



DIGITAL COMMUNITY OF CHILDREN'S SELF-HARM ON TIKTOK Quantitative and Qualitative Methodology

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ABSTRACT

Non-Suicidal Self-Injury (NSSI) is a growing phenomenon on social networks, with an estimated prevalence of 30% among young people in Spain. In light of the aforementioned considerations, we present a methodology designed to identify and analyse the content created by young people on TikTok. On the one hand, a quantitative study was conducted using an API to collect and classify multimedia content through hashtags. In addition, a qualitative analysis was conducted to elaborate a systemic study of the content. The objective is thus to identify the content on TikTok pertaining to NSSI and to comprehend their codes.

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1. Introduction

Nonsuicidal self-injury (NSSI) is defined as a deliberate act committed by an individual to cause harm to themselves, without the intention of ending their life. This intentionality may range from the stimulation of suffering to aesthetic aspects. (American Psychiatric Association, 2022; Nock, 2010; Vega et al., 2018) The actions through which self-injury occurs include, but are not limited to, cutting, scratching, hitting, burning, and even the aggravation of previous injuries or damage to the healing process of previous traumas (Klonsky, 2011).

Academic research indicates that the prevalence of self-injury among young audiences varies considerably, depending on the variables and methodological parameters employed. Nevertheless, the scientific literature tends to generalise these behaviours across this age group (Hawton, 2002; Sardar, 2020). The figures, at the international level, place these practices with an oscillation between 1.5% and 54.8%, while at the national level this range of affectation extends from 0.58% to 74.9% (Bousoño et al., 2006; Sardar, 2020). (Bousoño et al., 2021; Brunner et al., 2014; Calvete Zumalde et al., 2015; Faura-Garcia et al., 2021; Kirchner et al., 2011). Furthermore, these behaviours appear to have increased among minors and adolescents in recent years, particularly since the onset of the pandemic (Vázquez López et al., 2023). A report by the Fundación de Ayuda a Niños y Adolescentes en Riesgo (ANAR) (Foundation for Aid to Children and Adolescents at Risk) indicates a 5,514% increase in the number of consultations received over the past 13 years. In a three-year period (2021), the ANAR Foundation reported a 5,514% increase in the number of consultations received, while the General Council of Nurses highlighted the motivations of the victims and emphasised that there is no need for a previous pathology for self-harming behaviour to occur. (General Council of Official Nursing Associations of Spain, 2023/Consejo General de Colegios Oficiales de Enfermería de España, 2023)

Non-suicidal self-harm serves a function of emotional relief through pain. To avoid frustration and as an escape route from the various problems that the subject may have, self-harm serves as a regulator of emotions that cannot be faced or managed by the victim, so that the self-harming process ends up having a calming psychological effect. Moreover, these behaviours tend to have a repetitive and ascending character in terms of the violence used. In other words, self-injury is increasingly severe in order to seek emotional calm through the increase of pain (Gámez Guadix et al., 2020).

Although the relationship between self-harm and certain mental disorders has been demonstrated (American Psychiatry Association, 20-22), such as anxiety or depression (Calvete Zumalde et al., 2015), eating disorders such as bulimia and anorexia, among others (Farber et al, 2007), or mental illnesses such as borderline personality disorder (Cabrera Zinola, 2015), including other pathologies that may have self-harm as part of the symptom picture (Mecchella & Burns, 2018). The increase in self-injurious behaviours in recent years shows the existence of other factors that may influence the development of these behaviours in young people. Klonsky (2003) summarises the main motivations in models: Firstly, it refers to the regulation of affect, which serves to provide relief or calm in the face of negative and intense situations (Xin et al., 2020). Secondly, it discusses a dissociative model. This is exemplified by subjects who may resort to self-injury in a situation of separation from a loved one (Tarragona Medina, 2020). Another stage is described as an alternative to suicide, as the user takes the self-injurious attitude as a tool to avoid taking their own life. The fourth model argues about interpersonal influence, when the self-injurious act is used to influence the behaviour of different people (Chowanec et al., 1991). The fifth refers to traumatic situations that have consequences on the user's development of identification. The majority of studies on self-injury have focused on family events (Carroll et al., 1980). The sixth model proposes that self-injury is a form of self-inflicted punishment. Finally, sensation seeking (Pérez-Elizondo, 2020) can be defined as the exploration of different types of pain, which brings a pleasurable sensation (Klonsky et al., 2003).

