to the following rationales: (1) the items should be easily comprehended by adolescents when translated to Portuguese (sample item: "I would think less of myself for needing help" was changed for "Feeling inferior for asking for help", in Portuguese *Sentir-me inferior por pedir ajuda*); (2) the verb tense and sentence structure of the items should be aligned with what we requested in the scale's short introduction and the *Likert* scale (sample item: "The problem wouldn't seem worth getting help for" was changed for "Believing that it's not worth asking for help for this problem", in Portuguese *Acreditar que não vale a pena pedir ajuda para este problema*); (3) some of the items should specifically refer to DSH (sample item: "I wouldn't want to overreact to a problem that wasn't serious" was changed for "Thinking that my behaviors are not serious enough", in Portuguese *Achar que os meus comportamentos não são graves o suficiente*); (4) The items should be adapted to the developmental and situational context of the age of adolescence (sample item: "Financial difficulties would be an obstacle to getting help" was changed to "My family not having money to pay for professional help", in Portuguese, *A minha família não ter dinheiro para pagar ajuda profissional*).

To develop the questionnaire, we have also performed a qualitative analysis of the motives for seeking or not seeking help for DSH. The clinical sample comprised 10 adolescents with a history of DSH who were being followed at an adolescent mental health service in a public hospital in the metropolitan area of Portugal.

The script of the semi-structured interview was developed following a review of the literature on the topic of help-seeking for DSH. Content analysis procedures were used, with the statements being coded and sorted into categories according to how different codes/statements were related and linked (Hsieh & Shannon, 2005). Afterwards, we compared the statements that emerged from the interview's content analysis with the original items from BHSS. Those presenting distinct contents were redesigned into new items or used to make adaptations to the existing items from BHSS so that our instrument could be framed according to the context of adolescent development and help-seeking for DSH (see Table 1).

Finally, we have also considered the study conducted by Salvador et al. (2023), in which qualitative data regarding the motives to seek or not to seek help were collected with a sample of Portuguese young adults with a history of DSH,

providing several categories related to different barriers to help-seeking. Based on this content, we revised some items from BHSS and provided new items that complemented the different types of barriers from BHSS in a manner similar to the approach used in analyzing the interviews.

By integrating these three complementary approaches, we intend to create an applicable, robust, and psychometrically sound assessment tool. Indeed, the already existing

instrument (BHSS, Mansfield et al., 2005), which is considered suitable for adolescent populations (Divin et al., 2018), provides an well-established framework of common barriers and a solid foundation for developing a new measurement; Furthermore, by encompassing items derived from qualitative interviews with Portuguese adolescents with a lifetime history of DSH, we assure that our assessment tool reflects the lived realities of these adolescents, also bringing novelty

Table 1 Structure of the questionnaire of barriers to help-seeking for deliberate self-harm (QBH-DSH)

QBH-DSH items
1. Feeling inferior for asking for help [<i>Sentir-me inferior por pedir ajuda</i>]
2. Feeling that no one knows my problems better than I do [<i>Sentir que ninguém conhece melhor os meus problemas do que eu</i>]
3. Feeling better about myself knowing that I don't need help [<i>Sentir-me melhor comigo próprio sabendo que não preciso de ajuda</i>]
4. Disliking feeling controlled by other people [<i>Não gostar de me sentir controlado por outras pessoas</i>]
5. Believing that asking for help is a sign of weakness [<i>Acreditar que pedir ajuda é sinal de fraqueza</i>]
6. Liking to make my own decisions without being influenced by others [<i>Gostar de tomar as minhas próprias decisões sem ser influenciado pelos outros</i>]
7. Liking to feel that I control my life has made it difficult or still makes it difficult for me to seek help [<i>Gostar de sentir que controlo a minha vida já dificultou ou ainda faz com que não queira pedir ajuda</i>]
8. Feeling that asking for help is like giving control of my life to someone else [<i>Sentir que pedir ajuda é como dar o controlo da minha vida a outra pessoa</i>]
9. Not wanting to appear weaker than my friends [<i>Não querer parecer mais fraco do que os meus amigos</i>]
10. Believing that it's not worth asking for help for this problem [<i>Acreditar que não vale a pena pedir ajuda para este problema</i>]
11. Believing that these behaviors will resolve over time [<i>Acreditar que estes comportamentos resolvem-se com o tempo</i>]
12. Thinking that my behaviors are not serious enough [<i>Achar que os meus comportamentos não são graves o suficiente</i>]
13. Preferring to wait until I'm sure my behaviors are a serious problem [<i>Preferir esperar até ter a certeza de que os meus comportamentos são um problema sério</i>]
14. Fear of worrying my family has made it difficult or still makes it difficult for me to seek help [<i>Ter medo de preocupar a minha família já dificultou ou ainda faz com que não queira pedir ajuda</i>]
15. Fear of disappointing the people I care about [<i>Ter medo de desiludir as pessoas de quem gosto</i>]
16. Fearing that my family will be angry with me [<i>Ter receio que a minha família se zangue comigo</i>]
17. Feeling that my family does not support me [<i>Sentir que a minha família não me apoia</i>]
18. Believing that no one can help me [<i>Acreditar que ninguém me consegue ajudar</i>]
19. Fearing that others will feel sorry for me [<i>Ter receio que sintam pena de mim</i>]
20. Feeling that my family devalues what I feel [<i>Sentir que a minha família desvaloriza o que sinto</i>]
21. Not trusting doctors and other health professionals (e.g., psychologist, family doctor) [<i>Não confiar em médicos e outros profissionais de saúde</i>]
22. Not knowing what kind of help is available to me [<i>Não saber que tipo de ajuda está disponível para mim</i>]
23. My family not having the money to pay for professional help [<i>A minha família não ter dinheiro para pagar ajuda profissional</i>]
24. Having difficulties arranging transportation or getting to appointments [<i>Dificuldades em arranjar transportes ou deslocação para consultas</i>]
25. Not wanting other people to know about my problems [<i>Não querer que outras pessoas saibam dos meus problemas</i>]
26. Feeling ashamed to ask for help [<i>Sentir vergonha de pedir ajuda</i>]
27. Not wanting anyone to see my marks/scars [<i>Não querer que alguém veja as minhas marcas/cicatrizes</i>]
28. Not liking to talk about my feelings [<i>Não gostar de falar sobre os meus sentimentos</i>]
29. Preferring not to show people what I'm feeling has made it difficult or still makes it difficult for me to seek help [<i>Preferir não mostrar às pessoas o que estou a sentir já dificultou ou ainda faz com que não queira pedir ajuda</i>]

