ORIGINAL ARTICLE

Classifying coping strategies from suicide prevention safety plans

Zoe Daglas GradDipPsych[1] | Sinh Lu BSc (Hons)[2] | Daniel Gresham DPsych[2] |
Ruth Tatnell PhD[1] (iD) | Barbara H. Stanley PhD[3] | Glenn A. Melvin PhD[1]

[1]School of Psychology, SEED Lifespan, Deakin University, Geelong, Victoria, Australia

[2]Department of Psychiatry, School of Clinical Sciences at Monash Health, Monash University, Clayton, Victoria, Australia

[3]Department of Psychiatry, Columbia University, New York, New York, USA

Correspondence
Glenn A. Melvin, School of Psychology, SEED Lifespan, Deakin University, Geelong, VIC. 3220, Australia.
Email: glenn.melvin@deakin.edu.au

Abstract

Introduction: Understanding the specific strategies individuals use to cope with their suicidal thoughts may have implications for suicide prevention. This study developed a classification system of coping strategies and applied this system to individual coping behaviors documented in a safety planning intervention smartphone application called Beyond Now.

Method: 725 Beyond Now safety planning app users, aged 16 to over 55 years, entered coping strategies that were used to develop a classification system through content analysis. Entries were either user generated or selected from a list of suggested coping strategies, and 2960 entries were classified using the system.

Results: Our classification system featured 11 distinct descriptive categories, with media consumption being the most popular coping strategy among Beyond Now users, followed by relaxation and self-care activities, exercise and creative activities. More than half (57%) of the entries were suggested coping strategies with the remainder being user-generated entries (43%).

Conclusion: A wide range of coping strategies were entered into safety plans, with activities that aim to either distract or provide reductions in emotional arousal common. Future research is needed to evaluate the efficacy of the coping strategies listed in safety plans.

KEYWORDS

internal coping strategies, safety planning intervention, suicide prevention

INTRODUCTION

Suicide is a major public health issue that results in more than 700,000 deaths each year worldwide (WHO, 2021). Identifying and addressing potential risk factors for suicide can help to inform targeted suicide prevention efforts (Brown et al., 2000; Hawton et al., 2013). A salient risk factor for suicide is greater use of unhelpful coping strategies, for example, substance abuse, self-harm, and lesser use of helpful coping strategies, for example, seeking support, self-regulation to manage crisis situations (Ambrus et al., 2020; Kaslow et al., 2004; Li & Zhang, 2012; Sugawara et al., 2012; Tang & Qin, 2015). To address this, there have been sustained efforts in identifying and developing reliable mitigation strategies for helping individuals manage in the event of suicidal thoughts

or urges. For instance, the Safety Planning Intervention (SPI; Stanley & Brown, 2012) is a comprehensive and systematic approach to delivering help and maintaining safety for individuals at risk of suicide that includes a step where an individual can document a list of internal coping strategies (i.e., activities individuals can do without the assistance of another person to help themselves not to act on suicidal thoughts or urges). Understanding the specific internal coping strategies used by suicidal individuals is important as it may identify problematic strategies or reveal successful strategies.

Temporary distraction techniques can be an effective form of coping strategy, given suicidal thoughts and crises tend to be time-limited (Andión et al., 2012; Linehan, 2014; Linehan et al., 2006; Neacsiu et al., 2010). In an ecological momentary assessment study of 30 adolescents and young adults with a recent history of self-injury, Nock et al. (2009) found that when individuals experienced self-injurious or suicidal thoughts but did not engage in the behavior, they reported engaging in a range of potentially distracting behaviors (e.g., doing homework, using the computer, or going out, and talking to someone). A more recent study found that the use of distraction/positive activity-oriented coping strategies (e.g., keeping busy and positive thinking) reduces suicidal ideation in the short-term (Stanley et al., 2021). In the available literature, however, there is currently limited knowledge about the coping strategies that individuals identify they plan to employ in situ and/or at the time of a suicide crisis. Indeed, to the authors' knowledge, no study has used a bottom-up approach of reporting a typology of internal coping strategies suicidal people plan to use to manage while having suicidal thoughts.

The present study therefore examined the internal coping strategies documented by users of the Beyond Now safety planning app (Melvin et al., 2019), a digital adaptation of SPI (Stanley & Brown, 2012). A typology of internal coping behaviors system was developed and applied based on entries to the internal coping strategies step of Beyond Now.

