

Evaluating emotional regulation and comorbidities in multiple sclerosis: Insights from a unified protocol treatment case study

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Abstract

This case study presents the application of the Unified Protocol (UP) in a patient dealing with emotional regulation problems in the context of physical health challenges like overweight or obesity, who also was diagnosed with Relapsing-Remitting Multiple Sclerosis (RRMS). The patient, identified as MK, participated in sessions that employed cognitive-behavioral techniques aimed at improving emotional regulation. This intervention was chosen due to its potential to influence MK's anxiety and depression symptoms, which were presumed to be exacerbated by emotional dysregulation. The treatment proved effective in enhancing MK's emotional regulation of her anxiety and depressive symptoms. The UP sessions were tailored to address emotional challenges and the physical complexities associated with RRMS. This case study is part of an ongoing Randomized Controlled Trial (RCT) testing the efficacy of the UP in patients with RRMS and obesity using a group intervention approach. The pre-registration for this Randomized Controlled Trial (RCT) can be found at the following link: https://osf.io/sr4bx/?view_only=bcbcff9e43ac4f00b557313442739dca This study highlights the versatility of the UP in managing patients with multiple transdiagnostic symptoms, particularly those involving complex interactions between physical and emotional health issues. Findings suggest that integrating the UP can significantly benefit patients with neurological conditions, offering an integral approach that considers both mental and physical health components. This case study provides valuable insights into the adaptability of cognitive-behavioral interventions in complex clinical scenarios, suggesting further exploration into their broader application in similar contexts.

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I. Theoretical and Research Basis for Treatment

Multiple Sclerosis (MS) is a degenerative disease affecting the central nervous system, primarily targeting the myelin sheath and eventually impacting axons, neuronal bodies, and synapses (Polman et al., 2011; Rumrill & Roessler, 2015). This results in symptoms such as pain, fatigue, impaired ambulation, and cognitive difficulties (Thompson et al., 2018), which reduce quality of life (Gil-González et al., 2020). MS often begins between ages 20 and 40 and can lead to significant disability over time (Habbestad et al., 2024). Approximately 2,221,180 people are diagnosed with MS worldwide, with a prevalence rate of 30 per 100,000 population (Wallin et al., 2019).

The most common subtype, Relapsing-Remitting Multiple Sclerosis (RRMS), accounts for about 80% of MS cases. RRMS features episodic neurological issues affecting motor, visual, cerebellar, and spinal cord systems. It starts with clinical relapses with near or complete recovery, but overtime recovery may be incomplete, and disability often accumulates (McGinley et al., 2021). Approximately 20% of patients with RRMS develop progressive neurologic decline later in the disease and transition to Secondary Progressive Multiple Sclerosis (SPMS) (McGinley et al., 2021; Rumrill & Roessler, 2015). This progression highlights the need to address MS medically and consider the socio-economic context of patients.

Chile lacks nationwide epidemiological data on MS, but local studies show prevalence rates of 11.7 and 13.4 per 100,000 in Santiago and Magallanes, respectively (Henríquez et al., 2022). Research identifies biological, socioeconomic, and healthcare factors as determinants of MS severity, with adverse outcomes for those receiving public healthcare or with lower incomes (Ciampi et al., 2023). This is significant given that 78.7% of Chileans use public healthcare amidst substantial economic inequality (Sánchez, 2023). MS patients face higher unemployment, fewer full-time jobs, and lower income, exacerbating disparities as disability worsens (Kavaliunas et al., 2021, 2022). This points to a critical need for interventions addressing both the medical and socio-economic challenges of MS. These complexities highlight the need for comprehensive treatment approaches.

MS patients often have comorbidities that complicate their condition. Notably, obesity and overweight are prevalent issues. A 2006 survey reported that 25% of 8983 respondents were obese, and 33% were overweight (Marrie et al., 2009). Additionally, a local analysis indicated that 48% of RRMS patients are overweight, with 19% being obese (Guevara et al., 2020). This is concerning because overweight and obesity exacerbate disability and the risk of relapses in RRMS patients (Tettey et al., 2014). Given the unpredictable onset and progression of this illness (Giovannetti et al., 2017), its social and financial impacts, and a possible contribution of neuroendocrine (such as the hypothalamic-pituitary-adrenal axis), neuroinflammatory and neurotrophic mechanisms affected by the MS (Margoni et al., 2023; Pucak et al., 2007), patients often exhibit elevated anxiety and depressive symptoms (Ponzio et al., 2023). In response, they frequently adopt maladaptive coping strategies (i.e. escape avoidance coping strategy, self-blame, substance abuse and denial coping) to manage their distressing emotions (Bahmani et al., 2022). In addition, these behaviors, such as emotional eating, can affect health and quality of life. Emotional eating refers to the tendency to overeat in response to states of emotional arousal such as anger, fear, and anxiety (Van Strien et al., 1986). This behavior is associated with the

consumption of sweet and high-calorie foods (Dakanalis et al., 2023) and is considered a possible risk factor for the development of obesity (Benbaibeche et al., 2023). The intertwined nature of physical and psychological health in MS demands a treatment approach that addresses both aspects.

The Unified Protocol (UP, Barlow et al., 2019) is a promising intervention to address these multifaceted issues that incorporates a set of therapeutic techniques and methods that have been proven effective in managing emotional dysregulation, which is a problem at the root of multiple psychological diagnoses, called emotional disorders (Bullis et al., 2019), but also others, such as eating disorders (ED; Thompson-Brenner et al., 2019), chronic pain (Wurm et al., 2017), substance use disorders (Ciraulo et al., 2013), that also includes emotional regulation difficulties. The introduction of UP represents a novel approach in the context of MS due to its focus on the core psychological processes common to various emotional disorders. It can address psychological difficulties that may underlie the primary physiological impairment of MS. Two previous studies have applied the UP to MS patients, laying the foundation for highlighting the need for comprehensive treatment approaches and care strategies for individuals managing MS (Nazari, Aligholipour, & Sadeghi, 2020; Nazari, Sadeghi, et al., 2020)

Taking all of the above, this study aims to explore the application of UP in enhancing emotional regulation among patients with RRMS, specifically focusing on mitigating the tendency towards emotional eating, thereby improving overall quality of life. The aims of the present study are: (a) to present a case of a patient with RRMS, obesity, anxiety, and depressive symptoms in which the UP was applied, (b) to describe the adaptations of the UP to adjust the intervention to the particularities of RRMS and habit change, and (c) to analyze the changes of MK obtained from the different treatment sessions. We anticipate a reduction in psychological symptoms following the UP treatment, maintenance of these improvements in the short term (3-month follow-up), and high patient satisfaction with the intervention.

To implement this, a group intervention format was used, based on the adaptations proposed by Osma et al. (2018). Sessions lasted an average of 2 hours and were held once a week, with no more than 8 participants. The content covered was the same as in the individual format but with a focus on linking topics to the experiences of all (or nearly all) participants. This was done through direct questions about their experiences, always aligned with their objectives. The treatment team received direct supervision before each session from J. O., who is a certified UP Researcher/Trainer by the Unified Protocol Institute.