to existing scales; Finally, additional empirical grounding is offered by including insights gained from recent national research (Salvador et al., 2023), also contributing to expand the questionnaire's item pool.

Table 1 presents the initial structure of the Questionnaire of Barriers to Help-seeking for Deliberate Self-harm (QBH-DSH) with all the items that were derived from the adaptation of BHSS (Mansfield et al., 2005), the analysis of semi-structured interviews, and the analysis based on the study conducted by Salvador et al. (2023)

Participants

A total of 901 students were recruited through seven public and professional schools and one private university across the Lisbon metropolitan area and the Alentejo region of Portugal, using convenience sampling methods. From this total, nine adolescents did not consent to participate, 111 did not complete the protocol, 17 presented invalid responses (i.e., nonsensical or patterned responses), and one did not meet the inclusion criteria (being aged from 12 to 21 years old). Thus, we have excluded a total of 138 participants, and our final sample size comprised 763 adolescents and young adults (52.2% female, 47.2% male, 0.6 non-binary; $M_{\text{age}} = 16.56$, $SD = 1.96$), with most of them having a lifetime history of DSH [$n = 438$, 57.4%, with a range from one to 12 methods ($M = 3.7$, $SD = 2.69$)]. More specifically, 24.1% of our participants have exclusively engaged in *Mild Severity DSH* (e.g., biting, pulling hair, banging or hitting self), 5% in *High Severity DSH* (e.g., cutting, burning, attempting suicide), and 27.4% have a lifetime history of practicing both *Mild and High Severity DSH* (e.g., hitting self and also cutting), considering the categorization of DSH according to its severity as proposed by Duarte et al. (2019).

For the purpose of the present study, we have only included the participants who presented a history of DSH ($n = 438$), as we intended to construct and validate a questionnaire regarding the barriers to help-seeking for DSH only for adolescents with a history of these behaviors. Furthermore, data were randomly split into two groups, with the Exploratory Factor Analysis (EFA) being performed using the first split-half sample and the Confirmatory Factor Analysis (CFA) being conducted using the second split-half sample's data file. This randomization process was carried out in SPSS by using the "Select Cases" function. A random sample of approximately 50% of the cases was selected for the first group (i.e., sample used for performing EFA), and the remaining cases were assigned to the second group (i.e., sample used for undertaking the CFA).

Of the 219 participants corresponding to the first split-half sample, 120 (54.8%) were female, 97 (44.3%) were male, and two (0.9%) were non-binary, with the majority

being Portuguese ($n = 204$, 93.2%). The participants studied from the 6th grade to the first year of bachelor's, and their ages ranged from 12 to 21 ($M_{\text{age}} = 16.65$, $SD = 1.93$),

Measures

Inventory of deliberate self-harm behaviors The Inventory of Deliberate Self-harm Behaviors (Duarte et al., 2019) is a self-report instrument validated for use with Portuguese adolescents. This assessment tool measures the lifetime frequency of 14 DSH behaviors (e.g., "I burned myself") with response options of "No", "Yes – 1 Time", "Yes, 2–10 times", "Yes, More than 10 Times", and it has demonstrated acceptable psychometric properties (Duarte et al., 2019). For the present study, a dichotomous variable was created, coding the absence of a lifetime history of DSH as "0" and the presence of a history of DSH as "1".