METHODS

Design

The present study utilized a cross-sectional approach of inviting existing Beyond Now users to complete a user survey and securely share their digital safety plan with the research team. Qualitative responses from the steps of Beyond Now were explored along with a demographic survey. The investigation was conducted as part of a larger project examining the feasibility and usefulness of the Beyond Now smartphone app among community-based users. The study was approved by the Monash University Human Research Ethics Committee.

Participants

Participants were recruited via an affordance on the Beyond Now app. From the original sample of 2244 users who participated in the larger investigation, a total of 725 participants were included in the present study. To meet the eligibility criteria for inclusion in present analyses, individuals had to be aged 16 years and/or older, living in Australia, be self-reported users of the Beyond Now app for their own personal mental health and willing to share their safety plan data with research team. Individual app users were excluded from analyses if they responded that they were using Beyond Now to help someone they knew, were a health professional using the app for client or patient demonstration purposes, and/or did not consent to sharing their digital safety plan.

Materials

The Beyond Now smartphone app provides an app-based platform for users to create and update their safety plan, and share it with friends, family, and/or clinicians. Based on Stanley and Brown's (2012) hardcopy version of the SPI, Beyond Now comprises a series of instructions and structured steps for users to complete on their own and/or with the assistance of a support person or health professional: (1) My warning signs; (2) Make my space safe; (3) My reasons to live; (4) Things I can do by myself; (5) People and places I can connect with; (6) People I can talk to; and (7) Professional support. Each step allows users to generate their own free-text entries and/or select some of the app's pre-programmed suggestions. For example, step four of the app focuses on internal coping strategies and asks users to "List some activities to do by yourself" accompanied by a text description of "Doing things to distract yourself from suicidal thoughts can help keep you safe. List some of the things you like doing by yourself." Step four of the app includes optional pre-programmed suggestions ($n = 13$) such as "Listen to music," "Go for a walk outside," and "Take a shower or bath" (see Table S1 for a complete list of all pre-programmed suggestions). The app's feasibility and acceptability has been evaluated with adolescents and adults receiving care from a tertiary mental health service (Melvin et al., 2019). The vast majority reported that they accessed the app, and that it was easy to use.

Basic demographic information including age and gender was collected as part of the larger survey that investigated the feasibility and usefulness of the Beyond Now app.

Procedure

Data collection began in February 2017 and ceased in October 2017. After consenting to participate in the study, existing users of Beyond Now completed an online survey via the online survey platform Qualtrics about the app and were asked if they would allow anonymous access (i.e., exclusion of names and contact details) to their safety plan content for research purposes. The entries listed in the Beyond Now safety plans of individuals who consented were extracted from the app, collated as a comma-separated values file, and further de-identified before analysis to further ensure confidentiality and privacy of entries.

Data analysis

Content analysis was used to classify the entries in the Beyond Now app. All entries of participant's Beyond Now safety plan were reviewed by three members of the research team (GM, ZD, DG) to explore possible content categories (White & Marsh, 2006). From the data, broad codes were identified, collated, and generated into classification groupings, forming the initial coding framework (Cho & Lee, 2014). The initial framework was refined by the research team and consensus was reached regarding the framework's suitability and clarity. Categories were created using a bottom-up approach without consideration as to the efficacy, suitability or benefit to the user. Entries were classified into a generic category (e.g., creative activities category includes "photography," "knitting," and "editing videos") or a more specific or detailed subcategory (e.g., artistic subcategory included "Use new watercolour pad and markers" "Colouring in postcards").

Two researchers coded a random sample of 150 items as an initial test of the utility of the coding system. Suggested entries that users could access within the app and import into their plans, as well as free-text entries, were rated using the classification framework. Consensus was reached on any discrepancies within the coding of the data, with seven entries being discussed in depth in a team member meeting.

To evaluate inter-rater reliability of the finalized system, data from 50 participants (108 user-generated entries) were double coded by independent raters (ZD, DG). Cohen's Kappa revealed an excellent level ($\kappa = 0.94$,

$p < 0.05$) of agreement between the raters (McHugh, 2012). Subsequently, entries of all participants were coded (by ZD), and consensus was reached for vague or unclear entries ($n = 23$) which required further discussion among senior team members (GM, DG).

All internal coping strategy plan entries were classified. Descriptive statistics were performed on the participant's demographic information. The frequency of entries for each of the classifications of the coding system was also calculated.