2. Case Introduction

MK, a pseudonym, is a 33-year-old single woman with a bachelor's degree in music, working as a music education teacher at a primary school. She has a middle-class income and a good support network, living with a roommate. The diagnosis of RRMS, received over a year before the psychological intervention, was a shock, but she continued working. MK also deals with obesity (with a BMI of 37.18), asthma; and depression, the latter self-reported by the patient, for which she takes antidepressants and anxiolytics. No clinical interviews were carried out due to resource constraints. Her MS treatment includes teriflunomide. The diagnosis prompted MK to reconsider her high-stress lifestyle and prioritize her health.

The therapist (M.S.), a graduate psychologist with a PhD in psychology and over eight years of clinical experience, conducted the intervention. She is trained in cognitive behavioral therapy and the UP. The therapist was supervised by a certified trainer and researcher from the Unified Protocol Institute.

3. Presenting Complaints

At her initial evaluation, MK, diagnosed with RRMS, reported struggling with multiple health conditions. Her MS diagnosis led her to reconsider her lifestyle and stress management. Despite these efforts, she faced significant emotional challenges, including mood swings, emotional eating, fatigue, and stress, affecting her personal and professional life. MK also had concerns about social interactions, particularly with students' parents and adapting her teaching methods. Relationship issues further added to her distress. These complaints highlight the complex interplay between her chronic condition, mental health, professional duties, and personal life, emphasizing the need for a comprehensive therapeutic approach.

4. History

MK first reported having been diagnosed with obsessive-compulsive disorder (OCD), ED, and depression, conditions that she had been managing before the onset of RRMS. As these diagnoses were made at external institutions and not within the facility conducting this study, we were unable to formally verify them. Her depressive symptoms were present prior to the RRMS diagnosis but worsened significantly after receiving it, contributing to a cycle of emotional distress and maladaptive coping strategies, such as emotional eating.

The diagnosis of RRMS was made a year ago, further impacting her mental health and daily functioning. Following her diagnosis, MK initially took a medical leave of absence to adjust to her new condition and manage the emotional impact of the news. After this period, she attempted to resume her normal life, but as the disease progressed, she faced increasing difficulties related to obesity, depression, and anxiety, which further aggravated the course of her MS. Given these challenges, MK sought psychological treatment to improve her situation and gradually reduced her professional workload to better manage her symptoms.

Despite her complex clinical presentation, her mental health treatment does not interfere with her RRMS management. The use of antidepressants and anxiolytics was carefully coordinated with her medical team to ensure compatibility with her RRMS treatment, which includes teriflunomide. This multidisciplinary approach aims to balance both her neurological and psychiatric conditions while addressing obesity and asthma, factors that also influence her overall health.

5. Assessment

Before the treatment intervention, MK underwent a comprehensive assessment to understand her eating behaviors, psychological impairment, quality of life, health status, self-esteem, emotional distress, emotion regulation difficulties, and specific symptoms of anxiety and depression.

Participants were interviewed by their treating neurologist for the diagnosis of RRMS, who gathered sociodemographic data and evaluated their current health condition and obesity. After that, the patient was referred to begin treatment with UP as she met the inclusion criteria of the RCT that originates this study: (1) being over 18 years old; (2) having the diagnosis of RRMS and being overweight (with a BMI $> 25 \text{ kg/m}^2$ and $< 29.9 \text{ kg/m}^2$) or obese (with a BMI $\geq 30 \text{ kg/m}^2$); (4) speaking fluent Spanish; (5) being up to date with their pharmacological treatment for RRMS; (6) understanding and accepting what is stated in the informed consent. Given the difficulties associated with recruiting participants with these characteristics, we only excluded participants with Body Mass Index under 25 and scores under 6.5 in the Expanded Disability Status Scale (EDSS; Kurtzke, 1983). For this reason, she was not excluded for being under treatment by another psychologist.

After agreeing to participate, she was contacted and asked if she could complete the following instruments:

Main Outcomes

The Overall Depressive Severity and Impairment Scale (ODSIS; Bentley et al., 2014; Spanish validation by Osma et al., 2019) is a 5-item self-report questionnaire designed to assess depressive symptoms and their impact, and it is also used to track treatment progress. Responses are provided on a 5-point Likert scale from 0 (no depression) to 4 (constant depression). The total score ranges from 0 to 20, with higher scores indicating greater depressive presence and interference. A clinical cut-off score of 10 has been established for a Spanish sample, with those with 10 or more points being severely depressed. The scale demonstrates good internal consistency ($\alpha = 0.94$).

The Overall Anxiety Severity and Impairment Scale (OASIS; Norman et al., 2006; Spanish validation by Osma et al., 2019) is a 5-item self-report tool for assessing anxiety symptoms and their impact and is useful for monitoring treatment progress. Items use a 5-point Likert scale from 0 (no anxiety) to 4 (constant anxiety). The total score ranges from 0 to 20, with higher scores indicating greater anxiety presence and interference. A clinical cut-off score of 10 has been validated in a Spanish sample with those with 10 or more points being severely anxious. The scale demonstrates adequate internal consistency ($\alpha = 0.87$).

Emotional and Psychological Functioning

The Symptom Checklist-90-Revised (SCL-90-R; Derogatis, 1994; Chilean validation by Gempp & Avendaño, 2008) is a 90-item self-report tool that assesses psychological distress and severity. It consists of 9 subscales—somatization, obsessive-compulsive, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, and psychoticism—plus three global indices: the Global Severity Index, the Positive Symptom Total Index, and the Positive Symptom Distress Index. Items use a 5-point Likert scale ranging from 0 (no symptoms) to 4 (maximum symptoms). Scores for each subscale and the three global indices range from 0 to 4, with higher scores indicating more severe psychological symptoms. The Chilean version shows adequate internal consistency ($\alpha = 0.66$ – 0.92).

The Difficulties in Emotion Regulation Scale (DERS; Gratz & Roemer, 2004; Chilean validation by Guzmán-González et al., 2020) is a 25-item self-report questionnaire that assesses difficulties in emotional regulation. It includes five factors: emotional dyscontrol, emotional rejection, emotional interference, emotional inattention, and emotional confusion. Responses are recorded on a 5-point Likert scale from “almost never” (1) to “almost always” (5). Total scores range from 25 to 125, with higher scores indicating greater difficulties in emotional regulation. The Chilean version demonstrates adequate internal consistency ($\alpha = 0.92$) and strong construct validity. A cut-off score of 73 indicates significant emotional regulation difficulties.

The Multidimensional Emotional Disorders Inventory (MEDDI; Rosellini & Brown, 2019; Spanish validation by Osma et al., 2021) is a 49-item questionnaire that measures 9 transdiagnostic emotional disorder dimensions: Neurotic and Positive temperaments, depressed mood, autonomic arousal, somatic and social anxiety, intrusive cognitions, traumatic re-experiencing, and avoidance. Responses are recorded on a 9-point Likert scale ranging from 0 (not characteristic of me) to 8 (extremely characteristic of me). Scores for each dimension are expressed as percentages, ranging from 0 to 100. Higher scores indicate greater symptom severity. The Spanish version shows adequate reliability ($\alpha = 0.66$ – 0.92) across subscales.

