A Wolf in Sheep’s Clothing: Taxometric Evidence of the Dimensional Structure of Stalking

Author Note
Abstract

Purpose: Stalking can be defined as a pattern of repeated and unwanted behaviours that cause another person to be afraid. The consequences for the victims can be severe and potentially happen over a long period of time. While stalking is considered as a taxon, empirical evidence, and an absence of pathognomonic criteria, point toward a dimensional structure.

Methods: The aim of the present study is to examine the latent structure of stalking using taxometric analyses on the Severity of Stalking Behaviours Scale. Analyses were conducted on a sample of $N = 1032$ victims’ accounts, who had contacted the National Stalking Helpline in the United Kingdom.

Findings: Taxometric analyses revealed that stalking presents a dimensional structure and no taxonic peaks emerged. Results were consistent across analyses (MAMBAC, MAXEIG and L-Mode), indicators (CCFI, Curves) and measures (Items, Factors).

Implications: A dimensional structure implies that individual variation is a matter of intensity, and the present results suggest that the conceptualization of stalking should be modified. Understanding stalking from a dimensional perspective provides support to study stalking in nonclinical populations. Scales that measure stalking should provide discrimination along the entire continuum rather than focusing on putative taxonic boundaries and arbitrary threshold.

Originality: This paper is proposing the first set of taxometric analyses on stalking. Results are providing empirical support to the idea that stalking exists on a continuum. It also strengthened the validity of previous findings in nonclinical populations and their applications all along the continuum, including with clinical populations.

Keywords: Stalking, Taxometric, Latent Structure, Dimensional Structure, Measurement, Cut-off.
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Stalking: Definition and Prevalence

Stalking can be defined as a pattern of fixated, repeated and unwanted behaviours, ranging from following, contacting, spying, to homicide, that cause a reasonable person to be afraid for his/her safety (Meloy, 1998; White et al., 2020). Stalking behaviour involves two or more incidents which the perpetrator knows, or ought to know, will cause another to feel distressed, alarmed or fear that violence will be used against them (White et al., 2020). While some of the behaviours may not be perceived as serious (e.g., browsing someone’s social media without their consent and knowledge, sending unsolicited text messages), it is the persistence and the level of intrusion by the stalker that makes the behaviour criminal (Stefanska et al., 2021b). Victims of stalking can experience a wide array of psychological, physical, social or financial costs (Chan & Sheridan, 2019; Chan et al., 2020). Given its chronic nature, it can impact the victim over a long period of time (Sheridan & Lyndon, 2012). Although the empirical scrutiny of stalking has significantly increased in the last three decades, it remains an elusive offence as it is defined by the perpetrator’s acts, which may be partly hidden, as well as by the frequency of the offending behaviours. Further adding to the heterogeneity of this offence, stalking is also defined by the victim’s perception of the behaviours, which may be subjective to some extent (James & MacKenzie, 2018). While stalking is legally and conceptually different from harassment, they can be difficult to disentangle (Chan & Sheridan, 2021). Stalking is considered as a more serious and aggressive type of crime than harassment, with elements of fixation and obsession (Police UK, 2022). As a result, the prevalence of stalking remains unclear, in part because of a lack of consensus on how to operationalize (Patton et al., 2010) and measure (Stefanska et al., 2021b) this crime.
While stalking was initially used to describe the intrusive behaviours of individuals toward celebrities (Lowney & Best, 2017), it was soon adopted for unwanted activities and behaviours in the general population (James & MacKenzie, 2018). The estimated lifetime prevalence of stalking victimization is ranging between 8 and 15% (Chan & Sheridan, 2019; Office for National Statistics, 2016); with up to 45% of women and 30% of men reporting that they have been stalked by their ex-partner (Office for National Statistics, 2016). However, the prevalence of stalking perpetration remains unclear, with estimates that between 1 and 8% of the population has engaged in committing various stalking behaviours at some point in their life (Patton et al., 2010). Furthermore, stalking appears to be a gender-based offence, with a majority of stalkers being men, and a majority of victims being women (Chan & Sheridan, 2019, 2021; Fox et al., 2014). Spitzberg and Cupach (2007) meta-analyses revealed that women are 2.6 times more at risk of being a victim of stalking when compared to men.