Questionnaire of barriers to help-seeking for deliberate self-harm The QBH-DSH was organized into two sections. The first section included the questions, "When a young person has these behaviors, they may or may not seek help. Have you sought help?" (Response options: "Yes", "No") and "If yes, to whom?" (Response options: "Father"; "Mother"; "Friends"; "Health Professionals"; "Teachers"; "Internet/Social Media"; "Others. Who?" - participants could select more than one option). The second section included a short introduction asking the respondents to consider the reasons that led them not to seek help, in case they have not sought help, and to think about the reasons that made it difficult to seek help, if they have already sought help. The participants answered to 29 items on a five-point rating scale (1 = *This did not hinder, discourage, or prevent me at all*; 2 = *This hindered, discouraged, or prevented me a little*; 3 = *This hindered, discouraged, or prevented me moderately*; 4 = *This hindered, discouraged, or prevented me significantly*; 5 = *This hindered, discouraged, or prevented me a lot*).

Socio-demographic questionnaire The socio-demographic questionnaire included questions concerning gender, age, nationality, school year, and other pertinent sociodemographic information.

Procedures

Prior to data collection, we started by obtaining authorization from the authors who developed the BHSS (Mansfield et al., 2005) to use, translate, and adapt items of their scale. Afterwards, we did a pre-test with a group of adolescents who were asked to complete the questionnaire and report any uncertainties to ensure the instrument was easy to understand.

After the approval of the Ispa - Instituto Universitário Ethics Committee in Lisbon, Portugal (Registry number: I-081-5-22), multiple schools were contacted and informed about the goals of our study. Several classes from the schools that agreed to take part in the study were selected by convenience, and dates for data collection were scheduled. Consent forms were initially sent home as letters for legal guardians to sign, followed by students providing their signatures as well. The respondents were informed about the voluntary nature of their participation, the anonymity and confidentiality of the gathered data, their right to withdraw at any point without providing a reason or facing negative consequences, and the contextualization of the investigation. Questionnaires had a duration of approximately 30 min and were filled out via a link provided by the researcher present during school hours. Given the sensitive nature of the topic, a final section was included in the survey listing several Portuguese helplines and support services related to DSH and suicide.

Data analysis

All the statistical analyses were performed using SPSS v29 software and Amos Version 28 (IBM SPSS, Chicago, IL). Considering the characteristics of our data and the conceptual nature of the construct under study, i.e., the barriers to help-seeking for DSH, the EFA was conducted using principal axis factoring and Promax with Kaiser normalization rotation. A Scree plot was also developed to determine the number of factors. Principal axis factory was selected since we intended to uncover latent constructs that could explain the variance shared between items, while also considering potential measurement error. This approach is adequate since the barriers to help-seeking for DSH are conceptualized as both underlying and correlated psychological factors. Regarding the Promax rotation, we have selected this oblique method because it allows factors to correlate. Indeed, theoretical expectations suggest that distinct types of barriers are likely interrelated within this population. Using Kaiser normalization allows the improvement of interpretability as it equalizes the variance of factor loadings before rotation. Items with factor coefficients under 0.40 were removed, as this threshold is widely accepted as the standard cutoff for pattern coefficients (e.g., Comrey & Lee, 1992).

Results

For the first EFA, all 29 items were included. The analysis provided a four-factor solution with eigenvalues greater than 1.00 explaining 66.30% of variance. From this analysis,

items 1, 18, 21, and 27 were excluded for low coefficients (<0.40). A second EFA was conducted and presented a four-factor solution with eigenvalues greater than 1.00, explaining 69.26% of the variance. From this analysis, item 22 was removed for loading lower than 0.40; and items 2, 14, 15, and 19 were excluded for not being conceptually related to the factors in which they loaded. Specifically, item 2 (“Feeling that no one knows my problems better than I do”) was expected to load on the Need of Control and Autonomy factor (factor 2) but instead loaded on the Minimizing DSH and Emotional Containment factor (factor 1). Items 14 (“Being afraid of worrying my family has made it hard or still makes me not want to seek help”) and 15 (“Being afraid of disappointing the people I care about”) were anticipated to load on family-related barriers (factor 3) but loaded instead on factor 1 (Minimizing DSH and Emotional Containment). Finally, item 19 (“Being afraid that others will feel sorry for me”) loaded on the family barriers factor but was removed to maintain factor 3’s conceptual purity, focusing only on family-related items. A new EFA was performed with the remaining 20 items and yielded a satisfactory four-factor solution ($KMO=0.93$; $\chi^2=3306.73$; $p<.001$), based on eigenvalues greater than 1.00 (See Table 2), accounting for 71.8% of the variance, and in agreement with the scree plot inspections (see Supplementary Material 1). It is important to note that all the EFAs were conducted using the first half of the split data, that is, the exact same subsample of