The Rosenberg Self-Esteem Scale (RSS; Rosenberg, 1965; Chilean validation by Rojas-Barahona et al., 2009) is a 10-item self-report questionnaire that assesses an individual's self-

esteem. It consists of two subscales: one with 5 positively oriented statements and another with 5 negatively oriented statements. Responses are provided on a 4-point Likert scale from “strongly disagree” (1) to “strongly agree” (4), with reverse scoring for the negative statements. The total score ranges from 10 to 40, with higher scores indicating greater self-esteem. The Chilean version, validated in a general sample, demonstrates adequate internal consistency ($\alpha = 0.75$).

Eating Behaviors and Quality of Life

AQ4 The Multidimensional Body–Self Relations Questionnaire (MBSRQ; [Cash, 1990](#); Chilean validation by [Cruzat-Mandich et al., 2017](#)) is a 69-item self-report instrument that assesses participant attitudes toward body image, dieting behavior, and weight perception. It includes the following dimensions: ‘Orientation to physical activity’, ‘Evaluation of appearance’, ‘Concern with overweight’, ‘Orientation towards appearance’, ‘Orientation towards health’, ‘Evaluation of illness’, and ‘Orientation towards illness’. Items are rated on various 5-point Likert scales, ranging from ‘strongly disagree’ (1) to ‘strongly agree’ (5), ‘never’ (1) to ‘very often’ (5), or ‘very underweight’ (1) to ‘being obese’ (5). Higher scores on ‘Orientation to physical activity’, ‘Evaluation of appearance’, and ‘Orientation towards health’ indicate a healthier relationship with the body, while the opposite is true for the other subscales. The Chilean version demonstrates good internal consistency ($\alpha = 0.70–0.92$) across dimensions.

The Dutch Eating Behavior Questionnaire (DEBQ; [Van Strien et al., 1986](#); Chilean validation by [Andrés et al., 2017](#)) is a 33-item self-report tool designed to assess three types of eating behaviors: dietary restraint, emotional eating, and external eating. These behaviors are measured through three subscales. Responses are provided on a 5-point Likert scale ranging from ‘never’ (0) to ‘very often’ (5), with the exception of item 21, which is reverse-scored. The total score ranges from 0 to 165, with higher scores indicating greater engagement in the specified eating behaviors. The Chilean version demonstrates high internal consistency ($\alpha = 0.87–0.97$) across the subscales.

The Quality-of-Life Scale (QOLS; [Burckhardt et al., 1989](#); Spanish validation by [Latorre-Román et al., 2014](#)) is a 16-item self-report questionnaire that evaluates overall life satisfaction across various domains, such as physical and material well-being, and personal fulfillment. Items are grouped into three factors: entertainment and socialization (Factor 1), health, work, and independence (Factor 2), and relationships and material comfort (Factor 3). Responses are recorded on a 7-point Likert scale, ranging from “terrible” (1) to “delighted” (7), with higher scores indicating better quality of life. The total score ranges from 16 to 112. The Spanish version (from Spain) shows high internal consistency ($\alpha = 0.88$).

The EuroQoL EQ-5D ([Brooks, 1996](#); Chilean validation by [Superintendence of Health, 2005](#)) assesses an individual’s self-perceived health status across five dimensions: mobility, self-care, usual activities, pain/discomfort, and anxiety/depression. Responses are on a 3-point Likert scale: no problems (1), moderate problems (2), and extreme problems (3). The health-related quality of life index (HRQOL-i) is anchored at 0 (representing “a state as bad as being dead”) and 1 (representing “full health”). However, negative values are possible, indicating a state worse than a state as bad as dead. An additional item includes the EQ visual analogue scale (EQ-VAS), where patients rate their health on a scale from 0 (the worst imaginable health) to 100 (the best imaginable health). The Chilean version demonstrates adequate reliability (Intra-class correlation coefficient = 0.70).

Treatment Satisfaction

The Satisfaction with Treatment Questionnaire (STQ; [Larsen et al., 1979](#); Spanish adaptation by [Ferrerres-Galán et al., 2022](#)) evaluates patient satisfaction with received services. The adapted

version retains 6 of the original 8 items: perceived treatment quality, fit to previous expectations, likelihood of recommending to loved ones, usefulness for coping with problems, general satisfaction, and likelihood of choosing this treatment type again. An additional item measures the discomfort caused by the intervention. Responses are provided on a 4-point Likert scale from 0 (Bad/Not at all) to 4 (Excellent/Very much). The original instrument demonstrated Cronbach's alpha ranging from 0.86 to 0.94 (Ferreres-Galán et al., 2022).

6. Case Conceptualization

To frame MK's case within the UP framework (Bullis et al., 2019), it's crucial to identify: (a) intense, unpleasant emotions like anger, anxiety, and depression; (b) aversive reactions such as guilt and judging herself; and (c) avoidance behaviors like overeating, postpone, procrastination, and avoiding places.

MK presents a complex clinical situation in which RRMS affects different areas of her body, including her central nervous system. This has led to physical consequences, such as experiencing fatigue and, at times, exhaustion, which in turn negatively impacts her motivation and concentration. Fatigue, cognitive changes, and uncertainty about the course of the disease contribute to the intensification of maladaptive emotional responses. MK faces challenging familial and job difficulties with intense emotional responses and aversive reactions. She reports a lack of energy and motivation, linked to a loss of purpose, constant anxiety, and negative thoughts. In addition to RRMS, MK reports having been diagnosed with OCD, ED, and has a history of depression and anxiety. These disorders share a common foundation of impaired emotional regulation, characterized by maladaptive coping strategies such as rumination, avoidance, and rigid control over her environment. Regarding OCD, the anxiety triggered by intrusive thoughts and unsuccessful attempts at control can increase MK's emotional vulnerability, particularly in contexts where the disease introduces uncertainty. In relation to ED, emotional eating is used as a way to regulate emotions, which is reinforced and maintained due to the immediate relief it provides in moments of distress, making it persist due to its short-term rewards. However, in the long term, the consequences are negative for both her physical and emotional health, perpetuating long-term emotional distress, exacerbating anxiety and depression.

As can be seen, MK has been diagnosed with several medical and mental health conditions throughout her life. Regarding the diagnoses of OCD and ED, MK does not specifically recall when she was informed or the exact name of the diagnoses. Additionally, when she receives the MS diagnosis and is referred to the public health system for treatment, she is also informed that she will be referred for care to address her depressive symptomatology. From that point on, MK is evaluated by a family physician who oversees her pharmacological treatment for mental health issues and receives psychological treatment every two weeks to manage her depression. When MK begins participating in the UP intervention, her psychological treatment is changed to once a month.