**Level of Contact and Violence**

Several stalking typologies have been proposed, with a focus on the stalker-victim relationship (e.g., Sheridan & Boon, 2002), the stalker’s initial motivation (e.g., Mullen et al., 1999) or the stalking context (e.g., Mohandie et al., 2006). For more details on stalking typologies, see McEwan and Davis (2020). However, there is a consensus that using the stalker-victim relationship led to more valid and reliable classifications over other types of categorizations (Mohandie et al., 2006). Stalkers are generally classified into three groups: (1) ex-intimates, (2) acquaintances, or (3) strangers (Spitzberg, 2002); with ex-intimates representing up to half of the stalkers (Sheridan & Davies, 2001; White et al., 2020).

While the general population and police officers are more likely to believe that a behaviour constitutes stalking and requires police intervention when the perpetrator is a stranger
(Scott et al., 2013; Scott & Sheridan, 2011), studies have revealed that ex-intimate stalkers present a wider array of behaviours and are more violent (Chan & Sheridan, 2021; White et al., 2020). The level of contact prior to stalking generally influences the perception of danger and fear (White et al., 2020). However, Scott and colleagues (Duff & Scott, 2013; Scott, 2020; Scott et al., 2013) revealed that risk awareness toward ex-intimate stalkers can be increased in research settings by providing contextual information. Ex-intimate stalking has been associated to several other offending behaviours, such as intimate partner violence (Senkans et al., 2017), sexual violence (Tjaden & Thoennes, 1998), harassment & coercion (Longpré et al., 2022; Tachmetzidi Papoutsi & Longpré, 2022), violence (Mullen et al., 1999) and homicide (Monckton-Smith et al., 2017).

**Measurement**

A limited number of scales are available to assess the presence of stalking, the risk, and what course of action is needed (Nobles et al., 2009; Stefanska et al., 2021b). Furthermore, while some scales are unvalidated professional checklists (e.g., Stalking version of the Domestic Abuse, Stalking and Harassment [DASH] risk checklist; Richard, 2009), others are structured risk assessment guides for clinicians (e.g., Stalking Risk Profile [SRP]; MacKenzie et al., 2009), meaning that their scopes and psychometric properties are not the same. Because of a lack of consensus regarding the classification of stalkers and no empirically derived base rate, the measurement of stalking varies between studies and scales (Fox et al., 2011). For example, the Stalking Behavior Checklist (SBC; Coleman, 1997) focuses exclusively on the assessment of stalking in the context of intimate relationships; the SRP is used to assess the risk, with a focus on the risk of violence in stalking and future-related offences; and the S-DASH is used by the
first responders to assess the pattern of behaviours from a victim’s perspective and prioritize cases, but does not offer a threshold for the different levels of risk (e.g., Low, Medium, High).

This lack of consensus and consistency between the scale used, the different aims of the scales, and the lack of empirically derived thresholds is undermining our ability to properly assess how the seriousness of the behaviours relates to actual risk (i.e., an empirically-derived risk level determined by actuarial tools), and to determine what is the best course of action, which can significantly impact first responders’ decision-making process.

Recently, using a sample of 924 stalking cases of victims who contacted the National Stalking Helpline, Stefanska et al. (2021b) developed a 16 behaviours-based items scale employing Exploratory Factor Analysis (EFA) and Two-parameter Item Response Theory (2PL IRT) analyses. The Severity of Stalking Behaviours Scale (SSBS; Stefanska et al., 2021b) adequately discriminated between different levels of stalking (i.e., total score), discriminated between subgroups of stalkers, and presented good concurrent validity with the S-DASH, a professional checklist used to assess the pattern of behaviours from a victim’s perspective and prioritize cases. The S-DASH is the closest inventory measuring similar constructs included in the SSBS, and while there is no information concerning its validity and reliability, the S-DASH is regularly used by police forces and the National Stalking Helpline for case prioritization.

The SSBS items are distributed on a probabilistic Guttman scale, where items are ordered in a hierarchy such that individuals located at each level of the scale would have a high probability of endorsing all items below their level but would be unlikely to endorse items above their level. Preliminary results revealed that the SSBS is presenting good stability across samples and genders (Longpré et al., 2022; Tachmetzidi Papoutsi & Longpré, 2022). Its nomological network with harassment, coercion and personality traits is currently under scrutiny, and results
revealed that while stalking is a distinct construct, the level of stalking (i.e., number of behaviours) and the seriousness of the behaviours (measured by the difficulty parameter) are good predictors of other violent behaviours and psychosocial impairments (Longpré et al., 2022; Tachmetzidi Papoutsi & Longpré, 2022).