RESULTS

Sample characteristics

The sample comprised 725 participants, 395 (54.5%) who identified as women, 315 (43.4%) as men, 13 (1.8%) as trans and gender-diverse and 3 (0.4%) who preferred not to specify. The sample was mainly young people: 163 (22.5%) aged 16–18 years, followed by 215 (29.7%) who were aged 19–24 years, 151 (20.8%) aged 25–34 years, 94 (13%) aged 35–44 years, 67 (9.2%) aged 45–54, and 35 (4.8%) aged 55 years and older.

Of the 725 participants who gave consent to access their digital safety plan data, 680 (93.8%) had at least one internal coping strategy entry in their safety plan. The 45 (6.2%) participants with no entry to this step comprised significantly more males ($n = 28$; 62.2%) than females ($n = 16$; 35.6%) ($\beta = -0.69$, $p < 0.05$). One participant, who did not include any entries in this step, identified their gender as non-binary (2.2%). Age was not associated with likelihood of entering an internal coping strategy into one's safety plan ($\beta = 0.06$, $p > 0.05$).

Subsequent analyses were completed using the safety plan data from 680 participants. The total number of entries listed within the safety plans was 2960 ($M = 3.46$, SD = 2.87), with the maximum number of entries given by a single participant being 28.

Classification framework

The content analysis led to the development of a classification framework for internal coping strategies featuring 11 distinct descriptive categories: (1) Creativity, art, and music, which refers to activities where an individual uses their imagination to create something or engage in a musical activity. (2) Exercise, sports, and gym, which refers to physical activities, exercising in the gym or engaging in a sport. (3) Relaxation, self-care, hygiene, and sensory experiences, which refers to sensory stimulation, relaxing activities, bathing, and therapeutic strategies. (4) Media

consumption, which refers to the consumption of digital media (e.g., digital screens and online activity), as well as print media (e.g., books and newspaper). (5) Productive activities refer to activities related to maintaining a household, schoolwork, and employment. (6) Animals and pets, which refer to spending time with animals and pets. (7) Travel, driving, and outdoors, which refers to traveling, spending time outside of the home, or reference to traveling to a specific location. (8) Religion, which refers to activities related to a specific religion. (9) Memories, thoughts, reminiscence, and feelings, which refers to thinking and looking back on past events, including photographs and memories. (10) Prescriptions, which refers to taking medication, a specific prescribed drug or a drug as needed. (11) Unconstructive and potentially risky behaviors, which refers to activities that may place an individual at risk, suicide-congruent and defeatist statements. Categories 1, 3, 4, 5, 7, 9, and 11 include subcategories to allow a more granular analysis; see Table 1. The framework also included a category encompassing other vague, miscellaneous, or uninterpretable entries that do not belong to any categories and a separate category for entries that were not internal coping strategies (e.g., spending time with a friend and going to the emergency department) and belonged elsewhere in safety plan.

Frequency of coping strategies

Of the 2960 entries, 1274 (43%) were user-generated and 1686 (57%) were suggested entries. The frequency of user-generated and suggested entries for each of the coding classifications are displayed in Table 2 and Figure 1. Media consumption had the largest number of entries (796 entries: 35.7% user-generated, 64.3% suggested). Common user-generated entries included reference to watching digital media and listening to music. Entries involving relaxing and engaging in sensory or therapeutic behaviors was the second largest category (613 entries: 31.0% user-generated, 69.0% suggested). Example entries for this category included "Sleep," "Make something yummy for lunch," as well as suggested entries such as "Take a shower or bath" and "Take some time out to treat myself to a small thing I usually enjoy." Exercise was the third most endorsed category (492 entries: 31.1% user-generated, 68.9% suggested) with suggestions such as "Go for a walk outside" and "Do some exercise." Creative activities including art and music made up a further category (334 entries: 45.8% user-generated, 54.2% suggested), with user responses such as "Knitting," "Arts and crafts," and "Play guitar/ukulele." Entries involving animals and pets comprised a separate category (214 entries: 38.3% user-generated, 61.7% suggested). Strategies that involved travel referred to a specific

location such as into nature accounted for 191 entries (48.2% user-generated, 51.8% suggested). Productive activities such as cleaning, cooking food to eat and work or study related activities were rarely included (83 entries: 100% user-generated). The classifications with the fewest entries were user-generated internal coping strategies that related to religion (9 entries), memories, thoughts, and feelings (10 entries), prescription medication use (7 entries) and a category that included apparently unconstructive or potentially risk strategies (15 entries) including illicit drug use and alcohol consumption. One hundred fifty-three user-generated entries were coded as being in the wrong step of the safety plan. Often, these entries referred to contacting mental health professionals and support people (e.g., "Go see my best friend"). Such entries may be helpful but are more applicable to later steps in a safety plan.

