

3rd World Conference on Psychology and Sociology, WCPS- 2014

## Expectations towards Future, Resiliency, Social Self-Efficacy in Adolescents After Bone Cancer Treatment

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### Abstract

Purpose of the article: to assess expectations toward future in adolescents after bones cancer treatment and to deep relationship between expectations toward future, resilience and social self-efficacy. Method, 32 adolescents with past bone cancer experience and 48 adolescents selected in a normative sample, were requested to fill a questionnaire about Expectations for future, Ego-resiliency, Social Self-efficacy. Results, adolescents with cancer experience had more optimistic expectations toward future and were less open to experience compared to normative sample. In clinical sample expectations toward future were negatively related to global ego-resiliency and positively to impulse control; conversely in normative sample expectations toward future were positively correlated to global ego-resiliency, openness to new experience and social self-efficacy. Conclusions, in the period immediately following bones cancer treatment, patients' positive expectations toward future could express an unrealistic optimism rather than a correct evaluation.

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Peer-review under responsibility of Academic World Education and Research Center

*Keywords:* ego-resiliency, social self-efficacy, cancer treatment.

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### 1. Introduction

Dealing with childhood bone cancer is a dramatic event that could influence psychosocial functioning for a long time. Specifically, the period immediately following cancer treatment can be highly stressful for adolescents (Ellis, 2000). However most of research analyzed how young patients adjust to cancer experience only long time after the end of the treatment (Dieluweit et al., 2010) and few studies focused on the period immediately following cancer treatment (Stam, Grootenhuis & Brons, 2006; Smorti, 2011). Since bone cancer post treatment involves nursing

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care, temporary loss of mobility and long rehabilitation plans, it become important to assess the way adolescents look at the future.

The present study aims to assess whether some psychological attitudes as expectations toward future, resiliency and social self-efficacy can affect adolescents' struggle against bones cancer experience.

Optimistic expectations toward future, powerful for physical health (Detti & Smorti, 2008), seem particularly relevant in oncologic patients (Carver, 2005) given that, acting as psychologically protective mechanisms, can help adolescents with cancer to cope with the disease (Smorti, 2011). Moreover, it become relevant to investigate which other factors, together with optimistic expectations, can promote adolescents' adjustment to cancer experience. Successful adaptation to the experience of cancer requires from adolescent patients to manage effectively their emotions and behavior, interact with their social and non-social environment and think in a new way in order to be able to alter or affect stress sources. These are all processes linked to resilience and social self-efficacy.

The concept of resilience assumes that individuals could overcome difficulties and have a better adjustment when they use strengths and abilities they already have (Luthar, Sawyer & Brown, 2006). Research conducted on resilience in young oncologic patients displayed that cancer survivors often manifest remarkable resilience to illness (Kim & Yoo, 2010).

Social self-efficacy is defined as an individual's perceived ability to influence life events and social conditions. For example, individuals with low self-efficacy experience self-doubt about their capabilities when challenged and either reduce effort or give up. On the other hand, those with a strong sense of self-efficacy exert greater effort to master a task when faced with obstacles (Bandura & Shunk, 1981)

Moving from previous considerations, the purpose of the present study is to assess, in the period immediately following bones cancer treatment, adolescents' expectations toward future deepening its relationship with resilience and social self-efficacy. In order to have a comparison group and in line with previous research (Aksnes, Hall, Jebsen, Fosså & Dahl, 2007), in the present study a normative sample (NORMs) drawn from the general population was used.

Because in the period immediately following successful cancer treatment pediatric patients tend to report worse quality of life (Stam, Grootenhuis & Brons, 2006), we hypothesize that adolescents with cancer experience report lower level of expectations toward future, resilience and social self-efficacy than NORMs.

## **2. Method**

### *2.1. Sample and Procedure*

### *2.2. Adolescents with a cancer experience (AWCE)*

Forty 11 to 20 years old adolescents treated in a pediatric oncology ward in the Hospital of the Academic Medical Centre in Florence were asked to participate to the present study. Inclusion criteria were: 1) age 11–20 years, 2) treatment according to one of the osteosarcoma or Ewing tumors, 3) complete first remission, 4) end of successful treatment at most 1 month before, and 5) being able to complete the questionnaires. While the patients were waiting for the first short-term follow-up they were asked to fill in anonymously the questionnaires. The patients' parents were asked to give permission for their child's participation in this study. Of 40 eligible adolescents patients, 32 (80%), 18 male and 14 female, aged 11 to 20 years (mean age = 15.2; SD = 3) agreed to participate. No significant differences were found between the participants and non participants with respect to age and sex. The Medical Ethic Committee of the Academic Medical Center in Florence has approved the study protocol.

### *2.3 Normative Group (NORM)*

Gender and age-matched control adolescents were randomly selected among NORM. NORM data were derived from a school-based survey on adolescents' mental health in Italy conducted in 2007 (N=196; mean age=15.8, SD=2.6). From this sample, a total of 48 adolescents (29 male; 19 female) aged 11 to 20 years (mean age = 15.8; SD = 2.5) were randomly selected. All individuals with self-reported history of cancer were excluded from these

NORM.