**Latent Structure**

In the last three decades, the latent structure of psychological disorders and offending behaviours has been under scrutiny throughout taxometric analyses. Introduced by Meehl and colleagues (Meehl, 1995; Meehl, 2004; Meehl & Yonce, 1994; Ruscio et al., 2006; Waller & Meehl, 1998), taxometric analyses are robust and non-redundant procedures that allow researchers to distinguish between categorical (e.g., taxon) and dimensional models of latent construct. A taxonic structure indicates that individuals presenting a characteristic are fundamentally different from those not presenting the characteristic, whereas a dimensional structure implies that inter-individual’s variation is a matter of intensity, not nature (Longpré et al., 2018; 2020; Meehl, 1995; Ruscio et al., 2006). While natural boundaries (e.g., taxon) are frequent in nature, it is significantly less frequent in psychology (Ruscio et al., 2006). A vast majority of psychological disorders and personality disorders present a dimensional structure, as opposed to a taxonic structure (Haslam et al., 2012; 2020). The scarcity of identified taxon contrasts starkly with the abundance of categorical disorders generally used in psychology, where an individual is seen as having or not a disorder or is labelled as belonging to a group (i.e., stalker).

Research on stalking usually describes stalking as a taxon, and stalkers as belonging to a specific sub-group of offenders. However, similar stalking behaviours (e.g., death threats) are found across the different subtypes of stalkers (e.g., Sheridan & Davies, 2001; White et al.,
are not specific to offending populations (e.g., Chan & Sheridan, 2019; Sheridan & Davies, 2001), and are linked to different levels of involvement and different levels of risk (e.g., Mullen et al., 1999; Rosenfeld & Harmon, 2002). In other words, stalking is marked by an absence of pathognomonic criteria. Even though thresholds can be found (e.g., Mullen et al., 1999), the discriminant validity of the typologies is limited (e.g., Straszewicz et al., 2011), highlighting that such subgroups are sometimes better conceptualized as differing along a continuum rather than being distinct entities (Lahey & Waldman, 2003).

The latent structure of a construct should determine whether it is better to measure it by categorizing individuals into groups (e.g., natural boundaries) or by considering the placement of individuals along a dimension (Ruscio et al., 2006). A mismatch between the type of measurement and the latent structure increases the measurement error (Preacher et al., 2005) and leads to arbitrary cut-offs (Longpré, Sims-Knight et al., 2020). The absence of pathognomonic symptoms, and the use of arbitrary thresholds might explain, in part, why stalking and harassment are usually difficult to disentangle (Chan & Sheridan, 2021) and why the prevalence of stalking behaviours remains unclear (Patton et al., 2010; Stefanska et al., 2021b).

The Present Study

While the distinction between subtypes of stalkers can be useful to assess the risk of potential violence and understand the level of contact between stalker(s) and victim(s), to our knowledge no study to date has examined if these boundaries are arbitrary or if stalking is a taxonic construct. While Stefanska et al. (2021b) have determined that stalking was sufficiently unidimensional to conduct Two-parameter Item Response Theory (2PL IRT) analysis, Exploratory Factor Analysis (EFA) analysis revealed the presence of six sub-factors: 1) Intrusive Communication, 2) Violent Behaviours, 3) Unwanted Communication, 4) Unwanted
Appearance, 5) Proxy Behaviours and, 6) Implied Threats. Furthermore, both 2PL IRT and EFA are suboptimal analyses to uncover taxonic differences (Longpré, Knight et al., 2020; Longpré, Sims-Knight et al., 2020) and taxometric analyses are required to adequately investigate the latent structure of a construct (Meehl, 2004; Ruscio et al., 2006).

Therefore, the aim of the present study is to examine the latent structure of stalking using taxometric analyses. For the purpose of this study, stalking will be measured by using the Severity of Stalking Behaviours Scale (SSBS; Stefanska et al., 2021b). Determining the latent structure of a construct has several implications, ranging from developing scales that adequately discriminate along a continuum (e.g., dimensional structure) or that focus on a sub-group (e.g., taxonic structure), to the determination of a cut-off, to determining whether it is better to analyse a construct by categorizing individuals into groups or by considering the placement of individuals along a dimension (Knight et al., 2013; Longpré, Knight et al., 2020; Meehl, 2004; Ruscio & Ruscio, 2004).

Methods

Participants

The sample in this study consisted of \( N = 1032 \) victims’ accounts of stalking, who had contacted the National Stalking Helpline between October 2015 and February 2019 in the United Kingdom. Information for each victim account was extracted from a de-identified database and victims were selected based on their stalker-victim relationship: ex-intimate \( (n = 742, 71.9\%) \), acquaintance \( (n = 232, 22.5\%) \) and stranger \( (n = 58, 5.6\%) \). However, in order to increase the validity of the data and because of concerns around the reliability of self-reported gang stalking (Sheridan & James, 2015), participants suspected of belonging to this subgroup were not extracted from the database.
The majority of victims were female \( (n = 844, 81.8\%) \) and the majority of stalkers were male \( (n = 760, 73.6\%) \). Victims’ ages, ethnicity, education, and social status were not available. Little information was available on the age of stalkers \( (n = 434; 42.1\%) \) with the group ages 26-35 years old being the most common, and no information was available on the ethnicity, education, and social status of the stalkers.