Therefore, self-injurious behaviour is multifactorial, and in addition, it may be caused or encouraged by mental or psychological disorders. The introduction of the variable of social networks (AUTHOR, YEAR) adds a further dimension to this analysis. Many of the aforementioned causes are further enhanced (Sha & Dong, 2021). Others are transformed or even ramified as a result of the media representation of violence, which can bring about different consequences (Edwards & Fuller, 2018). Such effects can include the normalisation of the behaviour in question, or even the shaping of a romanticisation process, either through the action of self-harm itself or towards the outcome of the action itself (Khasawneh et al., 2021). Furthermore, the portrayal of SSA on social media can prompt a

call-back or imitation effect (Buendía Giribaldi et al., 2023a; Moss et al., 2023a). In fact, these effects can lead to the formation of communities of users who seek identification and find spaces to consume and share self-harming content (Castillo, 2023a). (Castillo, 2023) These communicative spaces are constructed through hashtags or keywords that users employ when posting content. One of the principal characteristics of this language is its morphological construction, which is achieved through the use of word games, acronyms, and unusual characters, among other techniques. This enables users to remain undetected by social networks and even to circumvent parental controls. (Alhassan et al., 2021; Emma Hilton, 2017; Moreno et al., 2016)

This study employs a hybrid methodological approach to the representation of self-harm on TikTok. Quantitative analysis is conducted through the development of a data collection application based on the hashtags, while qualitative analysis employs a coding of the content through different categories. The objective is to identify the posting patterns of self-harm communities on TikTok, and the terminology used by young people when uploading this content. This approach aims to reveal different tools for future analysis of the social network TikTok, which can be extrapolated to other social networks or even to other fields of study.

2. Objectives

This study commenced with the formulation of a primary hypothesis regarding the configuration of user communities surrounding self-harming content on social networks. It then proceeded to identify the communicative tools that serve as identifying elements in young people. The primary objective of this study and approach was thus set as follows:

- To define a strategy for analysing the publications made on the social network TikTok by young people who practice and consume self-harming digital content. This will enable an understanding of the configuration of these digital communities.

In order to achieve this main objective, it is necessary to unravel the functioning of digital communities. In order to do this, it is necessary to pay attention to the formulas for publishing content on TikTok and what are the elements that make up this action. In light of the aforementioned, two secondary objectives can be established, which would serve to elaborate on the aforementioned main objective and thereby facilitate its fulfilment. These are as follows:

- Analysis of TikTok publications in different categories, such as the identity of the sources, the production of the videos, their subject matter, and the language codes used.
- Revelation of the linguistic identifying terms, such as specific words and hashtags, used by users who consume or post self-harming content on the social network under analysis.

3. Methodology

A Python application was developed for the purposes of this study, with the objective of periodically downloading TikTok posts that have been tagged with hashtags related to self-harm. The TikAPI library (ByteDance, 2024) was employed to retrieve the posts in question, specifically the resources `api.public.hashtag`, `api.public.search` and `api.public.video`.

The application developed enabled the retrieval of all the publications found for a specific hashtag, which were then searched for and the videos downloaded until the daily limit of queries offered by the API was reached. On the following day, once access to the API had been restored, the process was repeated with a different hashtag. Once the list of hashtags had been compiled, the process was initiated anew with the first hashtag.

In order to ascertain the most appropriate approach to the research question, studies on other lines of research that employ similar methodologies have been consulted (Martínez-Sanz et al., 2023; McCashin & Murphy, 2023) In addition, special attention has been paid to texts on self-injury in other social networks (Martínez-Pastor & Gaete-Salgado, 2023), as well as other works that had as their object of study TikTok (Center for Countering Digital Hate, 2022). Furthermore, an account has been created on this social network with some of the predetermined aspects on self-harm from the research

consulted, in order to configure and confirm an optimal hashtags search (Elizabeth et al., 2021). (Elizabeth et al., 2021; Bahnweg & Omar, 2023) The selected hashtags were as follows: The following hashtags were identified: "shtwt", "catscratchtwt", "babycuts", "shbeans", "cuttwt", "styrofoam", "scartwt".

Between 30 January 2024 and 10 March 2024, 986 different videos were downloaded. The information associated with the videos was also retrieved by TikTok, including texts and statistics such as number of views, number of comments, and number of times shared.