DISCUSSION

This study created a typology of internal coping behaviors and strategies based on Beyond Now safety planning app user entries. Overall, we found 11 distinct descriptive categories of internal coping behaviors and strategies, with some containing user entries that were more frequently observed (e.g., media consumption) than others (e.g., traveling and going outdoors). A substantial proportion of user entries also comprised pre-programmed suggestions in contrast to personalized free-text responses. The vast majority of coping strategies, when taken at face value, appeared to be helpful and aimed toward reducing distress or increasing distraction. However, the benefit gained or even potential harm from these strategies is unknown.

Media consumption (e.g., watching videos or listening to music/podcasts) was the category with the greatest number of entries in this sample population. During a suicidal crisis, distraction techniques have been shown to help individuals manage overwhelming and negative thoughts until the suicidal thoughts and urges pass (Stanley & Brown, 2012). As media consumption can be a key source of distraction (Koessmeier & Büttner, 2021), it may have a role in providing an absorbing experience that diverts attention away from negative and suicidal thoughts. While distraction techniques are a component of dialectical behavior therapy (DBT) for suicide risk (Linehan, 2014) and a study has found that reading books and watching media may act as protective factors against serious suicidal ideation (Kasahara-Kiritani et al., 2015), there is limited specific evidence to support the utility of media consumption in mitigating suicidal crises. It ought to be noted that certain social media may lower mood for some users (De Vries et al., 2018; Frison & Eggermont, 2017; Yuen et al., 2019) and in some instances may even encourage risk taking or

T A B L E 1   Internal coping strategies classification framework.

Category	Description	Example from participants
1. Creativity, art, and music	Creative or musical activities where an individual uses their imagination to create something or engage in a musical activity	"Knitting," "Take some photos," "Edit videos," "Build something"
Subcategories		
1.1 Artistic	Reference to artistic activities, including drawing, coloring in	"Coloring in postcards," "Paint," "Use new watercolor pad and markers," "Art"
1.2 Musical	Reference to writing music and playing a musical instrument	"Sing and play guitar," "Write and play music"
2. Exercise, sports, and gym	Reference to physical activities, exercising in the gym or engaging in a sport	"Dance," "Do some yoga," "Footy/basketball," "Go to the gym"
3. Relaxation, self-care, hygiene, sensory experience	Sensory stimulation, relaxing activities, and therapeutic strategies	"Put on makeup," "Sleep," "Hydrate," "Sensory modulation," "Cry it out"
Subcategories		
3.1 Touch	Reference to touch stimulation, including taking a shower or bath, or massaging body	"Hot or cold shower," "Wash my hair," "Use mini massage ball," "Massage therapy"
3.2 Gustation, olfaction	Olfaction or proprioceptive gustatory stimulation as pleasurable activities. Excludes actions related to preparing meals (coded 5.2)	"Make something yummy for lunch," "Have a cuppa," "Burn incense," "Smell cloves," "Eat"
3.3 Vestibular	Reference to vestibular stimulation involving repeated movements such as rocking back and forth	"Sit in rocking chair with blankets & rock myself back & forth"
3.4 Relaxation	Activities which lower arousal levels and promote a calm environment	"Take deep breaths," "Count from 1 to 4 and breathe," "Meditate"
3.5 Therapeutic strategies	Actions related to treating or reducing suicidal thoughts, distress, or mental illness. Excludes reference to calling or visiting a mental health professional (coded 13)	"Read over my reasons to live," "Look at care box," "Think things through rationally," "Change thought pattern"
4. Media consumption	Consumption of digital media (digital screens, online activity), as well as print media (books, newspaper)	"Research Europe," "Research cool geography or facts"
Subcategories		
4.1 Watching digital media	Watching movies, TV, YouTube, Netflix	"Watch a funny TV show," "Watch Netflix"
4.2 Internet and social media	Reference to social media websites and browsing the internet	"Facebook," "Tumblr," "Look through Pinterest for beauty looks," "Google stuff"
4.3 Games	Reference to playing games including video games, mobile games, and puzzles	"PS3," "Game," "Play Candy Crush," "Wii," "Play chess," "Puzzle"
4.4 Music, podcasts, audio	Listening to music, podcasts, or any audio. Excludes playing an instrument or writing music (coded 1.2)	"Listen to radio," "Listen to relaxation music in bed," "Music"
4.5 Reading	Reference to reading, includes physical books as well as digital newspapers and articles	"Read books that aren't sad," "Read news articles"
5. Productive activities	Reference to productive activities related to maintaining a household, school work and employment	"Find new music to put on my phone," "Do something with hands"
Subcategories		
5.1 Home-duties	Activities related to upkeep of personal space and household upkeep, including cleaning, and organizing home	"Chores," "Clean, wash up, organize," "Clean the house," "Work on my car," "Cleaning"
5.2 Food	References to food, including making beverage/meal as productive activity. Excludes consuming food as pleasurable activity (coded 3.2)	"Cook," "Bake," "Meal plan," "Preparing meals"
5.3 Study, homework, self-education, employment/ training	Reference to schoolwork, homework, study, or employment-related activities	"Homework," "Work," "Study," "Schoolwork," "Concentrate on studies"