**The National Stalking Helpline Database**

The National Stalking Helpline database contains information from any potential victim who has contacted the helpline. When contacting the helpline, victims provide information about their situation and the stalking behaviours they have experienced. Professionals who receive the call use a checklist of 27 potential stalking behaviours to record which of these behaviours have been experienced by the victims. This information is stored under an individual profile with a unique identification number. However, victims are not obligated to share their personal details, resulting to many demographic profiles being incomplete. The 27 potential stalking behaviours listed in the database are: watching, spying, loitering, phone calls, emails, text messages, letters, following, social networking sites (contact via social media), visit house/work, in/through workplace, gifts, third-party contact, vexatious complaints, threats, revenge porn, harassment, hacking technology, tracking devices, threaten suicide, break-in, criminal damage, physical assault, sexual assault, death threats, stalking behaviours unclear and other. Through a volunteering partnership, the researchers received permission by the National Stalking Helpline to access and extract data from their database for research purposes.

**Measures**

For the purpose of this study, stalking was measured by using the SSBS (Stefanska et al., 2021b). The SSBS was developed using Exploratory Factor Analysis and Two-parameter Item
Response Theory Analysis. The concurrent validity was assessed by correlation of the stalking scale with the S-DASH. Results indicated that 16 stalking behavioural items of the 27 items present in the National Stalking Helpline best represented the severity of stalking.

The 16 stalking behavioural items are: 1) Visit House/ Work, 2) Loitering, 3) Threats, 4) Phone calls, 5) Emails, 6) Text Messages, 7) Social Networking, 8) Letters, 9) Gifts, 10) Third Party Contact, 11) Threaten Suicide, 12) Following, 13) Break in, 14) Criminal Damage, 15) Physical Assault, and 16) Death Threats. Items are distributed on 6 sub-factors: 1) Intrusive Communication, 2) Violent Behaviours, 3) Unwanted Communication, 4) Unwanted Appearance, 5) Proxy Behaviours and 6) Implied Threats. Items were coded as absent (0) or present (1). The prevalence of each item is presented in Table 1.

[Insert Table 1 here]

Statistical Analyses

Taxometric analyses are procedures used to assess the latent structure of psychological constructs (Meehl, 1995; Ruscio et al., 2006) by determining whether divergent and non-redundant methods yield consistent results about the latent structure of a construct (Ruscio et al., 2010). Taxometric analyses were conducted to assess whether stalking, measured by the SSBS, is distributed as a naturally occurring category or as a dimension construct, with no non-arbitrary categorical boundaries. Analyses were conducted using Ruscio and Kaczetow’s (2008) software for the R program. Three conceptually distinct procedures were employed: Mean Above Minus Below a Cut (MAMBAC; Meehl & Yonce, 1994), MAXimum EIGenvalue (MAXEIG; Waller & Meehl, 1998) and Latent Mode Factor Analysis (L-mode; Waller & Meehl, 1998). These procedures are the most commonly used and extensively studied taxometric procedures (Haslam & Kim, 2002).
The first procedure employed was MAMBAC, which is based on the premise that if groups exist, there must be an optimal cut-off score (taxonic boundary) between groups. Participants are first sorted by their indicator scores. In accord with the recommendation of Ruscio et al. (2006), fifty equally spaced cuts are then made along the input indicator. These cuts divide participants into those above and those below an indicator cut. Output indicator values are then calculated by taking the difference between mean values above and below each cut and these difference values are connected to form a curve. Taxonic constructs, in general, display a peak on this curve. On the other hand, dimensional constructs generally peak at the upper and lower tails of the curve, where the most extreme scores can be found on the normal curve.

The second taxometric procedure used in this study was MAXEIG, which is used to assess the association between two or more output indicators at different levels of an input indicator (Walters et al., 2009). If the construct is taxonic, the curve will peak in the subsample containing a taxon. Dimensional constructs display a non-peaked curve since indicators remain stable across subsamples in a dimensional construct. The third procedure employed is L-Mode, which is used to calculate the largest principal factor of the indicator and plots the distribution of participants’ scores on this single latent factor. Dimensional constructs commonly form a single group and give rise to a curve that has a unimodal form. Taxonic constructs, in contrast, generally split into two groups, giving the curve a bimodal form.