As this study represents an approximation that forms part of a larger ongoing research project, the sample size (n=100) is relatively limited and is part of a larger conglomerate of videos. In order to analyse the aforementioned videos, a qualitative analysis was conducted with regard to four categories: the identity of the source, the production of the video, the theme of the video and the language used. The objective is to identify the characteristics of the publications and to establish patterns or parameters that allow us to recognise the peculiarities of the self-harming digital communities on TikTok.

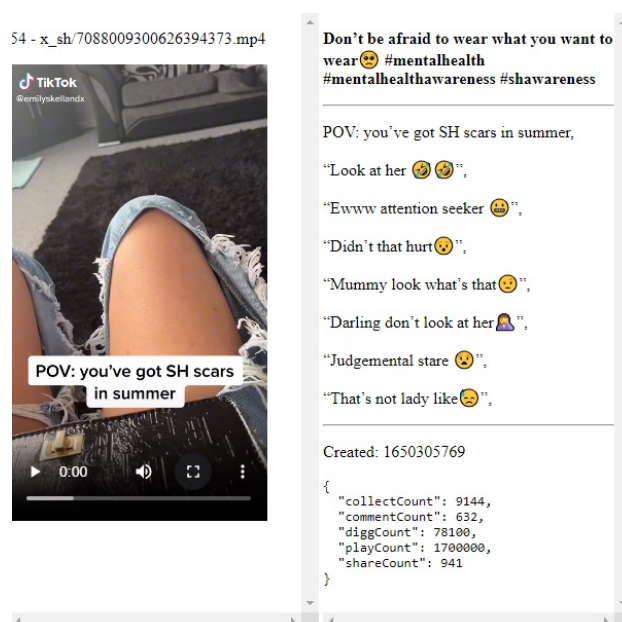
Table 1. Categorisation of the analysis

Sample	Time span	Value
100 videos	30/01/2024 10/03/2024	Identity
		Video production
		Thematic
		Language

Source: Own elaboration, 2024.

In order to facilitate the visualisation, analysis and subsequent coding of the videos, a web application has also been developed in Vue.js. This has enabled the user to view the downloaded content, which has been grouped by tags, as well as the texts and statistics.

Figure 1. Visualisation tool



Source: Own elaboration, 2024.

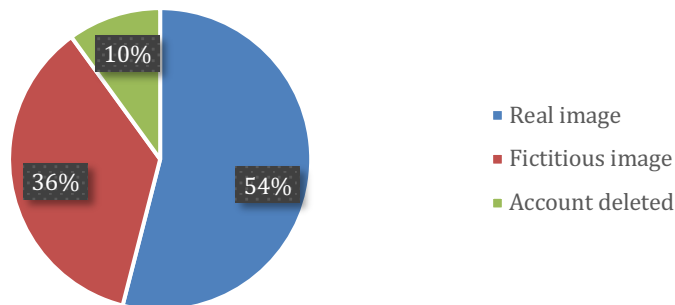
4. Analysis and Results

By paying close attention to the operational and developmental aspects of the TikTok platform, including the mechanics of posting, the characteristics of the content, and even the reach of the posts, it is possible to enhance the quality of the content. (Amado et al., 2022; Klug et al., 2021; we are social, 2023; Zhang & Liu, 2021) and furthermore, influencing the idiosyncrasies of the youth audience that consumes self-harming content (Lookingbill, 2023; Bahnweg & Omar, 2023; Sha & Dong, 2021) an

analysis has been developed that leads to the achievement of the stated objectives. In order to achieve this objective, a sample of TikTok videos ($n=100$), which have been collected through the application, have been coded and analysed in relation to the categories mentioned above: identity, video production, subject matter and language.