TABLE 1 (Continued)

Category	Description	Example from participants
6. Animals and pets	Reference to spending time or playing with animals and pets. Excludes reference to calling or visiting a person (coded 13)	"Ride my horse," "Play with Twinkie," "Interact with animals," "Pat my dogs," "Horses"
7. Travel, driving, outdoors	Traveling, spending time outside of the house, or reference to a specific location	"Camp," "Exploring"
Subcategories		
7.1 Traveling	Reference to traveling by car, bike	"Go for a drive," "Take the boat out on the water," "Ride my motorbike," "Ride my bike"
7.2 Specific location	Reference to a specific location	"Go to the beach," "Sit at park," "Oppe shops," "Drive to Tweed to buy coloring in and makeup books"
7.3 Outdoors	Spending time outside, with focus on a particular aspect of environment	"Sunshine," "Spend time in the backyard," "Night sky viewing"
8. Religion	Activities related to the association with a specific religion.	"Try to follow my prayer rule," "Prayer," "Read a scripture," "Access bible passages," "Sing to God"
9. Memories, thoughts, reminisce, feelings	Reference to thinking and looking back on past events, including photographs and memories	"Look at a picture or movie of baby Lucy," "Go through my camera roll"
Subcategories		
9.1 Thoughts	Reference to cognitive activities including specific thoughts, specific memory, past event, or person	"Thinking about life for mum," "Think about memories," "Thoughts of family"
10. Prescriptions	Reference to taking medication, a specific prescribed drug or a drug as needed (PRN)	"Take a prn," "Take medication on time," "Take anti-anxiety tablet – 1 only and keep them in another room"
11. Unconstructive and potentially risky behaviors	Activities that may place an individual at risk, suicide-congruent and defeatist statements	"Be externally destructive to objects," "End it"
Subcategories		
11.1 Defeatist statements	Absent or apathetic entries	"Don't know," "Nothing," "Can't think of anything," "Nothing by myself I feel distant and not alive ATM"
11.2 Alcohol	Reference to alcohol consumption or "drinking"	"Drink a beer or two," "Drink," "Beers on the beach"
11.3 Illicit drugs	Drug use other than prescribed medication and consumption of alcoholic beverages	"Herb," "Smoke weed"
12. Other, vague, miscellaneous, uninterpretable	Vague and generalized entries which do not fit into a category or are unable to be interpreted	"Same as previous page"
Subcategories		
12.1 Vague	Vague entries that do not fit into categories 1–11	"Distraction," "Hobbies," "Stoicism"
12.2 Uninterpretable	Uninterpretable entries, including acronyms and different use of language and phrases.	"The pie chart," "Earn, Learn, Love," "Mtb," "Make TTG lists," "Not lol," "Pink"
12.3 What not to do	Reference to *not* doing an activity, or to *not stop* doing something	"Not drink to excess," "Don't be in bedroom," "Don't stop taking antidepressants"
13. Wrong step	Entries not applicable to Beyond Now step and belong elsewhere in safety plan	"Go see my best friend," "Call friends," "Maintain communication via text/phone hourly check in with Bella"

suicidal behavior, such as searching the internet for suicide methods (Biddle et al., 2016). Therefore, further investigation is necessary to explore the potential usefulness of media and how individuals can utilize media to reduce risk when feeling suicidal.

Use of therapeutic and self-care activities were the second most popular category. This category includes practices that *aim* to reduce emotional arousal and distress associated with suicidal crises and include relaxation exercises, mindfulness, and sensory self-soothing practices.