Comparison curves were generated to compare the relative fit of the obtained data generated by each taxometric procedure to expect categorical or dimensional curves (Ruscio et al., 2007). Relative fits between comparison curves and obtained data were measured by the comparison curve fit index (CCFI): A CCFI below .50 denotes a dimensional structure (Ruscio et al., 2006) where a CCFI over .50 denotes a taxonic structure (Ruscio et al., 2006). Monte
Carlo studies support the CCFI’s high accuracy (Ruscio et al., 2010; Walters et al., 2010). It is recommended to select a meaningful range of taxon base rate estimates (Ruscio et al., 2006; Walters et al., 2010). In this study, because the actual prevalence of stalking perpetration is unknown, a no base rate was first imputed. Following the analyses with no imputed base rate, a 50% and a 60% estimated base rates were also used. This procedure is both a top-down and bottom-up approach, where first a no a priori base rate (prevalence) is used, and then, the samples-specific estimated base rates are used for further analyses (Haslam & Kim, 2002).

**Results**

**Pre taxometric**

Before conducting taxometric analyses, the sample needs to be divided between the putative taxon group and the complement group (Walters, 2014). The boundary between both groups is usually the base rate of the construct under investigation (Walters et al., 2011). Because the prevalence of stalking is unknown, and the estimated lifetime prevalence of stalking victimization is ranging between 8 and 15% (Chan & Sheridan, 2019), a conservative prevalence of 10% was used.

Furthermore, minimal requirements need to be tested in pre-taxometric analyses (Walters, 2014). First, at least 300 participants are required for stable results (Meehl, 1995). In the current study, a total of 1032 victim accounts of stalking were used. Second, it is recommended to use indicators that are continuous or quasi-continuous (Walters & Ruscio, 2009). As mentioned, the SSBS is composed of dichotomous indicators. Monte Carlo simulations indicated that dichotomous indicators provide reliable results (Ruscio, 2000). Moreover, studies have uncovered similar taxonic structure using dichotomous and continuous indicators ([Shizotypy] - Lenzenweger & Korfine, 1992; Korfine & Lenzenweger, 1995; [Sexual sadism] - Longpré et al.,
2018; Longpré, Sims-Knight et al., 2020). However, to assess the stability of results across dichotomous and continuous indicators, one set of taxometric analyses were conducted on the 16 items, and one set of taxometric analyses were conducted on the score of each sub-factor found by Stefanska et al. (2021b; F1: intrusive communications [3 items]; F2: Violent behaviours [3 items]; F3: Unwanted communications [2 items]; F4: Unwanted appearance [3 items]; F5: Proxy Behaviours [2 items]; F6: Implied threats [3 items]). Third, each indicator should differentiate between the putative taxon and complement groups at \( d > 1.25 \), which was respected in the current study. Fourth, the mean inter-indicator correlation should exceed .30 and the mean inter-indicator correlations for the putative taxon and complement groups should not exceed .30 (Meehl, 1995). Point-biserial correlation coefficients indicated that only two inter-indicator correlations were slightly over the .30 threshold.

**Taxometric**

MAMBAC, MAXEIG and L-Mode analyses were conducted. CCFIs results were consistent with what one would expect when studying a dimensional structure. Furthermore, results were similar to the curves generated for the simulated dimensional comparison data, and no taxonic peaks were evident (curves can be provided on demand). The interpretation of the graphs should never take precedence over CCFIs, which embody the fundamental principles upon which Meehl's taxometric were based (Longpré, Sims-Knight et al., 2020).

As can be seen in Table 2, with no estimated base rate, MAMBAC, MAXEIG, L-Mode and mean CCFI were respectively .477, .467, .480 and .475 for the individual items, and .493, .485, .495 and .492 for the sub-factors. The farther the CCFI falls below .50, the greater the support is for a dimensional structure (Ruscio et al., 2006). The farther the CCFI is above .50, the greater the support is for a taxonic structure (Ruscio et al., 2006). Following the analyses, a 50%
and a 60% estimated base rates were used. As can be seen from Table 3, with an estimated base rate of 50%, MAMBAC, MAXEIG, L-Mode and mean CCFI were respectively .437, .458, .554 and .483 for the individual items, and .475, .418, .559 and .484 for the sub-factors. Finally, as can be seen from Table 4, with an estimated base rate of 60%, MAMBAC, MAXEIG, L-Mode and mean CCFI were respectively .442, .470, .509 and .474 for the individual items, and .460, .461, .497 and .473 for the sub-factors.