Regarding pharmacological treatment, MK reported strictly adhering to the following regimen: desloratadine (dose not reported) and Budesonide (inhaler) for her allergies and asthma, metformin (1000 mg) to regulate her blood glucose, contraceptives (gestodene 75 MCG / ethinylestradiol 30 MCG), antidepressants (fluoxetine 40 mg), and anxiolytics (clonazepam, dose not reported, for emergency use only), all of which may influence her emotional and behavioral state. Specifically, antidepressants may contribute to weight gain and fatigue, which could exacerbate her health concerns and reinforce body image worries. Conversely, anxiolytics help reduce anxiety, potentially decreasing the perceived need to confront emotionally distressing situations. This last point is particularly relevant in the context of the UP, where gradual exposure to emotions is a central strategy for therapeutic change.

Therefore, given that medications, particularly antidepressants and anxiolytics, affect how MK feels, the patient is advised to pay special attention to her pharmacological regimen whenever there are changes, whether due to a reduction or adjustment of medications. Such changes may lead to shifts in her mood, making it especially important to apply the techniques learned during the intervention with the UP at these times.

During initial sessions, she struggles to manage intense emotions in her professional and personal life, leading to frustration, inadequacy, and sadness, along with physical symptoms like tension and catastrophic thinking. She also exhibits behaviors like food binges and excessive time in bed. The UP's flexible, modular approach suits MK's needs, offering a structured yet adaptable framework for developing adaptive emotion-regulation strategies. This approach supports MK in breaking her cycle of avoidance and distress, fostering effective engagement in her professional roles, personal relationships, and overall health management.

7. Course of Treatment and Assessment of Progress

Treatment Plan

The UP adapted consisted of 9 modules, 14 group sessions in total. Each session lasted approximately 1 hour and 45 minutes to 2 hours and was conducted weekly. We utilized all 8 modules of the UP (Barlow et al., 2019), adding a specific session about MS and healthy habits (see Table 1). This intervention focused on self-care, emotional regulation, and healthy lifestyle habits, with a particular emphasis on changing emotional eating behaviors and increasing motivation to lead a healthier life (motivation to engage in physical activity, eat more healthily, and assist with medical controls).

Module 0. Starting the Program: MS and Healthy Habits (Number of Sessions: 1). Before the initial module, we included a session with psychoeducational material. This new segment not only covered the topic of emotional eating but also explored the correlation between dietary choices and emotional states. To further enhance patient knowledge and engagement, the inaugural session was designed to provide an overview of MS and its subtypes, as well as a workshop focused on healthy eating practices and how such habits can positively affect their diagnosis. The session outlined what the entire intervention would entail and clarified the rationale for the specific skills that would be targeted to address their principal concerns. Moreover, the importance of consistent session attendance, adherence to group norms, and the completion of homework assignments was emphasized.

Module 1. Setting Goals and Maintaining Motivation (Number of Sessions: 1). In the second session, examples regarding motivation and change were discussed concerning changes in healthy lifestyle habits, specific behaviors, or emotions related to their pathology.

The work with MK focuses on ensuring that her goals align with leading a healthy life, better quality of life, and improved nutrition. MK indicates that two major mood states influencing her life are depression and anxiety. First, depression could lead to a "lack of mood and energy to do things," resulting in a loss of meaning in life. Second, anxiety makes her feel "nervous all the time" due to the negative thoughts reflected in symptoms associated with emotional disorder.

Concrete therapy objectives were created: (a) "engage in activities that bring her well-being," (b) "do more and move less," (c) "improve my relationship with food," and (d) "respect myself and give myself spaces of calm and sensory isolation."

However, she had some difficulty specifying the necessary steps to achieve her goals. While the activities she initially identified, such as playing music, eating mindfully, and meditating, were

Table 1. Description of the Original UP Modules and Adaptations Carried out in the Present Study.

Modules of the original UP	Adaptations of each module
Module 0: Starting the program: MS and Healthy Habits (1 session)	In this new module, Multiple sclerosis psychoeducational and nutritional materials were included. This material covered emotional eating, dietary choices, emotional states, MS and its subtypes. As well as healthy eating practices and how those affect positively to their diagnosis.
Module 1: Setting goals and maintaining motivation (1 session)	In this module, the examples regarding motivation and change were made concerning changes in their healthy lifestyle habits and emotions related to their pathology
Module 2: Understanding your emotions: What is an emotion? And following the ARC (2 sessions)	The content was applied based on the participants' experiential insights, which bore direct or indirect relevance to dietary practices or the diagnosis of RRMS. A specific portion of the session was allocated for the empirical analysis of the interplay between emotional states and eating behaviors.
Module 3: Mindful emotion awareness (2 sessions)	The practice of attentive, non-judgmental awareness of physical discomfort or pain was introduced. This technique involves objectively observing physical sensations, acknowledging their presence. By doing so, patients learn to separate the physical experience of pain from their automatic emotional responses, allowing them to manage better their symptoms and improving their quality of life.
Module 4: Cognitive flexibility (2 sessions)	This module required two sessions due to the participants' challenges in understanding its content. The exercises were tailored to the experiences shared by participants during the session. Most of the prevalent irrational automatic thoughts revolved around concerns about physical appearance and weight, a perceived inability to control food intake and maintain a regular exercise regimen, and worries about their health and future.
Module 5: Countering Emotional Behaviors (2 sessions)	This module required two sessions due to the participants' challenges in understanding its content. This module aided in identifying and comprehending different behavioral patterns that contribute to avoiding negative emotions. For example, patients learned to recognize patterns such as emotional eating, where they might consume food in response to feelings rather than hunger. The module then demonstrated the short and long-term effects of these emotional behaviors. For instance, avoiding exercise, though it might seem to reduce stress initially, can lead to decreased physical health and lower mood over time. Finally, the module discussed alternative behaviors to approach negative emotions rather than avoiding them, to equip patients with healthier coping mechanisms for their emotional and physical well-being.

(continued)

Table 1. (continued)

Modules of the original UP	Adaptations of each module
Module 6: Understanding and confronting physical sensations (1 session)	It aimed to develop tolerance towards strong physical sensations, which patients often immediately associate with their MS, leading to strong negative emotions. A key aspect highlighted in the module was the understanding that not all physical sensations are necessarily linked to MS. This approach is aimed at helping patients realize that physical sensations can be related to various causes, not always linked to their condition. By learning to consider a broader range of possibilities, patients could reduce the immediacy and intensity of negative emotional reactions to such sensations.
Module 7: Emotion exposures (2 sessions)	In this module, each participant created their emotion exposure hierarchy. Among the different hierarchies, relevant items were found, for example exposure to physical sensations, to the distress before doing exercise or going to the gym, asking for help to their family, or going out alone. All these items are related to some degree to how they lived their diagnosis and the possibility of increasing their quality of life.
Module 8: Moving up from here- Accomplishments and looking to your future (1 session)	The module aimed to empower participants to adapt their goals in response to their evolving circumstances, ensuring that their objectives remained realistic and achievable despite the challenges posed by RRMS. This was also an opportunity to revisit various techniques learned throughout the therapeutic process.