Table 2 Exploratory factor analysis

Items	Factor 1	Factor 2	Factor 3	Factor 4
Item 10	0.845			
Item 11	0.750			
Item 12	0.807			
Item 13	0.693			
Item 25	0.679			
Item 26	0.594			
Item 28	0.820			
Item 29	0.665			
Item 3		0.460		
Item 4		0.539		
Item 5		0.632		
Item 6		0.641		
Item 7		0.818		
Item 8		1.003		
Item 9		0.586		
Item 16			0.491	
Item 17			0.841	
Item 20			0.885	
Item 23				0.821
Item 24				0.783

Exploratory factor analysis (principal axis factoring with Promax rotations). Coefficients >0.40 . Factor 1 - Minimizing DSH and Emotional Containment; Factor 2 - Need for Control and Autonomy; Factor 3 - Family Barriers; Factor 4 - Difficulties in Accessing Healthcare

participants, with the same individuals responding to all items. Sensitivity analyses were conducted with the full sample, applying the final model fixed to a four-factor solution. The analysis reproduced the same factorial structure and demonstrated acceptable psychometric properties (See Supplementary Material 2).

Internal consistency

Regarding internal consistency, the overall scale had a Cronbach's alpha of 0.95. With respect to the subscales, Minimizing DSH and Emotional Containment (Factor 1) showed very good internal consistency ($\alpha=0.94$), while Need for Control and Autonomy (Factor 2) ($\alpha=0.90$), Family Barriers (Factor 3) ($\alpha=0.87$), and Difficulties in Accessing Healthcare (Factor 4) ($\alpha=0.80$) had acceptable scores of internal consistencies.

Confirmatory factor analysis

Method

Participants

To conduct the confirmatory factor analysis, we used the second data file ($n=219$). From this total of 219 participants, 135 (61.6%) were female, 82 (37.4%) were male, and two (0.9%) were non-binary, mostly Portuguese ($n=204$,

93.2%), studying from the 7th grade to the first year of Bachelor, and their ages ranged from 12 to 21 years old ($M_{age} = 16.54$, $SD=1.80$).

Measures

The measures used for the Confirmatory Factor Analysis (CFA), comprised a socio-demographic questionnaire, the Inventory of Deliberate Self-harm (Duarte et al., 2019), and the Questionnaire of Barriers to Help-seeking for Deliberate Self-harm, which were previously described in the EFA section.

Data analysis

In carrying out the CFA, we started by analyzing the missing values of the 20 items of interest, i.e., the QBH-DSH's reduced version that resulted from EFA. This analysis showed a total of seven missing values, corresponding to a mean of 0.35 missing values per item. A Little's MCAR test was performed, revealing that the missing values were not completely at random ($\chi^2_{(132)}=172.45$, $p<.01$). Hence, we could not estimate the missing values and decided to remove the seven participants. Descriptive analyses of each QBH-DSH item are presented in Table 3.

Regarding the items, our data did not fulfill the multivariate normality assumption (KuMult=158.36). However, when examining these items individually, we see that they fell within Kline's (2005) parameters (skewness range

Table 3 Descriptive analyses of the questionnaire of barriers to help-seeking for deliberate self-harm (QBH-DSH) Items

QBH-DSH items	Descriptives						
	<i>n</i>	<i>M</i>	<i>SD</i>	<i>S</i>	<i>SE S</i>	<i>K</i>	<i>SE K</i>
Item 3	212	2.48	1.52	0.52	0.17	-1.24	0.33
Item 4	212	2.75	1.61	0.22	0.17	-1.55	0.33
Item 5	212	2.32	1.54	0.65	0.17	-1.18	0.33
Item 6	212	2.41	1.48	0.54	0.17	-1.18	0.33
Item 7	212	2.28	1.46	0.73	0.17	-0.93	0.33
Item 8	212	2.11	1.44	0.91	0.17	-0.66	0.33
Item 9	212	2.33	1.46	0.63	0.17	-1.04	0.33
Item 10	212	2.58	1.59	0.39	0.17	-1.44	0.33
Item 11	212	2.82	1.56	0.13	0.17	-1.50	0.33
Item 12	212	2.84	1.64	0.12	0.17	-1.62	0.33
Item 13	212	2.79	1.67	0.19	0.17	-1.64	0.33
Item 16	212	2.89	1.69	0.08	0.17	-1.70	0.33
Item 17	212	2.35	1.55	0.68	0.17	-1.10	0.33
Item 20	212	2.52	1.58	0.46	0.17	-1.35	0.33
Item 23	212	1.98	1.32	1.17	0.17	0.12	0.33
Item 24	212	1.73	1.19	1.58	0.17	1.32	0.33
Item 25	212	2.70	1.61	0.31	0.17	-1.53	0.33
Item 26	212	2.44	1.58	0.53	0.17	-1.34	0.33
Item 28	212	2.91	1.61	0.02	0.17	-1.61	0.33
Item 29	212	2.78	1.64	0.19	0.17	-1.60	0.33

