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What really matters for returning to work after breast cancer? A 6-month exploratory study

Elena Fiabane PhD^a, Paola Dordoni PhD^a, Cecilia Perrone MSc^a, Antonio Bernardo MD^b, Fabio Corsi MD^c, and Paola Gabanelli MSc^a

^aPsychology Unit of Pavia Institute, Istituti Clinici Scientifici Maugeri IRCCS, Pavia, Italy; ^bOperative Unit of Medical Oncology of Pavia Institute, Istituti Clinici Scientifici Maugeri IRCCS, Pavia, Italy; ^cBreast Unit of Pavia Institute, Istituti Clinici Scientifici Maugeri IRCCS, Pavia, Italy

ABSTRACT

Return to work (RTW) after breast cancer (BC) may significantly impact on women recovery and quality of life. Literature highlighted several factors associated to RTW after BC but there is still some concern about prognostic factors influencing work resumption after BC treatments. The present study aims to explore which baseline factors are associated with RTW at 6-month after BC surgery. The participants in this 6-month prospective study were 149 patients who underwent breast cancer-related surgery and accessed an Oncology Clinic for cancer therapy from March 2017 to December 2019 in Northern Italy. Participants filled in a battery of questionnaires at baseline, and they were asked whether they had returned to work at 6-month follow-up. Psychological measurements included job stress (Job Content Questionnaire), work engagement (Utrecht Work Engagement Scale), quality of life (World Health Organization Quality of Life-BREF), anxiety and depression (Hospital Anxiety and Depression Scale), resilience (Connor – Davidson Resilience Scale – 10 item) and personal expectations about RTW (ad-hoc single item). Moreover, sociodemographic, clinical, and work-related data were collected. Independent t-test and Chi-square test were used for comparisons among variables; logistic regression model was used to explore predictors of RTW. A total of 73.9 percent returned to work at 6-month after surgery. In the multivariate model, chemotherapy ($B = -1.428$; $SE = 0.520$) and baseline women's expectations about their RTW ($B = -0.340$; $DS = 0.156$) were significant predictors of RTW. These results suggest that careful individual clinical and psychological screening of risk factors at baseline can prevent from occupational disability and long sickness absence.

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Introduction

Early diagnosis and improvements in treatment in most developed countries have increased in the number of breast cancer (BC) survivors (Carioli et al. 2017) resulting in increased cancer survivors being able to return to work (RTW). BC is the most widespread cancer in women, which frequently requires a combination of treatment modalities that can be associated with longer treatment and recovery time (De Boer et al. 2008; Gudbergsson et al. 2011; Hinman 2001).

Among female cancer in Italy, BC is the most frequent with 55,700 new diagnoses in 2022, representing 30.0 percent among all female cancers (www.aiom.it). BC occurs most frequently in middle-aged women that are in a key life stage for professional career and family management. In many cases, diagnosis of BC implies a change in working conditions such as a temporary interruption

CONTACT Elena Fiabane  elenamaria.fiabane@icsmaugeri.it  Psychology Unit of Pavia Institute, Istituti Clinici Scientifici Maugeri IRCCS, Via Salvatore Maugeri 10, Pavia 27100, Italy

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or work limitations due to the disease or treatments and their side effects, while some other patients never return to work (Damkjaer et al. 2011; Tiedtke et al. 2010). Returning to work represents a relevant event for cancer patients since it is a symbol of recovery and regain of normal life (Fiabane et al. 2014; Hinman 2001; Kennedy et al. 2007; Spelten, Sprangers, and Verbeek 2002); in addition, several studies showed that RTW is associated with increased quality of life and mental health (Sohn, Sun-Young, and Sue 2021; Spelten, Sprangers, and Verbeek 2002).

Literature on RTW after BC may be seen as a process made up of stages involving several aspects, such as clinical, socio-demographic, psychological, and work-related factors (Bilodeau, Tremblay, and Durand 2019).

Overall, chemotherapy is widely associated with prolonged period of sick leave (Islam et al. 2014). Regarding treatments such as mastectomy, axillary node dissection, irradiation to breast or chest wall, hormone, and radiotherapy were also found to be important barriers to RTW (Colombino et al. 2020; Islam et al. 2014). Early stage BC, fatigue, and physical exhaustion were found to hinder women's RTW (Johnsson et al. 2007).