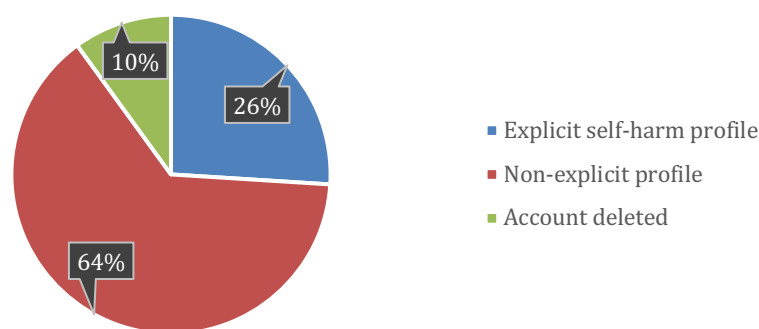
Firstly, in order to ascertain the identity of the source uploader of the self-harming content to TikTok (Martínez-Pastor & Gaete-Salgado, 2023), the profile picture was selected for analysis. This was done in order to determine whether the photograph in question belonged to a real person or whether it was of another character, typically cartoons or other themes. As illustrated in Figure 2, 54% of users employ authentic images of themselves, whereas 36% conceal their identity through the use of alternative photographic content. The latter users maintain their anonymity on social networks (Agüero et al., 2018) for fear of being discovered by family members or friends (Carballo Belloso & Gómez Peñalver, 2017) or even by their style and way of being (Gallegos-Santos et al., 2018). The remaining 10% corresponds to accounts that have been deleted or no longer exist.

Figure 2. Profile picture



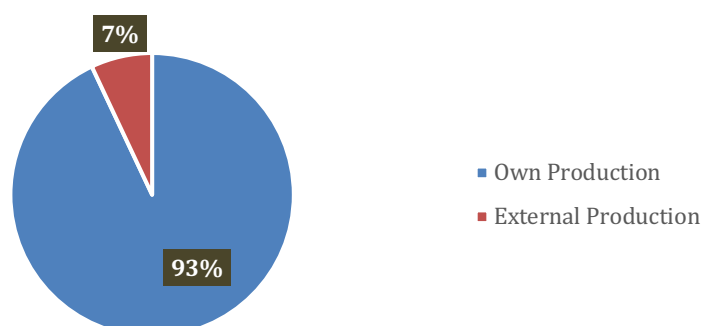
Source: Own elaboration, 2024.

In order to gain further insight into the profile in question, it is necessary to analyse the description of the profile itself. This allows us to ascertain whether the author has created a website dedicated to the uploading of self-harming content. A total of 26% of the users in the sample analysed met the aforementioned parameters. This can be identified through the presence of publications of a similar nature, a definition of comorbidity in the profile (Sánchez Sánchez, 2018) or even the author's own recognition in their description. This is evidenced by the frequent use of the term "vent account" to describe their purpose, which is solely and exclusively oriented towards emotional undoing through self-harm (Pérez et al., 2012). Furthermore, a significant proportion of these users tend to conceal their identity, as evidenced by the aforementioned observations. A further 64% of users who have uploaded content related to self-harm to the social network have not explicitly configured their profile.

Figure 3. Explicitness of the profile

Source: Own elaboration, 2024.

The second category to be considered is that of video production. It is important to understand the dynamics of how the social network TikTok works and how the process of creating audio and visual pieces is developed. This includes the possibility of creating content based on other creators, or even uploading files to the web with the representation of fictional works. It is also essential to respect the platform's policies with respect to copyright. (Suárez-Álvarez & García-Jiménez, 2021; TikTok, 2024a, 2024b) In order to ascertain the extent of the author's involvement in the self-harming content, the selections to be analysed are defined as either the author's own or other people's production. This approach allows us to ascertain the productive characteristics of the creators regarding their audiovisual works. The results indicate that most of the videos analysed were created by the authors themselves (93%), with the creators playing a pivotal role in the development of their originality. This originality can also be expressed through the linguistic or visual codes associated with digital communities of self-harm. The remaining 7% of the data set corresponds to external production. This category encompasses the use of external elements, such as fictional works, which discuss or teach self-harming content. These elements are employed by creators to express feelings resulting from the consumption of these works. (Higueras-Ruiz, 2024).

Figure 4. Author of the production

Source: Own elaboration, 2024.

In addition, within the category of video production we have introduced the figure of the challenge or viral challenge, as it is one of the most common productions on the social network, and which bases its content on the replication and imitation of different actions that other users have done previously. In fact, on many occasions these videos, which tend to become very well known, use fragments of other audiovisual pieces or of other users to establish a comparison between the two creators or videos. In this way, we can also codify one of the main premises about TikTok challenges and their imitation effect on other users, which, in our line of research, can lead to the incitement or encouragement of self-injurious behaviour (Buendía Giribaldi et al., 2023b; Moss et al., 2023b; Ortega-Barón et al., 2023). The challenge falls into this category due to its viral nature and audiovisual production when it is replicated

and spread on TikTok. In terms of the results obtained, viral challenges of a self-harming nature accounted for 5% of those analysed, compared to 95% that did not form part of any trending content. Despite taking a stance against the publication of this type of content on its platform, and even more so in one of its flagship formats such as the challenge, there is self-harming content with viral propagation and incitement and encouragement of NSSI behaviour (Padilla Castillo, 2023).