S skewness, *SE S* standard error of skewness, *K* kurtosis, *SE K* standard error of kurtosis

from 0.02 to 1.58; kurtosis range from -1.70 to 1.32), showing that the normality assumption was not grossly violated. Therefore, we proceeded with the CFA with the maximum likelihood estimation. Model fit was addressed by the Relative Chi-Square ($\chi^2/df < 5$), Comparative Fit Index (CFI > 0.90), Parsimony Comparative Fit Index (PCFI > 0.60) Goodness-of-Fit Index (GFI > 0.80), Parsimony Goodness-of-Fit Index (PGFI > 0.60), the Root Mean Square Error of Approximation (RMSEA < 0.10), and the Standardized Root Mean Square Residual (SRMR < 0.08) (Arbuckle, 2013, 2019; Hu & Bentler, 1999; Maroco, 2010). When the model fit presented unsatisfactory results on these indicators, we conducted a Modification Indices (MI) analysis, which is based on the Lagrange multiplier. This analysis is able to determine how much the chi-square value could decrease if specific parameter constraints were excluded (MacCallum et al., 1992). Reliability estimates were obtained from the latent variables identified in the CFA. Composite reliability (CR) values were computed using an online calculator, following the recommendations proposed by Weiss (2011). We have considered CR values of 0.7 or higher as indicative of good reliability, as suggested by Hair et al. (2009).

Results

Concerning reliability analysis, results revealed that all the barriers proved a good to very good internal consistency, with Cronbach's alphas ranging from 0.80 to 0.93 (see Table 4 for detailed information).

Importantly, *Minimization of Deliberate Self-harm and Emotional Containment* appears to be the most important barrier to help-seeking for DSH among adolescents and young adults, as both in EFA and CFA the mean scores of this barrier (EFA: $M = 2.91$, $SD = 1.35$; CFA: $M = 2.74$, $SD = 1.34$) are higher than those of the other barriers (Table 4).

We performed a CFA to test the factorial model proposed in the EFA. The results indicated a generally acceptable model fit, except for the RMSEA equal to 0.103, which was greater than the threshold of < 0.10 . Following an analysis of the MI, one pair of items was covaried, namely item 12 (i.e., "Thinking that my behaviors are not serious enough") and item 13 (i.e., "Preferring to wait until I'm sure my behaviors are a serious problem") (MI = 45). This pair of items integrates the same factor and addresses very similar constructs regarding the seriousness of DSH. Hence, we consider this modification as theoretically justifiable. Although our results indicated a modest GFI, some authors argue that values above 0.80 can be considered acceptable (e.g., Maroco, 2010). The final solution displayed in Fig. 1 presented

Table 4 Internal consistency and correlation matrix between the barriers in both EFA and CFA

	MDSHEC	NCA	FB	DAH
MDSHEC	-	0.75***	0.75***	0.47***
NCA	0.76***	-	0.64***	0.43***
FB	0.71***	0.63***	-	0.48***
DAH	0.46***	0.56***	0.40***	-
Study 1				
<i>M</i>	2.91	2.50	2.72	1.79
<i>SD</i>	1.35	1.19	1.46	1.16
α	0.94	0.90	0.87	0.80
Study 2				
<i>M</i>	2.74	2.39	2.61	1.87
<i>SD</i>	1.34	1.24	1.47	1.17
α	0.93	0.92	0.89	0.80

Below diagonal Study 1, *Above diagonal* Study 2. *MDSHEC* Minimization of Deliberate Self-harm and Emotional Containment, *NCA* Need of Control and Autonomy, *FB* Family Barriers, *DAH* Difficulties in Accessing Healthcare

*** $p < .001$

an acceptable model fit ($\chi^2/df = 2.93$, CFI = 0.90, PCFI = 0.78, GFI = 0.81, PGFI = 0.63, RMSEA = 0.096, SRMR = 0.058). Sensitivity analyses ran with the full sample also showed an acceptable model fit ($\chi^2/df = 4.32$, CFI = 0.92, PCFI = 0.79, GFI = 0.86, PGFI = 0.66, RMSEA = 0.088, SRMR = 0.050) (for detailed information, see Supplementary Material 3).