Among socio-demographic factors, BC survivors with higher education, younger age and not in a relationship were more likely to RTW compared to others (Carlsen et al. 2013; Colombino et al. 2020; Islam et al. 2014). Furthermore, there are several psychological factors, which may influence patients' decision to RTW, such as life satisfaction, self-motivation, emotional distress, fatigue, social support, resilience, depression, and anxiety (Colombino et al. 2020; Islam et al. 2014; Zheng et al. 2022). Previous studies found that work-related factors, such as having a manual job, heavy job demands, high levels of occupational stress, low job satisfaction, lack of supervisor or coworkers support resulted as barriers of RTW (Fantoni et al. 2010; Fiabane et al. 2014, 2015; ; Islam et al. 2014; Sohn, Sun-Young, and Sue 2021); additionally, some studies reported a reduced work engagement among breast cancer survivors but research is still lacking (Hakanen and Lindbohm 2008; Omar 2014). Furthermore, flexible working schedule, non-manual job and job security were found to be facilitators of RTW after BC cancer (Islam et al. 2014).

Previous studies showed that early interventions are the key for preventing disability since the longer a worker is absent from work due to illness, the less likely that person is to return to work (Fiabane, Argentero, and Calsamiglia 2013). Previous studies showed average time to RTW that can differ among countries, i.e. from 11.4 months in the Netherlands to only 3 months in Sweden (Campagna et al. 2020).

Indeed, also among BC patients, the first six months after surgery are considered as a key period, like a time window called "in-between" because of its important impact on RTW (Bilodeau, Tremblay, and Durand 2019). An in-depth analysis of this delicate time window could provide a better comprehension of multiple factors influencing process of RTW in order to support tailored interventions.

Reintegration into the workplace after illness is strongly recommended since it is associated with improved quality of life and mental health status (Sohn, Sun-Young, and Sue 2021). Given the multidimensional nature of RTW, it is important to prospectively explore which factors may promote or impede work reintegration in the specific context of BC.

Therefore, the aim of this exploratory study was to investigate which baseline sociodemographic, clinical, psychological, and work-related factors predict RTW at 6-month after breast cancer surgery.

On the basis of previous literature (e.g., Tamminga et al. 2022) we hypothesized that: (a) a younger age, (b) a white-collar job, (c) not being treated with chemotherapy, (d) no depressive symptoms, and (e) having at baseline expectations of RTW were positively associated to RTW at follow-up.

Materials and methods

The participants in this 6-month prospective study were 181 patients who underwent breast cancer-related surgery and accessed an Oncology Clinic for cancer therapy from March 2017 to December 2019 in Northern Italy (Fiabane et al. 2022). Participants fulfilled the following inclusion criteria: a) diagnosis of first primary invasive breast cancer (all stages); b) recently having completed surgical intervention; c) being employed at the time of diagnosis; d) aging between 18 and 60 years at

the diagnosis time. We excluded individuals with: a) prior history of cancer other than non-melanoma skin cancer; b) presence of cerebral metastasis; c) unemployment in the six months before the diagnosis.

The data were collected at baseline during the hospitalization (mean = 1.43 (\pm 2.43) days after surgery) and at 6-months follow-up when patients were evaluated by means of phone interview. At baseline, participants completed questionnaires regarding socio-demographic, psychological, and work-related factors; the compilation required about 30 minutes. We collected information about patients' definitive return to work or not at 6-month follow-up assessment.

Thirty-two patients out of 181 (17.7 percent) refused to participate, resulting in a final sample of 149 patients eligible for this study (82.3 percent).

The study was approved by the local Independent Ethics Committee of Istituti Clinici Scientifici Maugeri SB Spa (Number Protocol: 2136). Written informed consent was obtained from all participants.

Materials

Job content questionnaire (JCQ)

Job stress was investigated using scales from the Job Content Questionnaire (JCQ) (Baldasseroni et al. 2001). The original version consists of 49 items scored from 1 (completely disagree) to 4 (completely agree). The components measured for this study were: skill discretion (6 items), decision authority (4 items), psychological job demands (9 items), physical job demands (2 items), supervisor support (4 items), coworker support (4 items).