These strategies are components of established cognitive and behavioral suicide interventions, such as cognitive and behavioral therapy for suicide prevention (Stanley et al., 2009), mindfulness-based cognitive therapy (Kline et al., 2016), and DBT (Linehan, 2014), and may have been taught by a therapist in some instances. Relaxation techniques (e.g., progressive muscle relaxation, deep breathing, or visualization) can help in reducing tension and anxiety (Manzoni et al., 2008), which may in turn reduce suicidal ideation. Mindfulness may have its effect by improving problem solving skills, attentional control and reducing stress responses (Kline et al., 2016). Self-soothing sensory activities (e.g., aromatherapy, soothing music, or sensory stimulation) can also aid in emotion regulation (Sokmen & Watters, 2016), which may provide comfort for those struggling with suicidal thoughts. These findings suggest that therapeutic and self-care activities may be important resources for individuals in suicidal crises. It is also noted that some of these techniques (e.g., progressive muscle relaxation) may require practice outside of crisis situations before they are helpful during a crisis.

A diverse range of creative and artistic pursuits were entered into safety plans. Creative and art-based activities and interventions have been linked to improvement in mental health and well-being (Leckey, 2011). Engaging in such activities may facilitate expression of emotions (Aguilar, 2017) during a period of distress or may provide a sense of self-efficacy or success, which may counter a low sense of self-efficacy associated with suicidal ideation (Isaac et al., 2018). For example, an Australian study of Aboriginal prisoners found that participation in Aboriginal art classes was associated with a reduced need for suicide and self-harm risk assessments, potentially due to increased self-confidence and feelings of pride (Rasmussen et al., 2018). By providing alternative channels for emotional expression and a sense of purpose, creative and artistic activities may serve as an important component of safety planning interventions.

About half of the entries were pre-populated suggestions in the app, compared with user-generated entries. While this finding may, in part, suggest user endorsement of the app's pre-populated suggestions, it also means that plans were less likely to be personalized to the user, as the pre-populated suggestions are generic, for example, "Be creative (e.g., drawing, painting)." Personalized safety plan entries are considered to be higher quality, and having a higher quality plan has been associated with better clinical outcomes, such as fewer subsequent psychiatric hospitalizations (Gamarra et al., 2015). Some of the pre-programmed suggestions in the Beyond Now app were kept intentionally general (e.g., "Take some time out to treat myself to a small thing I usually enjoy") to prompt further user personalization. Thus, it may be that while users may have something specific in mind when selecting the suggestion, it is unclear whether these were able to be recalled during a crisis. Evaluating the quality of user entries and their association with clinical outcomes was beyond the scope of the study. Further research may also explore the efficacy and benefits associated with using the suggested strategies listed in the Beyond Now app compared with user-generated entries.

The use of prescription medications (e.g., taken pro re nata) was identified as a coping strategy to manage suicidal thoughts and/or difficult emotions by small number of individuals. Several pharmacotherapies have some evidence of efficacy in reducing suicidal ideation (e.g., antidepressants, lithium, and ketamine; Mann et al., 2021); however, these medications either do not provide immediate symptomatic relief upon administration (e.g., antidepressants and lithium) or cannot be self-administered as is the case with intravenous ketamine, which may have a rapid effect (Hochschild et al., 2021). Thus, the benefit of such medications as listed on these safety plans to avert a suicidal crisis is unknown. Moreover, any beneficial impact of medication during a crisis needs to be weighed against the risks, such as overdose. For example, a recent study from Colorado found that exposure to benzodiazepines around the time of death by suicide was particularly high in females (34%; Ghosh et al., 2020). Additionally, benzodiazepines may reduce distress in the short term but be counterproductive toward managing anxiety in the longer term (Westra et al., 2002).

Contacting professional health services and other social contacts made up a small portion of entries in step four of the Beyond Now app. These entries would have more appropriately belonged to the subsequent steps of the app, where external supports are drawn upon after internal coping strategies are exhausted. This finding suggests a potential misunderstanding of the Beyond Now safety plan process, or confusion about what step four of the app is asking users to input. This is further reflected in the minority of entries that were vague and unhelpful, such as "Same as previous step" or "Nothing." Therefore, future versions of the Beyond Now app may potentially benefit from further clarification and improved guidance for users, to ensure accurate and higher quality entries completion of this step. This is particularly important since many users of Beyond Now may create their personalized safety plan independently without the help from a clinician relying on the app for guidance and suggestions.

The present study had a few limitations. While the aim of the study was to classify safety plan entries, the use and effectiveness of these strategies to reduce suicide risk was not measured and is unknown. Hence, a plan that

TABLE 2 Beyond Now user entries by category and subcategory.