Note. UP = Unified Protocol; MS = Multiple Sclerosis; RRMS = Relapsing-Remitting Multiple Sclerosis.

concrete, she failed to specify their frequency and timing. For example, she could have added playing music on Saturdays, eating mindfully for at least 15 minutes during lunch, or meditating at least twice a week for an hour, in order to better integrate these steps into her daily routine.

The decisional balance exercise was conducted to analyze the benefits and costs of change, committing to the treatment to achieve her aims. Benefits of changing included “Improving my mood” and “Improving my physical health,” while costs included “Dealing with frustration,” “Requires effort,” and “Results are not immediate.” Benefits of staying the same were “I won’t make any effort” and “I’m not going to change my routine,” but the costs were “This problem affects my mood” and “My physical health gets worse if I don’t change.” Despite these challenges, MK decided to confront these obstacles.

Module 2. Understanding Your Emotions (Number of Sessions: 2). A characteristic of chronic illnesses is the experience of psychological symptoms such as anxiety, depression, and distress (Khatibi et al., 2021). In the context of MS, these emotions are not unfamiliar. Therefore, understanding emotions and their functionality is essential.

The UP conducts psychoeducation addressing emotions and their functionality, explaining emotional experiences (thoughts, physical sensations, behavior), identifying triggers, and the short- and long-term consequences of emotion-driven behaviors (EDB).

This module applied content based on participants' insights related to dietary practices or RRMS. It contextualized anxieties linked to the diagnostic process and lifestyle modifications, analyzing the interplay between emotional states and eating behaviors.

For MK, understanding her emotions' functionalities was crucial. The group format provided various perspectives. She noted that binge eating episodes triggered anxiety, frustration, and guilt. Her thoughts included "I always do the same" and "This worsens my health", with physical sensations like "stomach emptiness", "stomachache", and "tension in the head, neck, and abdomen", and behaviors such as "eating excessively" and "lying down in bed".

The ARC tool was introduced, detailing antecedents (A), emotional responses (R), and consequences (C). MK applied this to a recent intense emotional experience when her ex-partner texted about seeing someone else. The "A" was the text message, the "R" included physical sensations like stomach tightness and a lump in her throat, thoughts like "It's unfair" and "How can you live with yourself?", and behaviors like "sending a message in response and blocking them" and "distracting herself". Analyzing the "C," she realized short-term relief could lead to long-term avoidance of emotional connections. MK noticed her emotions influenced her thoughts and actions, stating, "I may process and alleviate this pain".

Module 3. Mindful Emotion Awareness (Number of Sessions: 2). The practice of attentive, non-judgmental emotional awareness was introduced, teaching patients to focus on the present and observe their emotional responses without judging themselves and acting. In other words, developing mindful emotional awareness. Concurrently, the importance of physical exercise as a crucial tool for managing symptoms of relapsing-remitting MS was emphasized. Patients were encouraged to integrate physical activities tailored to their ability level, highlighting how regular exercise can improve mobility, strength, and overall well-being.

First, fundamental principles were presented, observing the present moment without judgment. When explaining what it means to be in the present, a common example, such as taking a shower, was given ("What do you normally think when you are taking a shower?"). Participants were asked about the temporal state of their mind ("Some people tend to remember *past experiences*, or *some start to plan their day*"). Upon receiving the answer, the utility of remembering or planning during a shower was analyzed. The same analysis was conducted during intense emotions, where individuals tend to predict the future or recall past experiences, thereby increasing the emotion and getting carried away by it. The concept of judging oneself for feeling an emotion was defined and discussed, along with whether participants had done this in their daily lives and its consequences, such as feelings of frustration.

A meditation exercise lasting approximately 20 minutes was performed to practice these principles. Participants were asked to observe their automatic thoughts, physical sensations, and emotions. A present moment anchoring strategy was taught through breathing techniques, focusing on the breath as an anchor. An emotion induction activity helped participants notice that different stimuli trigger emotions and encouraged them to observe their emotions in the present moment non-judgmentally. The original UP order of activities is meditation, emotion induction, and present-moment anchoring. This change was made to deliver all information about meditation at the beginning for a better understanding of observing emotional experiences in the present moment without judging.

In MK's case, the meditation exercise was positive and nurturing. She focused on attending to environmental sounds and physical sensations. However, when recording her experience, she encountered difficulties in understanding the cognitive component, confusing it with the objects of her attention rather than the ideas or images that arose in her mind during the exercise. She also reported challenges with present moment anchoring exercises, as she tends to get "distracted." Nevertheless, she believes that through these approaches, she will be able to "alleviate and

process” her experiences. MK mentioned experiencing an uncomfortable moment and, instead of avoiding it, chose to “feel the uncomfortable emotion.” She then noted that “it passed quickly.”

Module 4. Cognitive Flexibility (Number of Sessions: 2). This module focuses on understanding how thoughts affect our emotional reactions and vice versa. People with MS often face stressful situations, triggering negative automatic thoughts without being aware of them. This question is introduced during the exercise: “Am I describing or am I interpreting?”

UP uses an ambiguous scene exercise to demonstrate automatic thoughts. Participants are asked to view a picture and share their initial interpretations. For instance, MK saw infidelity in the image and described the specific aspects that led to this interpretation. This activity encouraged reflection on whether participants were describing or interpreting the scene. MK noted that she hadn’t considered other perspectives.

Pessimistic automatic thoughts can trigger thinking errors like catastrophizing. MK reports catastrophizing and believing she cannot overcome difficulties (“my vision tends to be more catastrophic; I assume the situation as real”). She performed an ARC with a recent intense emotion and identified her thinking errors. Another error was thinking “I am going to fail” during work tasks. Reflecting on the question “Am I describing or am I interpreting?” helped her continue her tasks successfully. This thought question has become central for MK, as she applies it whenever she has an automatic thought and teaches it to her students. She begins to apply therapy learnings in her daily life.

Module 5. Countering Emotional Behaviors (Number of Sessions: 2). This module focuses on emotional behaviors that manage intense emotions and play a crucial role in developing and maintaining maladaptive emotional responses. These behaviors often alleviate distress in the short term but lead to more problems long-term. They may include perceiving some emotions or situations as dangerous or difficult to confront, leading to avoidance and maintaining a maladaptive emotional response pattern, reinforced by the relief of avoiding the emotion or situation. The content of this module was adapted to address participants’ difficulties in understanding it. Instead of discussing the five types of emotional behaviors: EDBs, overt avoidance, subtle behavioral avoidance, cognitive avoidance, and safety signals, we classified these behaviors into three groups. The first group was *Behaviors that didn’t let emotions appear* (i.e. overt avoidance), the second was *Behaviors that didn’t allow emotions to increase* (i.e. cognitive avoidance, subtle behavioral avoidance, safety signals), and the last one was *Behaviors that let emotions disappear* (i.e. EDBs). With these modifications, participants reported a better understanding of these concepts.

MK needed to identify her emotional behaviors in response to intense emotions; examples from the ARC and previous experiences were used to observe the short and long-term consequences. These examples helped her understand behavior patterns that contribute to avoiding her negative emotions. The emotional avoidance behaviors she commonly used were eating when anxious and using headphones to avoid conversations. She also engaged in avoidance behaviors like procrastination or planning future events to avoid the present. She identified that many of her behaviors didn’t allow emotions to increase.