Utrecht work engagement scale (UWES-9) Balducci et al., (2010)

Work engagement was measured with the Utrecht Work Engagement Scale (10 items) which included the following three subscales: vigor (3 items), dedication (3 items), and absorption (3 items). Responses to items were given on a frequency scale varying from 0 (never) to 6 (always). The higher the score, the greater the work engagement.

The World Health Organization Quality of Life- BREF (WHOQOL-BREF)

In order to investigate the perception of Quality of Life (QoL), the World Health Organization Quality of Life was used (26 item) (De Girolamo et al. 2000). It is the short form of the WHOQOL-100 (Skevington, Lotfy, and O'Connell 2004) and assesses 24 domains of general QoL grouped in four domains: physical health (7 items), psychological health (6 items), social relationships (3 items), and environment (8 items). Additionally, 2 items about overall QoL and general health were considered. Scores range from 1 to 5 and are recoded into 1–100 scores. The higher the scores, the greater the quality of life.

Hospital anxiety and depression scale (HADS)

Anxiety and depression symptoms were investigated by the Italian version of the Hospital Anxiety and Depression Scale (Costantini et al. 1999). It is a 14-item scale composed by two subscales: anxiety (7 items) and depression (7 items). The lowest possible scores for depression and anxiety are 0, and the highest possible scores are 21. Higher scores indicate great severity of anxiety or depression.

Connor – Davidson resilience scale– 10 item (CD-RISC-10)

The Italian version of the short form of the CD-RISC scale (Di Fabio and Palazzeschi 2012) was used to investigate resilience. Items were rated on a 5-item scale ranging from 0 (strongly disagree) to 4 (strongly agree). The resilience score was calculated as the average of the items; higher scores indicate greater resilience.

RTW expectancy

Ad-hoc single item was formulated for this study to evaluate baseline patient's expectations for RTW after BC surgery ("Do you expect to return to work?"), using a 1–10 slider scale, higher scores meaning higher RTW expectancy.

Expectancy of job changes after illness

Ad-hoc single item was used to evaluate baseline patient's expectations of job changes when they will return to work ("Do you expect to change your job/position after illness?") using a dichotomous scale (Yes/No).

Statistical analyses

All analyses were performed using SPSS for Windows version 19.0. Preliminary analyses were conducted in order to test the causality of the hypothesized model. Women who did and did not return to work within T1 were compared on socio-demographic, medical, and psychological variables using independent t-test for continuous variables and Chi-square test for categorical variables. Only variables with significant results ($p < .05$) with return to work were used in the model. Logistic regression model was then used to test our research hypothesis. The model was adjusted for socio-demographic (age) and job variables (professional category, type of job). We included these covariates because many previous studies found them to be related significantly to RTW and sickness absence (Sohn, Sun-Young, and Sue 2021; Van Muijen et al. 2013).

Results

Total sample

Baseline characteristics of the sample are presented in Table 1. The mean age was 50.30 (DS = 6.16), the majority of women was in a relationship (75 percent) and referred having children (79.1 percent). Participants had a mean education of 13.74 years, and 54.9 percent reported their husband as the caregiver. With regard to medical characteristics, 69.2 percent of women did not receive chemotherapy (only or combined), 86.5 percent did not receive radiotherapy (only) and 80.5 percent did not receive hormonotherapy (only). 76.9 percent of participants did not have axillary dissection while 63.4 percent had a sector resection. 70.7 percent of the sample had no previous diseases. Concerning their job, the majority of participants worked full-time (75.0 percent) and was employed (87.3 percent) as white-collar (69.4 percent). Furthermore, the mean of seniority with the current job was 18.92 (yrs) ($SD = 10.19$), while the mean of the total seniority was 26.85 (yrs) ($SD = 8.66$). As shown in Table 2, at baseline 88.6 percent of women believed that no job changes will be necessary when returning to work. Additionally, a high score of RTW expectation was found ($M = 9.26$; DS = 1.58; range 1–10)

Differences between RTW and NOT RTW groups

73.9 percent of the total sample returned to work at 6-month follow-up. Women who did and did not return to work within 6-month were compared on socio-demographic, clinical, and psychological variables (Tables 1 and 2). The results evidenced that RTW patients were less likely to be in a relationship ($X^2 = 4.45$; $p = .035$), they tended to have less children ($X^2 = 4.35$; $p = .37$) and they were less likely to receive chemotherapy (only or combined) ($X^2 = 7.014$; $p = .011$) compared to the NOT RTW group. Moreover, the RTW group frequently had less expectancies of job changes after illness ($X^2 = 6.25$; $p = .012$), and scored higher in RTW expectancy ($Z = -2.070$; $p = .038$), physical quality of life ($Z = -2.093$; $p = .036$) and resilience ($Z = -2.120$; $p = .034$) compared to the other group.