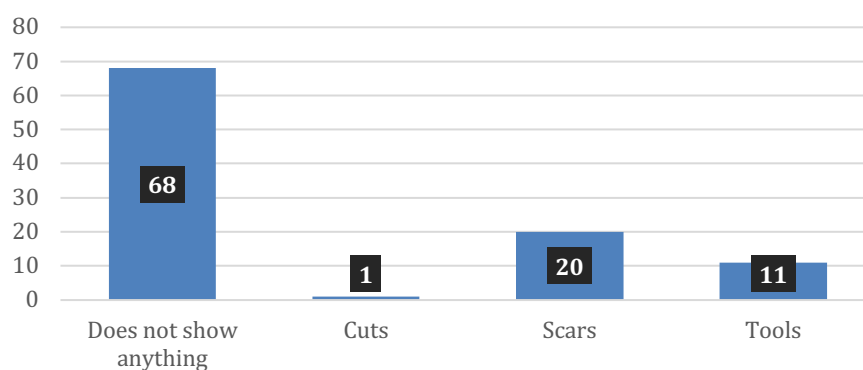
Figure 5. Challenges



Source: Own elaboration, 2024.

The third category under analysis is the subject matter of the video. To this end, we concentrated on the veracity of the content presented in the video, employing the visualisation of cuts, scars, and the presence of utensils as indicators of authenticity. The results indicate that users represent self-harm in various ways. Most users, 68%, do not explicitly represent any self-injury or wound, nor do they refer to self-injury. Conversely, 20% of users do show past blows or scars that were inflicted at some point in the past. In contrast to the self-harming content displayed on the social network Twitter, which can even be perceived as sensationalist. (Martínez-Pastor & Gaete-Salgado, 2023) In contrast to the overt and sensationalist content typically observed on social media platforms such as Twitter, the visual representation of NSSI on TikTok is more suggestive and subtle. For instance, 11% of the content depicts some form of utensil, yet the process is never shown. Instead, the content allows the viewer to infer the behaviour without actually seeing it. Only 1% of the content displayed on the platform depicts bleeding or recent self-harming cuts.

Figure 6. Subject of the video

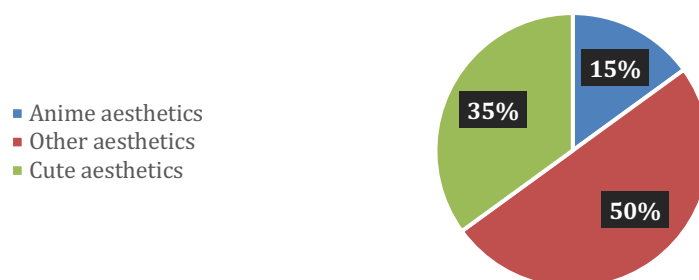


Source: Own elaboration, 2024.

Furthermore, with regard to the subject matter of the video, it is possible to ascertain whether the content is fictitious. Furthermore, if the content is indeed fictitious, it would be beneficial to ascertain the artistic style employed. The video has been coded as an anime aesthetic, given that there are studies that relate self-harm to this type of traditional Japanese animation. (Cristina & Marin, 2011) or alternatively, a cute artistic style, which is related to feelings of tenderness, and which could also have aspects in common with the self-injurious attitude (Martínez-Pastor & Gaete-Salgado, 2023). The results indicate that 15% of the videos analysed exhibited an anime aesthetic, while 35% exhibited a cute aesthetic. Together, they account for approximately half of the fictional content of the videos analysed.

The remaining categories correspond to other aesthetic types that are not specifically defined or that lack a clear definition.