[Insert Table 2 here]

[Insert Table 3 here]

[Insert Table 4 here]

Discussion

Overview of the results

Research on stalking usually describes stalking as a taxon, and stalkers as a specific sub-group of offenders. However, no study, to our knowledge, explicitly assesses the latent structure of stalking. Therefore, the aim of the present study was to examine the latent structure of stalking by conducting taxometric analyses on a sample of 1032 victim accounts of stalking from the National Stalking Helpline. Stalking was measured by using the SSBS (Stefanska et al., 2021b). Taxometric analyses revealed that stalking presents a dimensional structure and no taxonic peaks emerged. Results were consistent across analyses (MAMBAC, MAXEIG and L-Mode), indicators (CCFI, Curves) and measures (Items, Factors), indicating that a dimensional approach is the most parsimonious position.

Implications

Although it is acknowledged in the literature that stalking should be measured on a continuum of severity (e.g., Scott & Sheridan, 2011), no empirical research has studied the latent
structure of stalking using taxometric analyses. The present results support the relevance of previous research in the general population and how it can guide our work with convicted perpetrators. If stalking was a taxon, general population and convicted perpetrators would have been considered as different in kind, limiting our application of research conducted in the general population to convicted perpetrators. These results have several implications, ranging from the conceptualization, measurement and assessment of stalking, the research strategies used to study stalking, to the assessment of risk. These implications will be discussed in turn.

**Language, Measurement and Cut-offs.** The latent structure of a concept refers to its fundamental nature. A taxonic structure implies that individual variation is a question of nature and that individuals presenting a disorder are fundamentally different from those who do not present the disorder. A dimensional structure implies that individual variation is a matter of intensity and that individuals only differ by their level on the construct. Considering the dimensional structure revealed by taxometric analyses, the present research suggests that the language and conceptualization of stalking should be modified. With a dimensional structure, it is more appropriate to talk about degree or levels of stalking behaviours over using a stalker vs non-stalker categorization. Although it appears that this is a slight difference of language, appropriate operationalization may help to reduce the perception that some individuals are different in kind rather than in degree. As highlighted by White et al. (2020), the language we are using to describe stalking is important to consider because empirical evidence has shown that over-emphasis of some behaviours can ultimately lead to focusing on certain groups, such as predatory stalking over ex-intimate stalking. The idiosyncratic assessment of stalking leads to inconsistencies across jurisdiction, which impact police officers’ decision-making (Jerath et al., 2022). Moving toward a dimensional assessment, where the focus is on the level of stalking, as
opposed to using an idiosyncratic and sometimes non-exhaustive list of behaviours, should help to improve police officers’ decision-making. Furthermore, the severity of behaviours as well as the underlying psychological processes are also central to assess the level of involvement, the level of fixation and the level of contact. However, further research is needed to understand how the level of stalking on that dimension is linked to different outcomes and risk levels.

Furthermore, scales that measure this dimension should provide adequate discrimination along the entire continuum rather than focusing on boundaries (Ruscio et al., 2006). As discussed in the introduction, most scales used by practitioners focus on specific sub-groups or do not measure the entire spectrum of severity. Furthermore, frequently used scales, such as the S-DASH are not validated, limiting their potential utility. Item response theory analyses found that the SSBS adequately covers the spectrum of stalking and has items that map on different levels of stalking involvement. While the Guttman structure of the scale needs to be replicated in other samples, and its nomological network study, the structure found by Stefanska et al. (2021b) should be considered to develop future stalking scales. Additionally, some items of the SSBS overlap with the Stalking Tactics Scales (STS; Senkans et al., 2017), which provide information on the duration as well as the numbers of behaviours experienced, or the Stalking Assessment Indices (SAI-P; McEwan et al., 2020), which provide information on the presence and frequency of behaviours experienced as well as their duration. While this paper supports a dimensional structure of stalking, as measured by the SSBS, similar to Meehl’s philosophy, we advocate that our results should be replicated across samples and measures, and the research on the STS and SAI-P should also be considered in future studies.