Table 1. Baseline sociodemographic, work-related and clinical characteristics of the total sample and differences between RTW groups ($N = 149$).

	TOTAL % (N)	RTW % (N)	NOT RTW % (N)	χ^2	p
In a relationship					
Yes	75.0 (101)	69.3 (70)	30.7 (31)	4.45	.035
No	24.0 (33)	87.9 (29)	12.1 (4)		
Children				4.35	.037
Yes	79.1 (106)	69.8 (74)	30.2 (32)		
No	20.9 (28)	89.3 (25)	10.7 (3)		
Caregiver				3.15	.368
Husband	54.9 (73)	68.5 (50)	31.5 (23)		
Husband and son	12.0 (16)	75 (12)	25.0 (4)		
Mother, brother/sister	8.3 (11)	72.7 (8)	27.3 (3)		
Other	24.8 (33)	84.8 (28)	15.2 (5)		
Chemiotherapy ^a				7.01	.011
Yes	30.8 (41)	58.5 (24)	41.5 (17)		
No	69.2 (92)	80.4 (74)	19.6 (18)		
Radiotherapy ^b				0.32	.399
Yes	13.5 (18)	83.3 (15)	16.7 (3)		
No	86.5 (115)	72.2 (83)	27.8 (32)		
Hormonotherapy ^c				0.94	1.000
Yes	19.5 (26)	73.1 (19)	26.9 (7)		
No	80.5 (107)	73.8 (79)	26.2 (28)		
Axillary dissection				0.18	.649
Yes	23.1 (31)	71.0 (22)	29.0 (9)		
No	76.9 (103)	74.8 (77)	25.2 (26)		
Previous diseases				0.30	.669
Yes	29.3 (39)	76.9 (30)	23.1 (9)		
No	70.7 (94)	72.3 (68)	27.7 (26)		
Cancer-related surgery				0.93	.545
Sector resection	63.43 (85)	74.11 (63)	25.88 (22)		
Mastectomy	36.56 (49)	73.46 (36)	26.53 (13)		
Work status				0.39	.823
Full time	75 (99)	74.7 (74)	25.3 (25)		
Part time	22 (29)	69.0 (20)	31.0 (9)		
Other	3 (4)	75.0 (3)	25.0 (1)		
Professional category				-1.82	.068
Blue collar	30.59 (41)	63.41 (26)	36.58 (15)		
White collar	69.40 (93)	78.49 (73)	21.50 (20)		
Type of Job				2.08	.237
Employed	87.3 (117)	71.8 (84)	28.2 (33)		
Self-employed	12.7 (17)	88.2 (15)	11.8 (2)		
	TOTAL M (SD)	RTW M (SD)	NOT RTW M (SD)	Z	p
Age	50.30 (6.16)	50.24 (5.84)	50.45 (6.98)	-0.33	.738
Education (yrs)	13.74 (3.23)	13.95 (3.09)	12.85 (3.91)	-1.73	.082
Seniority with actual job (yrs)	18.92 (10.19)	19.83 (9.60)	16.26 (12.07)	-1.75	.080
Seniority total (yrs)	26.85 (8.66)	27.57 (7.89)	25.61 (10.70)	-0.76	.449

^aYes = only chemotherapy or combined; No = no chemotherapy; ^bYes = only radiotherapy; No = no radiotherapy.

^cYes = only hormone therapy; No = no hormone therapy.

Baseline predictor of RTW at T1

Logistic regression analyses were used in order to study the predictor of RTW after 6 months. As shown in Table 3, receiving chemotherapy ($B = -1.428$; $SE = 0.520$) and women' RTW expectancy ($B = -0.340$; $DS = 0.156$) predicted patients' RTW at T1.

Discussion

RTW after BC is a relevant topic considering the increase of breast cancer incidence, the working age of the diagnosis and the decrease of mortality due to news diagnostic and therapeutic tools. RTW

Table 2. Differences at baseline in psychological factors between RTW and not-RTW groups ($N = 149$).