Composite reliability was investigated for each factor from the split-half sample used for the CFA as well as from the full sample. All the factors showed good reliability (CR > 0.7). Specifically, Minimizing DSH and Emotional Containment subscale (Factor 1) had a CR score of 0.94 for both the split-half and the full sample; Need for Control and Autonomy subscale (Factor 2) showed a CR of 0.92 for the split-half sample and 0.91 for the full sample; Family Barriers subscale (Factor 3) had a CR of 0.90 for the split-half sample and 0.89 for the whole sample; and Difficulties in Accessing Healthcare subscale (Factor 4) proved a CR value of 0.82 for the split-half sample and 0.90 for the full sample. Noteworthy, Average Variance Extracted (AVE) was not computed in this study, and reliability was supported by CR and α .

Discussion

The present study developed and examined the underlying structure of QBH-DSH, an assessment tool created to measure the barriers to help-seeking for DSH among adolescents and young adults with a history of these behaviors. We started by adapting items from BHSS (Mansfield et al., 2005) to DSH, since this instrument has been identified as an adequate help-seeking measure used in adolescent

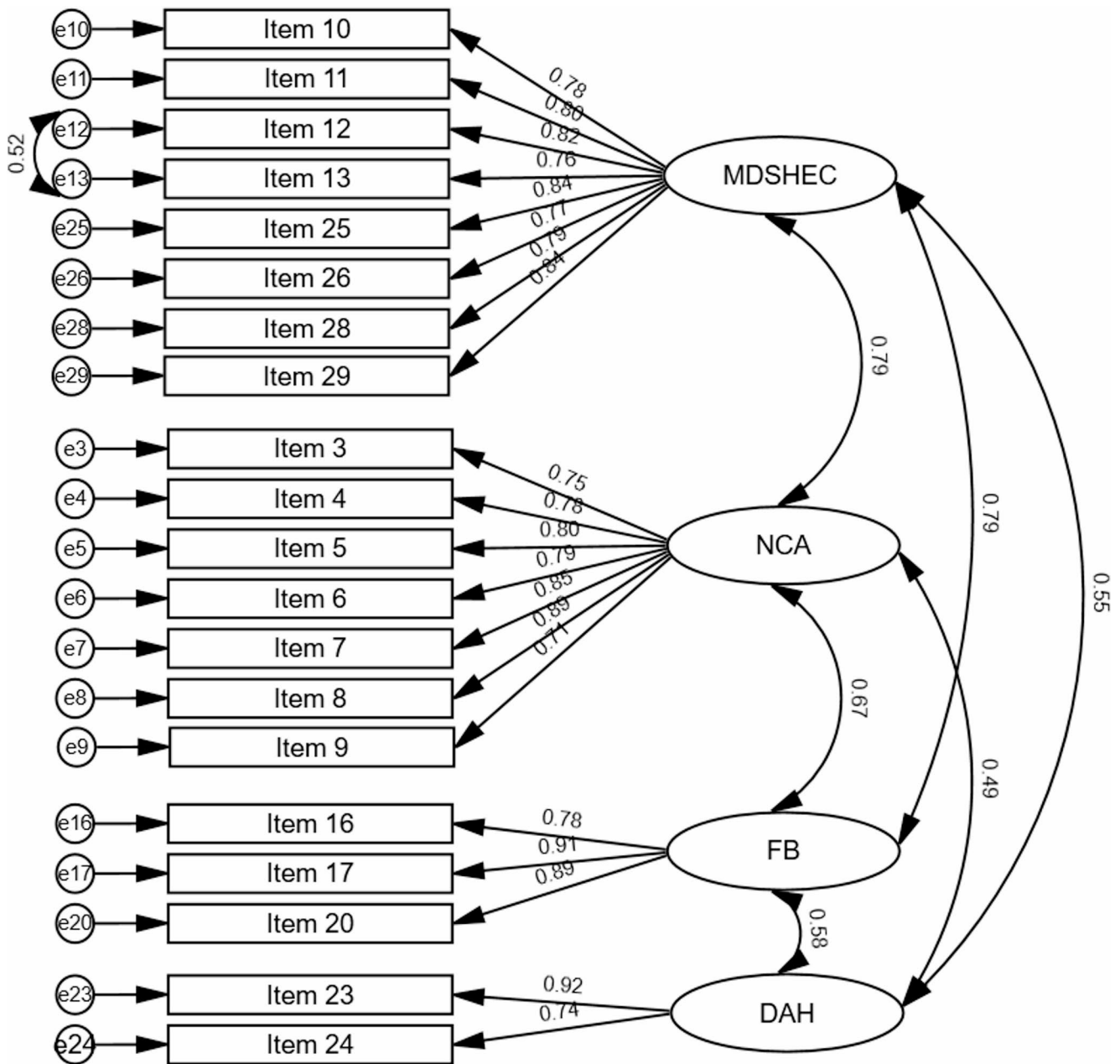


Fig. 1 Confirmatory factor analysis of the model

research (Divin et al., 2018). However, we aimed to tailor it specifically to address the contexts of DSH and adolescence, as it is known that the process and difficulties related to requesting help for DSH sometimes differ from those more broadly associated with mental health problems (Cox et al., 2024).