It was essential to reflect on the benefits and costs of these dysfunctional emotional behaviors to recognize and establish new alternative behaviors that allow her to break the maladaptive cycle.

MK was asked to identify and classify the emotional behaviors manifested throughout her week to encourage the acquisition of the skill to engage in behaviors opposite to the usual ones.

Module 6. Understanding and Confronting Physical Sensations (Number of Sessions: 1). The module aimed to cultivate tolerance towards intense physical sensations, often associated with avoiding

activities and maintaining symptoms of anxiety and depression. Additionally, patients frequently attributed these sensations to their MS, which exacerbated negative emotions. A crucial aspect was helping patients recognize that not all physical sensations are MS-related. For example, tingling in the feet could result simply from prolonged sitting. Patients learned to consider alternative explanations grounded in existing evidence, which helped reduce anxiety and stress. They were encouraged to ask, “*Could there be a simpler explanation for this sensation?*” This approach promoted a more balanced understanding of bodily experiences and was implemented with all participants in the program.

For MK, exposing herself to physical sensations was challenging. She experienced numbness in her foot during a high-stress period and interpreted it as “a warning signal from my body to stop”. In sessions, she did exercises involving hyperventilation, body tension, spinning in a chair, and looking at a light. Hyperventilation and body tension caused her the most discomfort. She mentioned, “Now I understand that discomfort does not necessarily mean a flare-up will occur. It can mean or signal other symptoms”. This realization reduced her anxiety. She is now “learning to tolerate discomfort” and continues practicing these exercises at home.

Module 7. Emotion Exposures (Number of Sessions: 2). This module involves gradual exposure to stimuli that trigger intense emotions, using an exposure hierarchy from least to most discomforting. Participants face situations, objects, thoughts, images, or sensations that evoke strong emotions.

The goal is to tolerate emotions and apply therapy skills, changing interpretations of perceived dangers and adopting adaptive behaviors. For MS patients, exposure to physical sensations, exercise discomfort, or going out alone is central.

In MK’s hierarchy, high-anxiety elements include medical aspects (“knowing that I have to undergo an MRI,” “being hospitalized and not being able to move freely”), physical sensations (“feeling weak and not knowing why”), and external situations (“I don’t take the subway or bus when it’s crowded”, “important work meeting with parents or teachers”). Facing these anxieties was challenging, but MK “was learning to deal with the emotion.” For instance, “knowing that she will undergo an MRI” caused anxiety, but once there, it became manageable. Physical sensations didn’t necessarily predict a flare-up, and going to the supermarket was “not so terrible, and I even enjoyed it.” This progress motivated her to try new contexts that might cause discomfort.

Module 8. Moving up From Here (Number of Sessions: 1). This last module focuses on reviewing the goals set at the beginning of therapy and reinforcing the achievements made during it. Their objectives were reviewed, focusing on adapting them to their RRMS diagnosis. For example, one of MK’s goals was to lead a healthier lifestyle, which included better nutrition and increased physical activity.

Motivation is addressed again, discussing how to work with it and maintain it over time. There is also an emphasis on reinforcing what has been learned since practice is important for consolidating the learning of techniques. Finally, generating new goals for the future was introduced. In addition, the module focused on identifying obstacles and determining which strategies would be useful to overcome them. In other words, participants were guided in creating a work plan for future difficulties. For instance, if a participant struggled with adapting their diet due to MS-related symptoms, strategies like meal planning or seeking nutritional guidance were explored. Additionally, the participants were asked which techniques may be adequate to cope with potential obstacles. Therefore, the module aimed to empower participants to adapt their goals in response to their evolving circumstances, ensuring that their objectives remained realistic and achievable despite the challenges posed by RRMS.

During the last module, MK revealed the recent passing of a loved one. It was a painful event, but it gave her perspective on life. In this regard, mindful emotional awareness was one of the techniques she relied on the most. She mentioned that meditation let her “become aware of the emotions” that arise during this time. This has enabled her to process grief. She also emphasized that she has been able to fulfill her other therapy goals.

Furthermore, she acknowledges that what she struggled with the most was tolerating the intensity of her emotions. She recognizes that she still has a long way to go; sometimes, she gets carried away by EDBs and eats emotionally. But she has seen progress; she realizes each time she engages in this behavior, which allows her to engage in more physical activity, even though she is still afraid of riding a bicycle. She identifies that she still has some goals but will continue to work on them. She has reached this point to “learn and share what I have learned”.

Assessment of Progress

The MK assessment of progress during treatment was analyzed through the two primary UP instruments (OASIS and ODSIS). As outlined in the “Assessment” section, these instruments were administered before treatment and weekly thereafter to assess progress. Next, we graphically display the results, showcasing MK development throughout and after the treatment in terms of anxiety (OASIS), and depression (ODSIS). Figure 1 illustrates progression of anxiety and depression symptoms by treatment module. Changes in OASIS and ODSIS scores across the eight treatment modules were divided into 14 sessions, where the last session was the 3-month follow-up. There was a noticeable reduction in symptoms of anxiety and depression as the modules progressed. The starting OASIS score was also significantly high at the onset of the first module (12 out of 20), which then reduced only to 11 by the midpoint of the treatment protocol, eventually falling to 1 upon completion of Module 8. Although scores decreased, peaks were observed. An increased score was observed during session 8, corresponding to module 4, coinciding with work

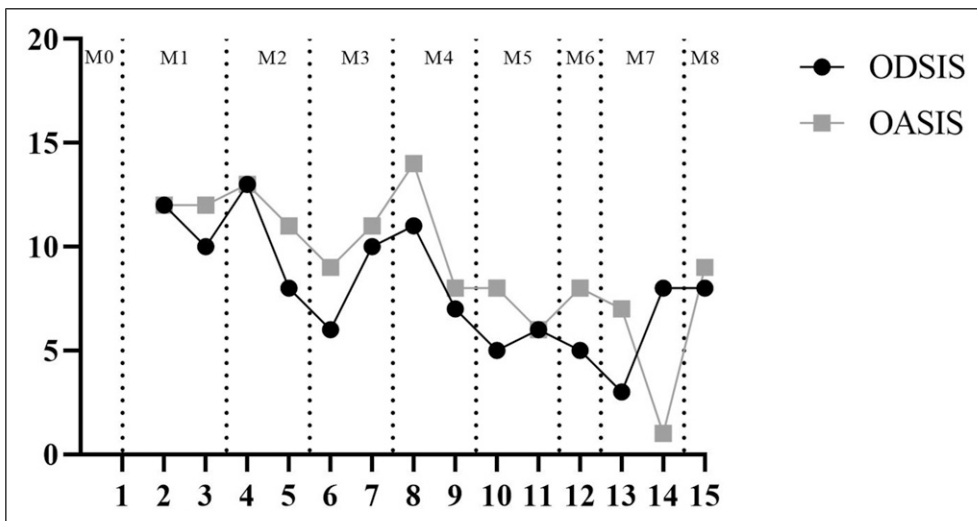


Figure 1. OASIS and ODSIS Results Throughout the Eight Modules of Treatment. Note. Data was lost during session one because MK had a medical urgency. Session 15 corresponds to the 3-month follow-up. M = module; ODSIS = Overall Depressive Severity and Impairment Scale; OASIS = Overall Anxiety Severity and Impairment Scale. Vertical axis contains scores and horizontal axis indicates the number of session. Values of 10 or higher on both scales indicate clinical levels of anxiety or depression.