	TOTAL % (N)	RTW % (N)	NOT RTW % (N)	χ^2	p
Expectancy of job changes after RTW					
Yes	11.4 (15)	46.7 (7)	53.3 (8)	6.25	.012
No	88.6 (117)	76.9 (90)	23.1 (27)		
	TOTAL M (SD)	RTW M (SD)	NOT RTW M (SD)	Z	p
RTW expectancy	9.26 (1.58)	9.47 (1.34)	8.68 (2.16)	-2.07	.038
Job stress					
Skill discretion	33.36 (5.00)	33.47 (4.67)	33.45 (5.10)	-0.18	.854
Decision authority	33.40 (6.67)	33.14 (7.03)	33.87 (6.92)	-0.81	.417
Psychological Job demand	23.03 (3.96)	23.39 (4.29)	22.42 (3.14)	-1.01	.312
Physical Job demand	6.29 (1.97)	6.47 (1.94)	5.96 (1.97)	-1.38	.168
Supervisor support	11.01 (3.59)	11.36 (4.12)	10.68 (1.83)	-0.79	.426
Coworker support	11.70 (1.85)	11.87 (1.89)	11.57 (1.25)	-1.01	.313
Work engagement					
Vigor	4.23 (1.40)	4.28 (1.32)	4.30 (1.48)	-0.33	.744
Dedication	4.41 (1.30)	4.51 (1.15)	4.32 (1.50)	-0.23	.816
Absorption	4.58 (1.25)	4.67 (1.14)	4.60 (1.30)	-0.05	.962
Quality of life					
Physical	64.54 (14.72)	66.57 (15.03)	60.84 (13.08)	-2.09	.036
Psychological	61.52 (12.53)	62.56 (12.46)	59.27 (12.83)	-0.97	.330
Social	72.38 (12.34)	73.39 (12.57)	71.92 (11.17)	-0.67	.502
Environment	59.95 (11.29)	61.67 (10.61)	57.85 (12.52)	-1.30	.193
Anxiety	9.69 (4.58)	9.70 (4.47)	9.30 (4.79)	-0.55	.579
Depression	5.69 (3.70)	6.00 (3.63)	5.08 (3.58)	-1.34	.180
Resilience	29.41 (6.86)	30.30 (6.90)	27.91 (6.87)	-2.12	.034

Table 3. Baseline predictors of return to work at 6 months follow-up ($N = 149$).

	OR	95 percent CI	p
In a relationship	2.35	0.85–1.35	.125
Children	1.02	0.11–2.04	.312
Chemotherapy	7.54	0.09–0.67	.006
Belief about job changes after RTW	2.34	0.10–1.35	.126
RTW Expectations ^a	4.77	0.52–0.97	.029
Physical QoL ^a	1.99	0.94–1.00	.158
Resilience ^a	0.32	0.91–1.05	.571
Nagelkerke R ²	0.34		

This model is adjusted for socio-demographic (age) and job variables (professional category, type of job).

^aOR for one point increase.

literature underlined the multifactorial nature of RTW process and the need of timely interventions since the duration of sickness absence is negatively associated with the probability of RTW. Therefore, this study aimed to focus on the first 6-month after breast surgery to explore relevant predictors of RTW, from a multidimensional perspective.

In accordance with literature (Islam et al. 2014), we found that 73.9 percent had returned to work at 6-month after surgery showing that even few months after surgery most women decided to RTW. Among the socio-demographic factors, we found that RTW was associated with being not married and with not having children. Previous findings suggested that women without a partner or children are more likely to RTW (Islam et al. 2014; Johnsson et al. 2007). It is plausible that financial insecurity or investment in career may be the reasons (Drolet et al. 2005; Tamminga et al. 2012). In addition, single women may be more likely to perceive a sense of loneliness when coming back home after surgery, hence conceiving RTW as regaining the own normal life (Kennedy et al. 2007; Spelten, Sprangers, and Verbeek 2002).

In contrast to our hypothesis, age and type of job were not significant factors influencing RTW. Based on the literature, we expected that younger women with a white-collar position were more likely to RTW after surgery (Islam et al. 2014) but it is plausible that the high percentage of white-collar women in our sample has impacted on this result.