A dimensional measurement partially confronts the idea that a specific subgroup presents a higher risk because they present criteria that render them different (Longpré et al., 2018). In
contrast to taxons, dimensional constructs lack the nonarbitrary cut-offs (Ruscio et al., 2006). A shift to a dimensional measurement of stalking involves the determination of an empirically derived cut-off point, such as the score of 25 or 30 on the Psychopathy Checklist-Revised (PCL-R; Hare et al., 1990). Not all stalking behaviours are equal, hence, not all levels of risk require similar interventions (either from an investigative standpoint or offender treatment within the prison system). Similar to the work on psychopathy, future research on stalking should attempt to provide empirically derived cut-offs for intended decision; the cut-offs for “a primary prevention training” and “Stalking Protection Orders” should be radically different. The severity of stalking is often subjectively determined rather than an objective measure (James & MacKenzie, 2018); however, a dimensional measurement is in no way an arbitrary measurement and cut-offs must be established empirically for each intended decision (Ruscio et al., 2006).

Research. The latent structure should establish whether it is better to analyse the construct by categorizing individuals into groups (i.e., stalker vs non-stalker) or by considering the placement of individuals along a dimension (i.e., levels of stalking; Ruscio et al., 2006). Understanding stalking from a dimensional perspective provides support to study stalking in nonclinical populations, where the extreme upper end of the continuum is less frequently found. Studying stalking outside of convicted perpetrators is not new (e.g., Berry and Bainbridge, 2017), and it was studied among community individuals (e.g., White et al., 2020) and university students (e.g., Chan & Sheridan, 2020). Thus, while stalking is considered in the literature as a taxon, and the language used around stalking is also implying a taxonic structure, stalking is studied as a dimensional construct. This discrepancy between the language and the research strategy used can limit the generalization of findings across samples and our understanding of stalking.
Taxometric results strengthened the validity of previous findings in the general population (e.g., Chan & Sheridan, 2021; Chan et al., 2021; White et al., 2020), and their applications all along the continuum, including with convicted perpetrators. While individuals located at the upper end of the spectrum might present multiple aetiological influences that vary across individuals, continuous phenotypic variation implies that aetiology factors are likely to be additive in nature (Haslam, 1997). However, there is a possibility that the extreme form of stalking results from an interaction of independent neurobiological and psychological impairments, leaving open the possibility that other measures might yet uncover a taxon (Longpré et al., 2018; Meehl, 1995; Ruscio et al., 2006). Although our analyses indicate that stalking presents a dimensional structure, more research is required. This study represents only one set of results that need to be replicated in samples combining both general population and convicted perpetrators, across genders and measures. If stalking is indeed a dimensional construct, the same pattern would be found in different populations, and no natural boundaries will emerge.

**Risk Assessment.** Knowing the structure of a construct should also provide the best assessment of population under the judicial system and the best identification of their criminogenic needs (Knight, 2014). The dimensional structure of stalking, and its external correlates such as harassment, domestic violence and sexual homicide (Stefanska et al., 2021a), should also lead to a reflection on the use of thresholds to assist the determination of police interventions, prison sentences or type of treatment required. Arriving at a decision on the sole presence or absence of stalking appears counter-intuitive, especially considering the limited number of empirically derived scales and the lack of clearly identified cut-offs. A dimensional assessment of stalking will provide the opportunity to uncover different risk factors associated
with different risk of outcomes, to assess how context, level of fixation and persistence might impact the outcomes, and should offer accurate and reliable assessment of the course of actions needed as opposed to idiosyncratic and subjective risk assessment of stalking. Furthermore, future research should have a careful consideration of context and how it might impact the level of risk. Brouillette-Alarie et al. (2022) have suggested that using items weighting, using IRT/MIRT parameters, has the potential to improve the predictive and face validity of actuarial scales, as not all risk factors are likely to be equally related to the same risk of recidivism. For example, two individual presenting 4 items ([Case A: Visiting House, Loitering, Phone Calls & Emails] vs [Case B: Text Messages, Following, Break-in & Death Threats]) will most likely present different level of risk, and using items weighting will allow to capture this difference.

While the S-DASH is used to guide professionals in identifying the presence of stalking and in determining the potential of violence, the S-DASH is not a risk assessment tool. There is limited access to actuarial scales that allow practitioners to assess the risk of violence and future-related offences (despite literature showing overlaps exist; Stefanska et al., 2021a). Furthermore, the low predictive value of some stalking measures, some based on relatively weak empirical support, hinder our effort to effectively assess the risk. Even though the SRP is showing promising results, there is an urgent need to determine whether there is a particular threshold along the stalking continuum that could allow more specific police interventions, sentences, or treatments. For example, the threshold for mandatory community treatment should not be the same as the threshold for Stalking Protection Orders. However, these interventions vary across jurisdictions, with no recommended one-size-fit-all approach. With the dimensional nature of stalking empirically supported, we need to move forward in the improvement of our understanding of the risk of violence and future-related offences, which should help to guide
effective treatment strategies. There is currently a lack of treatment effectiveness studies (British Psychology Society, 2021), and identifying the thresholds for each level of risk should help to improve the development of effective prevention and treatment.