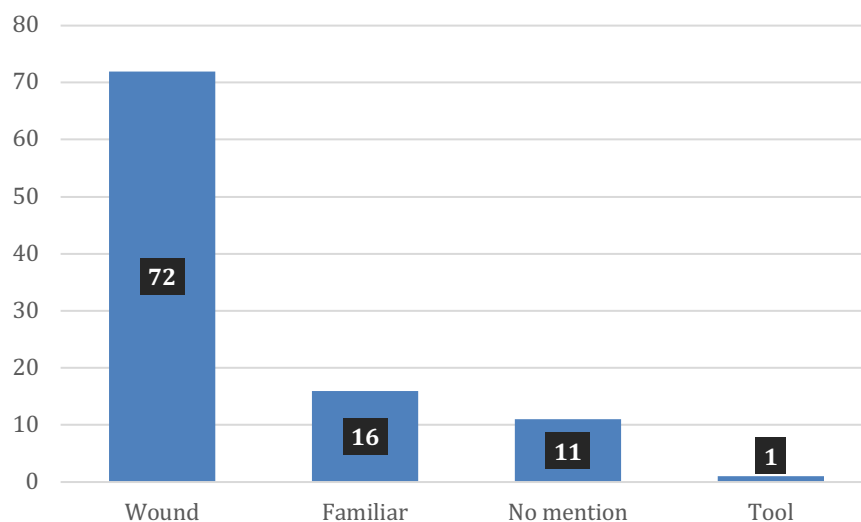
Figure 7. Aesthetics fiction content



Source: Own elaboration, 2024.

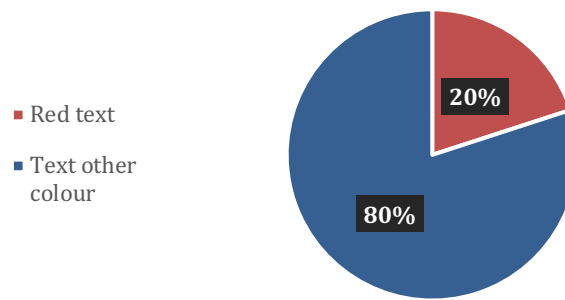
Finally, it is necessary to address the categorisation of language. Together with video, they constitute the principal elements of TikTok posts. In order to gain an understanding of the creative process, it is necessary to analyse the social network in question. (TikTok, 2024a) also addresses the different aspects and locations in which text can appear within a single post. This element can be the title of the post, which forms a preliminary analysis in the coding of the language. It is organised around various selections, including whether the title mentions the wound, whether it describes the use of a tool, or whether it mentions a family member or friend. Regardless of the tone or intention, these elements are included in the analysis. The results indicate that 72% of the publications contain some mention of self-injury, whether direct or indirect, and that 16% provide some personal relationship information about a family member or friend, regardless of the intention behind it. In contrast, 11% make no mention of self-injury at all, while 1% refer to some kind of utensil used to inflict self-injury.

Figure 8. Use of Language



Source: Own elaboration, 2024.

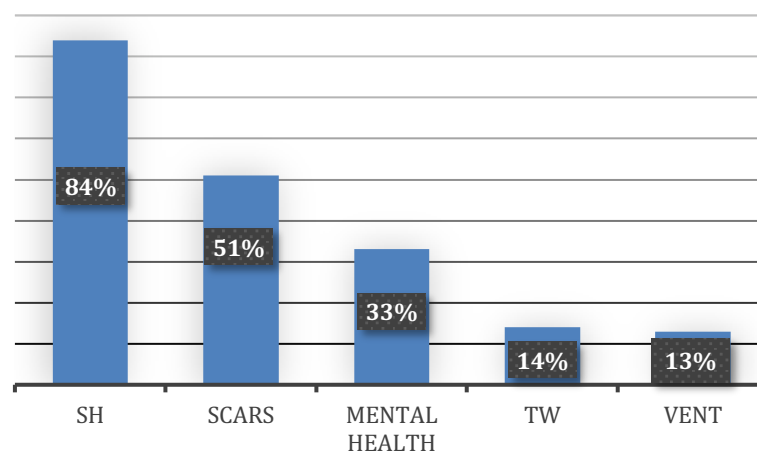
In addition to the aforementioned format, text can also be incorporated into the video itself, functioning as a standalone element that is not necessarily aligned with the title of the publication. In this instance, through observation, it was noted that the colour red was present in these texts to a considerable extent. Consequently, a coding was established with the objective of identifying a potential custom within the digital community of self-harm that may be part of its configuration. In the sample analysed, 20% of the videos exhibited this colour, in contrast to 80% of any other colour.

Figure 9. Text color

Source: Own elaboration, 2024.