With regard to clinical factors, findings confirmed our hypothesis that chemotherapy is a relevant risk factor for not returning to work (Dumas et al. 2020; Fantoni et al. 2010) while other treatments or clinical factors did not have a significant effect.

With regard to the role of psychological factors, contrary to our hypothesis, depression did not have effect on RTW process. This result could be explained by the timing of the evaluation that occurred few days after the surgery: depressive symptoms are usually most frequent in the advanced post-operative period (Kim et al. 2018).

One of the main results of our study is the strong impact of personal expectations on RTW. The great RTW expectancy at baseline resulted to be a relevant predictor of RTW at 6-month after surgery. Patient expectations have been previously demonstrated to be related to a variety of recovery indicators including surgical outcomes, treatment adherence, and disability duration (Hinman 2001).

In line with this, our findings suggested that the baseline perception of physical quality of life predicted RTW at follow-up. This means that women who perceived themselves as physically healthy are more oriented to RTW after surgery, suggesting that personal evaluations and beliefs on self-efficacy may influence women's behaviors and decisions.

Overall, our study suggested that single women without children, with possible high investment in their job and with positive perception of physical quality of life are more likely to RTW 6-months after surgery. Moreover, when motivated and positively hopeful, women RTW 6-months after surgery. We may assume that job may help these women to perceive a good self-image and psychological identity. RTW can be considered a protecting factor for psychological health after cancer treatment. Taken all together, these results suggest that when women have positive expectancy and feel motivation to RTW as well as self-efficacy on the job, they may feel stronger and much more available to deal with work demands even after cancer. This concept may be related to the psychological resilience, which resulted as a distinctive characteristic of RTW women in our study. In conclusion, the present research highlighted the key role of baseline expectations about RTW and individual evaluation of physical health, that means self-confidence and perception of self-efficacy on the job, even after a serious illness. When you believe you can do it, you are halfway there.

Some limitations should be acknowledged. First, all measurements used were self-reported, a common-method bias may exist. Second, our sample consisted of patients enrolled in a single hospital, therefore generalizability of our findings might be limited. Third, we are aware that our sample is characterized by a higher percentage of white-collar women employed in an organization. In future studies, both type of job and work status should be considered in multi-group analyses. Fourth, this study did not include a priori sample size estimation and this could influence the validity of our results; however, we compared our findings with previous studies with similar characteristics and populations (e.g., Bellagamba et al. 2021; De Boer et al. 2008).

Our findings have important practical implications for healthcare organizations and for clinicians working with BC women. Our results recommend a baseline psychological screening for these patients: even if common evaluations (such as anxiety and depression) might result appropriate, it could be useful to explore RTW expectations since they can be barriers to the complex process of work reintegration after illness. Indeed, when there are positive expectancies on RTW at baseline, it may be possible that women are more likely to RTW 6-month after surgery and to cope with barriers and stressors related to the work reintegration process. As a matter of fact, the psychologist can help clinicians evaluating and monitoring the course of these expectations during the path. BC women who are hesitant in RTW may benefit from psychological support, specifically on reinforcing self-image as a workable woman when dealing with rehabilitation. Furthermore, patients treated with chemotherapy should be monitored carefully since they are at high risk for not returning to work.

Lastly, government policy should support this specific group of employees by means of legislation (e.g., inclusion policies) promoting return to work and providing vocational rehabilitation. Indeed, despite the urgency of the sick leave problem and the need for investment in the sustainable and employability of workers, such investments are still scarce (Beekman 2023).

Future studies should be multi-factorial and informed by these findings, addressing the diverse aspects influencing RTW reported by breast cancer survivors themselves, but also including perspectives of other potential stakeholders (i.e., employers, colleagues, psychologists, and rehabilitation teams) for planning timely interventions to prevent work disability. Additionally, future directions should be focused on a sustainable long-term returning to work, which means pay attention to the longer RTW process rather than a state of being back at work in the short-term. RTW is often studied in a generalized matter, mainly focusing on the type of illness (e.g., cancer, musculoskeletal diseases, etc.) but the process is complex and diverse and it is strongly influenced by contextual and psychological factors; future studies are needed to use a more specific and tailored approach (Beekman 2023).

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Disclosure statement

No potential conflict of interest was reported by the author(s).

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Sitography

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