Mixed results were found between risk assessment, stalking reoffending, and violent reoffending across studies (Foellmi et al., 2016; McEwan et al., 2020; Shea et al., 2018). While no individual risk factors were found to be significantly related to future stalking behaviours (McEwan et al., 2020), the different level of risk was found to be associated with different outcomes (Shea et al., 2018). Those results both support the importance of using a dimensional assessment of stalking and stress the need to reduce the perception that some individuals are different in kind rather than in degree. McEwan (2021) has provided an exhaustive evidence-based overview of key considerations for risk assessments of stalking. Future research should focus on identifying individual risk factors that will guide practitioners in the best course of actions that should be taken, and McEwan’s (2021) overview should be used as a starting point to inform effective management of stalking cases.

Limitations

This study has its limitations. First, the sample used in the present study is uncommon. Data was gathered from self-reported victims’ accounts. Self-reports do not provide insight into the motivations behind the perpetrator’s actions and limit our understanding of the situation to what the victim has reported. It is therefore important to consider that information available was limited to some extent and to understand that it may not provide a complete picture of the stalking events. However, in order to increase the validity of the data, and because of concerns around the reliability of self-reported gang stalking (Sheridan & James, 2015), this subgroup was not extracted from the database and used in the analyses. Furthermore, taxometric base rate
estimates revealed that the prevalence of stalking in our sample was much higher than usually found in other studies (e.g., Chan & Sheridan, 2019; Office for National Statistics, 2016). While not all logs in the National Stalking Helpline database contained elements of stalking (i.e., although anyone who is calling the helpline should be a person who identified as a victim, some callers did not report any stalking behaviours [n = 22]), a majority of individuals who contacted the helpline were victims of some form of stalking behaviours, which led to an over-representation of stalking in our database. However, this over-representation has increased the odds of finding a taxon, which was not the case, as the results indicated that stalking presents a dimensional structure. Future research should focus on replicating our results on different samples.

Secondly, three L-mode CCFIs were slightly over .50 and an important number of CCFIs were between .45 and .50. L-Mode analysis is sensitive to false negative results, which creates a false impression of taxonicity (Schmidt et al., 2004). However, a CCFI between .45 and .55 must be interpreted with caution and considering other indicators (Ruscio et al., 2006). It is the convergence and consistency of multiple indicators that indicate whether a construct presents a taxonic or a dimensional latent structure (Meehl, 1995; 2004). In the present study, while some results were less conclusive, the amount of evidence of a dimensional structure of stalking was consistent across analyses (MAMBAC, MAXEIG and L-Mode), indicators (CCFI, Curves) and measures (Items, Factors). Furthermore, Monte Carlo simulations support the accuracy and stability of CCFIs, even when they fall between .45 and .50 (Ruscio et al., 2010). As mentioned by Longpré, Knight, et al. (2020), the consistency of results supporting a dimensional structure should not be discarded on the basis of ambiguous results. Therefore, while our results should be interpreted with caution, and replicated across samples and scales, the convergence of results...
found in the present study indicated that stalking presents a dimensional structure. New
taxometric analyses should be conducted on other scales, such as the Stalking Screening Tool
(SST) or the Screening Assessments for Stalking and Harassment (SASH), which are used more
frequently.

**Conclusions**

The aim of the present study was to examine the latent structure of stalking by
conducting taxometric analyses. In summary, analyses revealed that stalking presents a
dimensional structure and no taxonic peaks emerged. While some results were ambiguous, the
amount of evidence of a dimensional structure of stalking was consistent across analyses,
indicators, and measures. Consistency across procedures, measures, and samples is both a
cornerstone and necessary component of a taxometric investigation and is at the very foundation
of Meehl’s philosophy. Thus, the dimensional structure of stalking should not be discarded on
the basis of some ambiguous results.

The movement toward a dimensional assessment of stalking has important consequences
for risk assessment, for treatment and management decisions. Future research should focus on (a)
replicating the present findings in samples of convicted and non-convicted perpetrators, (b)
examining the nomological network of stalking, (c) scrutinizing the relationship between the
level of stalking, treatment response and the risk of reoffending, and (d) exploring stalking’s
developmental antecedents.
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Compliance with Ethical Standards

Conflict of interest: The authors declare that they have no conflict of interest.

Ethical Approval: All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Declaration of Helsinki and its later amendments or comparable ethical standards.

Informed Consent: For this type of study, formal consent is not required.
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