and interpersonal problems, with a total score of 14. This also affects the ODSIS scores. The starting ODSIS score was significantly high at the onset of the first module (12 out of 20), which then reduced to 10 by the midpoint of the treatment protocol, eventually falling to 8 upon completion of Module 8. Also, we observed peaks, and an increased response was observed during session 4, which coincides with issues with previous significant other. In addition, another peak was observed during session 8, which is explained by work and interpersonal problems. Finally, the final peak was in the last session, which was related to recent grief.

AQ5 *Change at the Individual Level.* Change at the individual level was assessed only for the instruments that present relevant variations in their scores. For this, the standardized individual difference (SID) was calculated (Payne & Jones, 1957) as the difference between pre- and post-treatment score divided by the standard deviation (SD) of the difference. The SD was calculated from the first group of patients of the RCT in which MK participated. This approach tends to produce fewer false positives than other options like the Reliable Change Index or the Individual Effect Size (Ferrer & Pardo, 2014). Additionally, the test re-test reliability information is not available for the employed tests in the Chilean population and using the values obtained from internal consistency instead, tend to produce higher false positive rates (Ferrer & Pardo, 2014). For pre-post designs, 1.645 was used as a cut-off score for identifying cases that changed reliably (Estrada et al., 2019). In this index, positive values represent a reduction from pre to post. We were unable to calculate the SID for ODSIS and OASIS, as we did not consistently have all 7 pilot study participants in the pre, post, and follow-up sessions. This resulted in a sample size that was too small to yield reliable standard deviation data.

Significant individual-level changes are observed during pre-treatment and post-treatment. Conclusions from Table 2 indicate significant improvements in various aspects of mental health and well-being, reflected in significant values of the SID. Specifically, notable improvements are observed in depression, anxiety, and autonomic activation, as well as in emotional regulation, self-esteem, and health-related quality of life. This highlights the clinical utility of the treatment across a wide range of psychological measures. Although the results are generally positive, the variability in changes from post-treatment to follow-up suggests the need for strategies to maintain these improvements in the long term, especially in areas that tend to fluctuate or revert after treatment.

Increases in emotional eating observed in MK may be attributed to heightened self-awareness during treatment. As MK likely becomes more cognizant of her emotional states through therapeutic interventions, she may also become more capable of identifying and reporting emotional triggers linked to her eating behaviors. Prior to therapy, MK might have engaged in emotional eating without conscious recognition of the emotional motivations behind her actions. The therapeutic process potentially enhances her ability to discern and articulate these patterns, contributing to the observed increase in reported emotional eating.

Complicating Factors

MK's therapeutic journey within the UP framework is notably challenged by diverse factors that intricately interconnect her physical health conditions with her psychological struggles. Initially, her diagnosis of RRMS presents a foundational complication, intricately affecting both her physical abilities and her psychological stability (Heled et al., 2021). The diagnosis condition is further complicated by concurrent medical conditions—specifically, obesity and asthma—that not only exacerbate her physical discomfort but also deepen her psychological distress.

Moreover, MK's diagnosis of depression introduces an additional layer of complexity to her case (Feinstein et al., 2014). The depression significantly affects her energy levels and motivation, contributing to a debilitating sense of hopelessness and exacerbating her difficulties in managing

Table 2. Individual-Level Changes Pre-treatment, Post-treatment and Follow-Up for MK.

Variables	Pre (raw score)	Post (raw score)	FU (raw score)	Pre-post (sd)	Pre-FU (sd)	Post FU (sd)	SID pre-post	SID pre-FU	SID post-FU
Depression (SCL-90-R)	3.23**	2.08	2.38	1.15 (0.43)	0.84 (0.69)	-0.31 (0.65)	2.69*	1.23	-0.48
Anxiety (SCL-90-R)	2.5**	1.5	2.3	1.0 (0.6)	0.20 (0.39)	-0.80 (0.70)	1.67*	0.52	-1.14
DEERS	75**	54	78	21 (8.73)	-3 (14.31)	-24 (17.22)	2.40*	-0.21	-1.39
HRQOL-I (EQ-5D)	0.41	0.66	0.26	-0.24 (0.09)	0.15 (0.25)	0.40 (0.30)	-2.65*	0.61	1.32

Note. Pre = Pre-treatment; Post = Post-treatment; FU = follow-up; sd = standard deviation; SID = standardized individual difference; SCL-90-R = Symptom Checklist-90-Revised; MED1 = Multidimensional Emotional Disorders Inventory; EQ-5D = EuroQoL EQ-5D; * = significant change in the desired direction.

intense emotional responses (Mayo et al., 2021). This psychological situation is further complicated by the presence of an ED, which manifests as maladaptive coping mechanisms that perpetuate her cycle of emotional distress (Khosravi et al., 2023).

Taken together, all of this may also interfere with the course of MS, increasing MK's likelihood of experiencing disease flare-ups. In this complex context, the UP serves as a buffer, as its application can help address the emotional and lifestyle impacts that these factors may have on MK in a comprehensive manner.

As the focus of the intervention was to promote better emotional regulation skills to improve certain aspects of MS, when topics related to MK's multiple diagnoses arose, they were addressed in terms of their relationship with emotional dysregulation and how they align with the objectives originally established by MK. Therefore, it was not possible to address all the symptoms reported. Additionally, given the group format of the intervention, patients like MK, who have experienced multiple adverse events in their lives, may not have been able to explore these issues as deeply as they would have in an individual format.

Moreover, MK had already begun a psychotherapeutic process before participating in the intervention, which makes it difficult to attribute certain changes solely to the UP intervention. However, during the sessions, this did not seem to be an issue, as MK was able to identify common elements learned in her other therapeutic process, as well as from other contexts, primarily related to mindfulness. With MK, it was therefore especially important to clarify the interventions that were specific to the UP.

9. Access and Barriers to Care

In MK's case, several barriers to accessing the care system influenced the therapeutic process. Primarily, the physical limitations and fatigue associated with RRMS (Maffezzini et al., 2023) were substantial obstacles to attending face-to-face therapy sessions. However, despite these difficulties, MK demonstrated excellent adherence to the treatment. To address this, recovery sessions were organized, which involved rescheduling missed appointments within the same week. These sessions were brief, intensive, and conducted online to assess mood and review techniques to be practiced before the next session. These sessions were highly appreciated by both the patient and the group, and it is recommended that future interventions incorporate this approach.