In both the written text of the publication and the video, keywords or hashtags are employed, which were collated for the study through a writing field utilised in each publication analysed. This was done in order to include all those related to self-harming behaviour. The terminology employed by users to discuss NSSI is based on anglicisms, acronyms, or abbreviations. In this instance, the most frequently occurring words in the analysed publications, both in the title text and in the video, are as follows, with their respective meanings: The acronym SH stands for self-harm, while TW stands for trigger warning. The use of these abbreviations serves to inform the viewer of the content to be viewed. The term "mental health" is also employed. The term "vent" is used to signify the relief that viewing content about self-harming behaviour provides for some users.

This terminology allows the creation of a communication code that serves as a means of identification within the community of users who consume the self-harming content. It also serves as a barrier against the social network itself, thus avoiding restrictions and even circumventing parental control. Consequently, the utilisation of disparate hashtags and keywords serves to conceal this content and direct it exclusively to members of the community. Figure 10 illustrates the frequency of use of this terminology in the self-harm posts analysed in TikTok. The term "sh" is used in 84% of cases, representing the most frequently used expression. This is likely due to its general nature, encompassing all forms of self-harm. This observation is consistent with previous findings in the social network Twitter (Martínez-Pastor & Gaete-Salgado, 2023). In contrast, the term "scars" is represented in half of the publications. As previously indicated, it was the most frequently occurring NSSI in terms of the subject matter of the videos.

Figure 10. Frequency of keywords and hashtags

Source: Own elaboration, 2024.

A summary of the results obtained in the coding of the different elements of the video indicates that the data have been organised in accordance with the categories previously established in the analysis.

Firstly, the identity of the source uploading the content is considered. Secondly, the production of the video is analysed. Thirdly, the themes used, and the aesthetics detected are evaluated. Finally, the use of language and its functioning as a code of communication is examined. The categories and their corresponding variables were established in order to fulfil the previously established objectives.

5. Conclusions

This study was conducted under the hypothesis that self-harming communities are configured in relation to the use of a series of elements that configure their digital identity. Consequently, the primary objective was to devise a methodology for analysing the content published on the social network TikTok by young people who engage with and consume self-harming digital content, with the aim of understanding the configuration of these digital communities.

The design was approached through an analysis focused on four defined categories. Firstly, the identity of the source uploading the self-harming content to the social network was determined. This was analysed in terms of the profile picture they have on TikTok and whether their profile was a specific self-harming site. This approach enabled us to examine the characteristics of the first user to upload self-harming content with a view to identifying them. On the one hand, there are users who have real photos, and on the other hand, there are explicit profiles on NSSI, which lack personal photos and are often used as a means of venting.

Secondly, a category of video production was created in order to ascertain whether the users who typically upload self-harming content are the material authors of it or, conversely, whether they utilise other people's elements. This approach enabled us to ascertain the extent to which the author(s) of the content in question exercised authority over it and to what extent it was original. This involved the use and incorporation of linguistic codes belonging to the digital self-harming community. Additionally, we examined the creation and dissemination of challenges or viral challenges about self-harm on TikTok.

Thirdly, the content of the videos on the social network was analysed in order to ascertain the level of explicitness and the characteristics of the content. Our findings indicate that the depiction of NSSI on TikTok is nuanced and indirect, with self-harm rarely depicted visually. When it is, it typically involves scars from wounds that have already occurred.

Finally, the design of the strategy involved the study of the terminology used in the publications. It is notable that, in contrast to the video examples, wounds are mentioned with greater frequency in these publications. Consequently, a publication on the social network, which is insinuating, is combined with the textual element, which mentions the self-harming attitude but does not show it in the video. Furthermore, on some occasions, we have referred to the presence of the colour red in the words used. While this study is an approximation and a more extensive study is needed, including other variables, it could also be a subtle reference to blood or pain.

Furthermore, and without concluding the linguistic category, we have identified the utilisation of distinct expressions pertaining to NSSI, which constitute the codes employed by digital communities of self-harmers. These codes serve to provide their members with a sense of identification, circumvent the restrictions of the social network and evade parental control.

These strategies fulfil the secondary objectives of the categorical analysis of the TikTok posts, and the unveiling of the terminology used, thus fulfilling the main objective of this preliminary study, which is to develop a study strategy on self-harming digital communities.

In conclusion, it can be stated that the self-harming digital community is constituted through the use of subtle and suggestive publications, with minimal visual information and the utilisation of coded terminology.

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