Category	User-generated, n (%)	Suggested, n (%)	Total, n (%)
Creativity, art, music			
Generic	54 (1.8)	83 (2.8)	137 (4.6)
Artistic	67 (2.3)	98 (3.3)	165 (5.6)
Musical	32 (1.1)	–	32 (1.1)
Total	153 (5.2)	181 (6.1)	334 (11.3)
Exercise, sports, gym	153 (5.2)	339 (11.5)	492 (16.6)
Relaxation, self-care, sensory experience			
Generic	64 (2.2)	102 (3.4)	166 (5.6)
Touch	33 (1.1)	210 (7.1)	243 (8.2)
Gustation, olfaction	34 (1.1)	–	34 (1.1)
Vestibular	3 (0.1)	–	3 (0.1)
Relaxation	45 (1.5)	111 (3.8)	156 (5.3)
Therapeutic strategies	11 (0.4)	–	11 (0.4)
Total	190 (6.4)	423 (14.3)	613 (20.7)
Media consumption			
Generic	9 (0.3)	–	9 (0.3)
Watching digital media	107 (3.6)	239 (8.1)	346 (11.7)
Internet, social media	14 (0.5)	–	14 (0.5)
Games	43 (1.5)	–	43 (1.5)
Music, podcasts, audio	60 (2)	273 (9.2)	333 (11.3)
Reading	51 (1.7)	–	51 (1.7)
Total	284 (9.6)	512 (17.3)	796 (27)
Productive activities			
Generic	13 (0.4)	–	13 (0.4)
Home-duties	29 (1)	–	29 (1)
Food preparation	21 (0.7)	–	21 (0.7)
Study, homework	20 (0.7)	–	20 (0.7)
Total	83 (2.8)	–	83 (2.8)
Animals and pets	82 (2.8)	132 (4.5)	214 (7.2)
Travel, outdoors, driving			
Generic	20 (0.7)	–	20 (0.7)
Traveling	22 (0.7)	–	22 (0.7)
Specific location	19 (0.6)	–	19 (0.6)
Outdoors	31 (1)	99 (3.3)	130 (4.4)
Total	92 (3.1)	99 (3.3)	191 (6.5)
Religion	9 (0.3)	–	9 (0.3)
Memories, thoughts, feelings			
Generic	6 (0.2)	–	6 (0.2)
Thoughts	4 (0.1)	–	4 (0.1)
Total	10 (0.3)	–	10 (0.3)
Prescription medications	7 (0.2)	–	7 (0.2)
Unconstructive, potentially risky			
Generic	5 (0.2)	–	5 (0.2)
Negative statements	5 (0.2)	–	5 (0.2)

TABLE 2 (Continued)