To complement and better adapt the BHSS items as well as to devise new items, we proceeded with an additional qualitative study through the analysis of semi-structured interviews with a clinical sample of adolescents with a history of DSH. To achieve the same intent, we have also analyzed the only published Portuguese study (Salvador

et al., 2023) on help-seeking for these behaviors amongst young adults. From these three sources, we developed a first version of QBH-DSH consisting of 29 items addressing different barriers to help-seeking for DSH, from which 7 items were solely derived from the analysis of the semi-structured interviews and the study conducted by Salvador et al. (2023).

Firstly, the performed EFAs enabled us to reduce the scale to 20 items, providing a four-factor solution in which one of the composing factors was new, that is, it was not present in the Mansfield et al. (2005) scale, namely *Family Barriers*. Both two items we have included are *Privacy* (items 25 and

26 of our questionnaire) and *Emotional Control* (items 28 and 29 of our questionnaire) factors of the BHSS loaded together with the items from the *Minimizing Problem and Resignation* factor, which we renamed to *Minimizing Problem and Emotional Containment* in our study. The internal consistency of this factor in both EFA and CFA was very good, giving support to the adequacy of having these barriers load on the same factor. The *Concrete Barriers and Distrust of Caregivers* factor of BHSS (Mansfield et al., 2005) was renamed to *Difficulties in Accessing Healthcare* in our study, since this factor was composed of only two items whose nature is better captured with this new name. Regarding *Need of Control and Self-reliance* (Mansfield et al., 2005), this subscale was renamed to *Need of Control and Autonomy* in our study.

Secondly, we performed a CFA to test the factorial structure of the resulting scale from the EFA. This analysis proved a good model fit with a four-factor structure, in which each dimension, as well as the whole scale, revealed good reliability.

Notably, our findings reveal that the most important barrier to help-seeking for DSH is *Minimizing DSH and Emotional Containment*, as this factor presented the highest mean score. The nature of this dimension relates to devaluing DSH, being ashamed of the behaviors, wanting to keep DSH a secret from others, and not wanting to either speak about one's feelings or express them to others. Past studies on the barriers to help-seeking for DSH have also highlighted this barrier, emphasizing lack of emotional competence (i.e., inability to identify, understand, interpret, and share emotional experiences, as the individual perceives that he does not have the language and skills to do so) (Rickwood et al., 2005); devaluation of the behaviors; confidentiality; and shame (Salvador et al., 2023) as common reported barriers among young people.

Taken together, research has proven that DSH is one of the strongest predictors of suicide risk and completed suicide (Fuschini et al., 2024a; Grandelerc et al., 2016; Muehlenkamp & Gutierrez, 2007), as well as that most adolescents and young adults with these behaviors do not seek help. Delayed mental health treatment is associated with greater symptom severity and lethality (Lustig et al., 2021; Nery-Fernandes et al., 2012). Similarly, taking too much time or failing to reach out for help might lead young people with a history of DSH to further advance in the suicidal risk continuum. For these reasons, there is an urgent need to gain knowledge on what hinders, discourages, or prevents Portuguese adolescents and young adults from asking for help for their self-harming behaviors.

Our results showed that 57.4% of our community sample presents a lifetime history of DSH, revealing a higher prevalence compared to community samples of past national studies using ICAL (e.g., 40.8%, Duarte et al., 2020; 50.3%,

Fuschini et al., 2024a; 50.9%, Fuschini et al., 2024b; 33.9%, Gouveia-Pereira et al., 2022). Furthermore, 27.4% of our community sample has a lifetime history of practicing both *Mild and High Severity* DSH methods. These findings reflect a major concern, revealing the high and growing prevalence of DSH in Portuguese adolescents and young adults, and underscore the critical need for targeted interventions. As far as we know, past international and national studies have not yet developed help-seeking measures specifically directed at DSH to use with this population.

By exploring youths' perceived barriers to help-seeking for DSH and providing an assessment tool of these barriers, this work will be valuable for designing effective prevention and intervention strategies aimed at encouraging help-seeking and reducing suicide risk in adolescence and young adulthood. It is urgent that mental health providers, teachers, educators, and policymakers understand the core barriers to help-seeking for DSH within the Portuguese cultural landscape to develop targeted multisystemic interventions. For example, this study showed that national adolescents and young adults tend to resist help-seeking due to devaluing the seriousness of the behaviors and containing their emotions. Thus, it is imperative to provide psychoeducative initiatives that address the behaviors' severity and present help-seeking as a sign of strength, and to offer safe outlets where emotional expression is encouraged.