Secondly, another barrier is access to psychotherapy itself. In other words, although there is a program (Ley Ricarte Soto) that allows free access to treatment for MS, it does not include psychotherapy sessions. This research is a free, state-sponsored, almost unique option to which not all patients have access. Therefore, it would be urgent and important that this type of instance be more accessible to patients with this condition. Fortunately, MK and the group were able to access this type of intervention.

Lastly, comorbidity is an important factor to consider, as there may be patients like MK who present high comorbidity of conditions or disorders. Therefore, transdiagnostic treatments like UP can be useful because they can help address key elements such as emotional dysregulation (which we did). However, it is also pertinent to frame and focus on themes that may be contingent with MS treatment, such as anxiety, depression, quality of life, or obesity (in our case), to quickly provide the user with tools to address a process they are constantly experiencing.

10. Follow-Up

To evaluate progress after the intervention, a 3-month follow-up was conducted. On one hand, individual measurements were applied in a on-line format, similar to those used in the pre-

intervention assessment. On the other hand, a group session to evaluate how they were applying the techniques learned in their daily lives.

In the individual follow-up, MK reported an increase in both the ODSIS and OASIS scores, indicating a heightened level of distress (Osma et al., 2019). Despite this overall worsening, her follow-up scores in self-esteem, depression, and anxiety were still better than her initial pre-treatment scores. This change was primarily attributed to a significant escalation in work-related stress, compounded by the emotional impact of a close friend's death just before the last session. The subsequent period was marked by MK's continued grieving process and ongoing difficulties at work, reflecting a particularly challenging phase in her emotional recovery. The follow-up group session focused on the status of participants' objectives, mood, obstacles encountered in daily life, and the use of techniques learned in therapy.

11. Treatment Implications of the Case

In the case of MK, we believe that the clinical improvement observed resulted from the treatment carried out with the UP. Transdiagnostic interventions allow for the inclusion of patients with various symptoms, focusing on a common factor among them, such as emotional dysregulation. In this case, emotional dysregulation, which can trigger symptoms of anxiety and depression in patients with MS, is addressed. We believe that this approach is highly recommendable for treating individuals with RRMS who also deal with symptoms of overweight and EDs. Additionally, the advantage of the UP is that it is practical and versatile, applicable in individual or group formats. In this intervention, the main goal is to improve emotional regulation, regardless of the diagnosis. Recent studies have highlighted the role of emotional dysregulation as a vulnerability factor within the continuum of emotional and physical problems in patients with RRMS (Carrigan et al., 2018; Nazari, Sadeghi, et al., 2020). The results obtained in this case indicate that UP is a treatment with great clinical utility. MK's scores at the beginning were generally high and decreased after treatment; however, in the follow-up, we saw an increase, which sometimes was still below the initial score. We believe this increase is linked to a grieving situation that the patient was going through. It should be noted that in the 3-month follow-up, MK showed an improvement in the anxiety and depression symptoms she had at the beginning, as well as a decrease in emotional eating behaviors.

However, these results should be interpreted with caution. We did not conduct clinical interviews, relying solely on the patient's self-report and psychometric tests. Additionally, we employed a pre-post design without within-subject control conditions. Furthermore, MK was receiving treatment from other providers, which could have influenced the changes observed in MK. However, during the intervention, when evaluating the application of activities outside the sessions, patients were directly asked whether they performed the activities and if they helped them better manage the situations and problems they faced. Therefore, while the overall pre-post change may be attributed to both the UP intervention and other external treatments, the weekly self-report on the specific usefulness of techniques associated with the UP was particularly valuable.

Despite these limitations, the current work adds evidence regarding the clinical utility of the UP in addressing both emotional and physical challenges in patients with RRMS, suggesting a valuable direction for future research and clinical practices.

12. Recommendations to Clinicians and Students

It is crucial to acknowledge the unpredictable nature of symptom development and disease progression in MS patients, which varies significantly between individuals and crises. Managing

MS is inherently challenging, often heightening stress levels and exacerbating emotional dysregulation, which can further impact crisis management. The UP promotes adaptive strategies for managing symptom unpredictability, such as acceptance of physical symptoms, development of coping strategies for discomfort, and fostering cognitive flexibility in relation to fears about disease progression.

Clinicians using the UP with MS patients are encouraged to integrate strategies for managing future crises into the final module (i.e., Moving Up from Here). This includes outlining practical approaches derived from UP techniques, aimed at enhancing patient resilience and well-being during periods of exacerbation.

Clinicians and students are encouraged to explore psychological interventions, such as the UP, to enhance patient care for individuals with MS and associated comorbidities. Due to its transdiagnostic approach, the UP is a valuable tool for addressing a wide range of physical and mental challenges exacerbated by emotional dysregulation. It offers flexibility to tailor interventions to meet the unique needs of each patient. Besides this study is not the first to analyze the effectiveness of this treatment for this type of population (Nazari, Aligholipour, & Sadeghi, 2020; Nazari, Sadeghi, et al., 2020), it provides encouraging results regarding its effectiveness, this time in a Chilean population, and offers a valuable contribution to the emerging field of psychological interventions for individuals with chronic illnesses, particularly MS.

This protocol focuses on emotional regulation and behaviors like emotional eating. The existence of the The Renfrew Unified Treatment for Eating Disorders and Comorbidity and its effectiveness is noted (Thompson-Brenner et al., 2021), yet the effectiveness of the UP for MS (Nazari, Aligholipour, & Sadeghi, 2020; Nazari, Sadeghi, et al., 2020) and the philosophy of transdiagnostic treatments are also taken into account. That is, the idea of not relying on a specific treatment for a group of diagnoses, but rather having a treatment that addresses key and transversal mechanisms for treating mental disorders, such as emotional regulation. Therefore, due to its transdiagnostic approach, the UP is a valuable tool for addressing a broad spectrum of emotional and physical symptoms, offering the flexibility to meet individual patient needs. Clinicians are advised to undergo training in the UP and other evidence-based therapies to improve their therapeutic skills and elevate the standard of care for patients with MS and other chronic conditions. Addressing obesity comorbidity in MS patients by integrating emotional regulation and healthy eating into a comprehensive treatment plan is crucial. The text also stresses the significance of promoting adapted physical activities as an integral part of treatment to enhance mobility, strength, and emotional well-being, acknowledging their vital role in managing MS and obesity. Furthermore, it advocates for promoting long-term strategies, teaching, and reinforcing emotional regulation and stress management techniques that patients can apply beyond the treatment period to manage future challenges effectively. Lastly, clinicians and students are urged to actively engage in ongoing research on the effectiveness of interventions like the UP in treating MS and other chronic diseases and to continuously update their professional training to ensure optimal, current care.

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Ethical Statement

Ethical Approval

The study was conducted at the Faculty of Social Sciences at the University of Chile. This study was approved by the Research Ethics Committee of the Faculty of Medicine at the University of Chile. This case study is part of an ongoing Randomized Controlled Trial (RCT). The pre-registration for this RCT can be found at the following link: https://osf.io/sr4bx/?view_only=bcbcff9e43ac4f00b557313442739dca

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