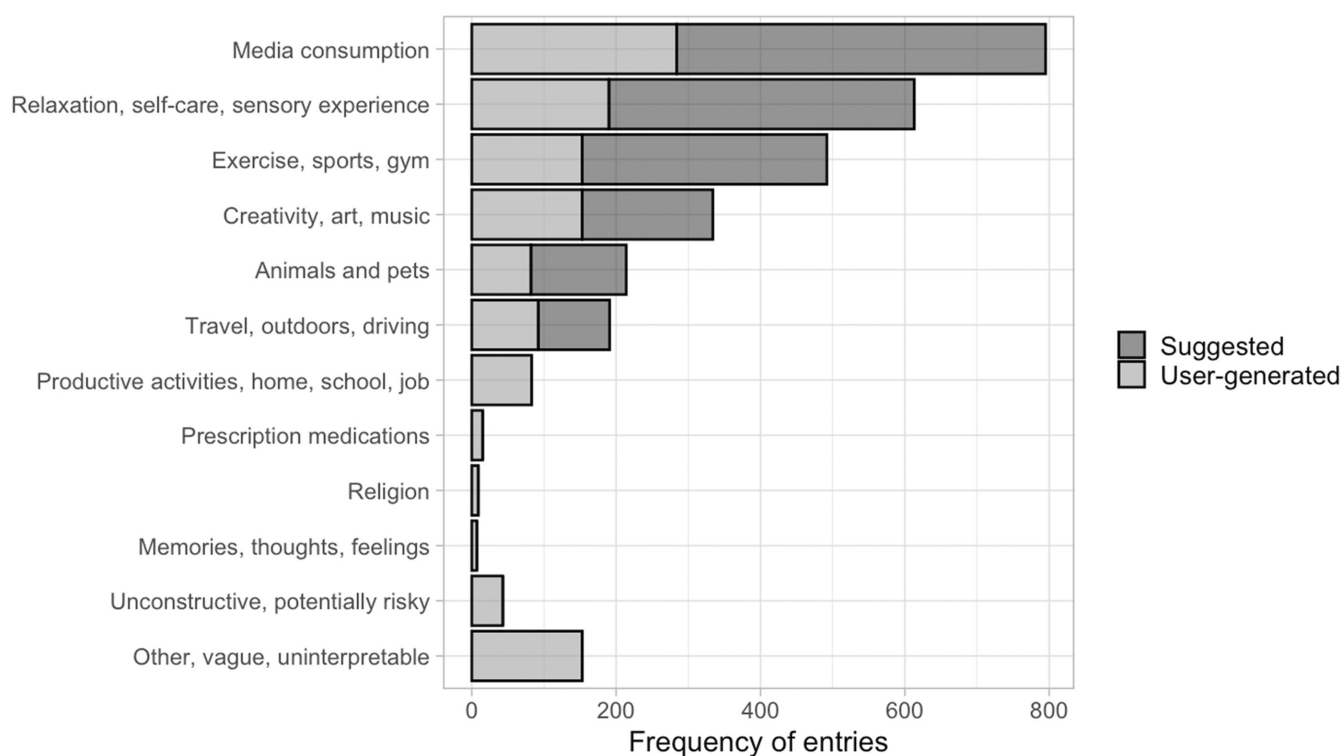| Category	User-generated, *n* (%)	Suggested, *n* (%)	Total, *n* (%)
Alcohol	3 (0.1)	–	3 (0.1)
Illicit drugs	2 (0.1)	–	2 (0.1)
Total	15 (0.5)	–	15 (0.5)
Other, vague, uninterpretable			
Generic	2 (0.1)	–	2 (0.1)
Other	14 (0.5)	–	14 (0.5)
Uninterpretable	19 (0.6)	–	19 (0.6)
What not to do	8 (0.3)	–	8 (0.3)
Total	43 (1.5)	–	43 (1.5)
Wrong step	153 (5.2)	–	153 (5.2)
Total	1274 (43)	1686 (57)	2960 (100)

FIGURE 1 Coping strategies in Beyond Now User entries by categories and suggested/user-generated entries. Frequency distribution of coping strategies by categories using Beyond Now user entries. User entries were also stratified by suggested (pre-programmed suggestions in app that were selected by users) and user-generated (free-text entries generated by users). Note that the Beyond Now app does not include any suggestions for categories, "Productive activities," "Prescription medications," "Religion," "Memories, thoughts, feelings," "Unconstructive, potentially risky" and "Other, vague, uninterpretable".

includes helpful and safe coping strategies is of little use if these strategies are not used in the lead up to or during a suicidal crisis. Alternatively, during a crisis, different coping strategies may be used to those listed in a safety plan. Future longitudinal research could measure the extent to which strategies listed within plans are used. Moreover, it is possible that some coping strategies while appearing to be helpful may have been counterproductive or even increased risk. For example, "looking through old photos" may have inadvertently included photos of an ex-partner leading to feelings of sadness and/or rejection. Some of these possible risks can be mitigated through developing a safety plan with a support person who can query the likelihood that a coping strategy will be helpful and safe. Opportunities exist for a similar functionality to be built into a safety plan app using a structured chat-bot or

conversational artificial intelligence that could support the user to only include helpful strategies. It remains unclear how representative the study participants were of the population of Beyond Now app users. It was difficult to determine whether some names included in safety plan entries referred to people or pets.

This study was motivated by the lack of exploration of safety planning content, particularly the specific internal coping strategies individuals identify they will or can employ in situ and/or at the time of a suicide crisis. Our findings suggests that most participants appear to have had appropriately engaged in this step of their Beyond Now safety plan. Given personalization appears to be integral to safety plan quality, further research is warranted to determine the relative efficacy of the suggested strategies listed in the Beyond Now app and whether users adhere to their plan during times of distress. This has importance in ensuring that strategies entered into a Beyond Now safety plan are helpful for suicidal individuals when in crisis.

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CONFLICT OF INTEREST STATEMENT

All authors declare that they have no conflicts of interest.

DATA AVAILABILITY STATEMENT

G. A. M. had full access to all the data collected during the study and takes responsibility for the integrity of the data and the accuracy of the data analysis.

ORCID

Ruth Tatnell https://orcid.org/0000-0001-6068-9864

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SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

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