In conclusion, the QBH-DSH is an applicable and useful tool in clinical settings to identify and explore multifaceted factors that lead youth to delay seeking help or not seek it at all. Besides, the novel dimension of barriers we found in this study, namely, *Family Barriers*, may guide mental health professionals to subsequently engage families in systemic interventions and psychoeducational programs. Furthermore, schools also offer a privileged setting to apply this instrument, which can be used by educational psychologists as part of a routine psychological assessment administered to entire classrooms to identify different types of barriers to help-seeking within their students. By doing so, confidential referral pathways that are attentive to these adolescents' needs could be better established.

Our findings assure that QBH-DSH is an appropriate and valid assessment tool to measure the barriers to help-seeking for DSH among adolescents and young adults, at least in the national context. The integrative approach used to develop the questionnaire ensured the novelty of the scale, as it encompassed the theoretical foundation of an established measurement (BHSS) and the underlying conceptual model of the TPB (Ajzen, 1991), qualitative data from youth with lived experience of DSH, and considered recent national research. As such, the questionnaire's items are sensitive to capturing the contextual and cultural nuances of the realities

of Portuguese adolescents, guaranteeing the practical utility of the scale. Indeed, the use of this instrument might contribute to informing evidence-based practices and to assist policymakers in developing public health campaigns focused, for instance, on improving access to healthcare services or on addressing themes such as the severity of these behaviors and shame.

Limitations and directions for future research

The present study is not free from limitations. Firstly, this research relied on randomized split-half samples to conduct the EFA and CFA; thus, the resulting groups probably represent the same population, being much more likely that these are more similar compared to if the groups were drawn from entirely distinct populations. Future work should endeavor to incorporate a more representative sample. Secondly, the QBH-DSH was designed in the Portuguese context, so generalizations to the findings should be made with caution. Furthermore, test-retest reliability was not addressed. We suggest that future studies validate this questionnaire in distinct and diverse cultural contexts. It would also be important that future research tests the QBH-DSH concerning its divergent and convergent validity with other variables, as well as regarding its test-retest reliability. Finally, a discrepancy in the factor loadings of items 3 and 8 within Factor 2 was notable in our results, with item 3 presenting a considerably higher loading than item 8, which might reflect differences in how strongly each item represents the underlying dimension. Thus, we recommend that subsequent research confirm the factorial structure using confirmatory factor analysis (CFA) in independent samples.

Furthermore, the data were obtained through self-report questionnaires, which might lead to social desirability and recall bias. Even though the students filled out the survey in a controlled classroom setting with the presence of the researcher, as it would have been done in a traditional paper-and-pencil administration, data were still collected through an online form, which might have introduced biases related to potential technical difficulties (e.g., slow devices and glitches) and phone distractions (e.g., receiving phone notifications) affecting their frustration levels, concentration, and the quality of responses.

The need to construct an understandable, clear, and adequate assessment tool to measure the barriers to help-seeking for DSH among adolescents and young adults turned substantially difficult to include barriers to and facilitators of help-seeking in the same instrument. Nevertheless, we recommend that further studies seek to develop and validate a scale that addresses the facilitators to help-seeking for DSH. Furthermore, several contents related to not seeking

help due to stigma appeared in the interviews that we have conducted for this study. We decided not to incorporate these contents into items for this study's questionnaire since we considered it would be better to construct a separate instrument exclusively dedicated to stigma in the context of DSH. Subsequent studies are encouraged to develop and validate this measure.

Despite limitations, the construction and validation of QBH-DSH embodies a significant advancement in assessing the barriers to help-seeking for DSH among young people, being useful in research contexts. It is also a valuable tool to guide preventative strategies and interventions with youth with a history of DSH.

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Author contributions BF: Conceptualization, Design, Methodology, Investigation, Data management, Statistical analysis, Interpretation of the data, Writing - Original Draft, Writing - Reviewing and Editing. ED: Conceptualization, Design, Methodology, Interpretation of the Data, Writing - Reviewing and Editing. HSG: Conceptualization, Design, Methodology, Statistical Analysis, Interpretation of the Data, Writing - Review and Editing. MGP: Conceptualization, Design, Methodology, Project Administration, Writing - Reviewing and Editing.

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Data availability The data that support the findings of this study are available from the corresponding author, BF, upon reasonable request.

Declarations

Ethics approval This study was performed in line with the principles of the Declaration of Helsinki. Approval was granted by the Ethics Committee of Ispa – Instituto Universitário (Registry number: I-081-5-22).

Consent to participate Informed consent was obtained from all participants.

Competing interests The authors have no relevant financial or non-financial interests to disclose.

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