### 3. Measures

#### 3.1. Expectations toward future

Italian version (Bonino, Cattelino & Ciairano, 2005) of Expectation for Future Scale (Jessor Donovan & Costa, 1992) was administered. The scale consists in 9 items that ask participants to respond what are their chances (1=very low; 5=very high) about different life domains. Expectations toward future would be higher as the score is higher.

#### 3.2. Resilience

Italian version (Caprara, Steca & De Leo, 2003) of Ego-Resiliency Scale (Block & Kremen, 1996), was administered. This scale consists in 10 items where participants indicate their agreement (1=disagree very strongly; 4=agree very strongly) about their the ability to adapt one's level of control temporarily up or down as circumstances dictate. Total score ranged from 10 to 40 with higher scores correspond with higher levels of resiliency. Italian version of ego resiliency scale was formed by two factors (Sanna & Smorti, 2006), "impulse control" (6 items) and "openness to experience" (4 items), both consistent with Authors' view (Block & Kremen, 1996). In the present study was used both global scale score and sub-scales score.

#### 3.3. Social self-efficacy

Italian version (Caprara, 2001) of Social Self-efficacy Scale (Bandura, Barbaranelli, Caprara & Pastorelli, 1996) was administered to measure expectation of success in different social tasks that contribute to success in social relationships. This scale consists in 15 items where participants indicate their degree of confidence in their ability to face off with different social situation (1=Cannot do at all; 5= can do at all). Self-efficacy would be higher as the score is higher.

### 4. Statistical Analysis

The statistical program SPSS 18 for Windows was used for all analyses. Means were compared by Univariate Analysis of Variance (ANOVA). In order to assess correlation between variables in two group of subjects, we performed two different Bivariate Correlation tests, one within adolescents with cancer experience and one within normative sample.

### 5. Results

Table 1. Descriptives

AWCE Mean (SD)	NORM Mean (SD)	F
Expectation toward future (range 9-45)	41.15 (3.71)	35.23 (4.01)
Ego-resiliency (range 10-40)	46.94 (4.51)	51.13 (4.27)
Openness to experience (range 4-16)	10.41 (3.39)	13.92 (3.83)

AWCE had very high (optimistic) expectations toward future (close to the maximum of the Scale) higher than comparison group. Moreover, AWCE had a lower mean ego-resiliency global score and openness to experience and higher mean impulse control than the NORM. Finally, AWCE, have lower mean social self-efficacy than the NORM (Table 1).

Table 2 shows the correlations between expectations toward future, ego-resiliency and coping strategies in AWCE and in NORM.

Table 2- Bivariate Correlation between variables in AWCE (under diagonal) e in NORM (above diagonal)

	Ego resiliency	Openness to experience	Impulse Control	Social self-efficacy	Expectation toward future
Ego resiliency	---	.584***	-.124	.542**	.325*
Openness to experience	.556****	---	-.152	.345*	.335*
Impulse control	.466***	-.003	---	.123	-.336*
Social self-efficacy	.537**	.223	-.099	---	.490***
Expectation toward future	-.456**	-.187	.605****	.161	---

\* P<.05; \*\* P<.01; \*\*\*P<.005; \*\*\*\*P<.001

In AWCE expectations toward future were significantly negatively correlated to global ego-resiliency ( $P<.01$ ) and they were significantly positively correlated to impulse control ( $P<.001$ ). No significant correlations were observed among expectations toward future and openness to experience (n.s.), social self-efficacy (n.s.). Moreover, ego-resiliency was significantly and positively correlated both to openness to experience ( $P<.001$ ) and impulse control ( $P<.005$ ).

In NORM, expectations toward future were significantly positively correlated to global ego-resiliency ( $P<.05$ ), openness to experience ( $P<.05$ ) and social self-efficacy ( $P<.005$ ) and they were negatively related to impulse control ( $P<.05$ ).

Moreover, ego-resiliency was significantly and positively correlated to openness to experience ( $P<.001$ ), social self-efficacy ( $P<.01$ ) and negatively to impulse control ( $P<.005$ ).

## 6. Discussion

The present study focused on optimistic expectations toward future deepening their relationship with resilience and coping strategies in adolescents after bones cancer. Results showed that AWCE had more optimistic expectations toward future and were less open to experience compared to NORM. Moreover, they had lower social self-efficacy, lower global ego-resiliency, and higher impulse control than NORM did. Moreover in AWCE, expectations toward future are negatively related to global ego-resiliency and positively to impulse control; conversely, in NORMs, expectations toward the future are positively correlated to global ego-resiliency, openness to new experience and social self-efficacy.

The optimistic expectations toward future found in AWCE confirm previous research that have found that long-term pediatric cancer survivors report a high quality of life (Zebrack & Chesler, 2002) and a good psychological functioning (Zebrack et al., 2004).

Lower level in global ego-resiliency and openness to new experience in clinical sample is not in line with previous research which revealed that cancer survivors manifest considerable resilience in front of the illness, despite experiencing difficult or catastrophic life events (Rowland & Baker, 2005). Finally, higher impulse control used by AWCE seem confirm previous investigations that these subjects tend to use emotion-focused and avoidance strategies to a greater extent than peer normative sample do (Zucca, Boyes, Lecathelinais & Girgis, 2010).

Our data on optimistic expectations toward future suggest a good adaptation of oncologic adolescents that, beginning in the period immediately following cancer cure, could persist long-term after treatment as previous reported (Zebrack et al., 2004). We can suppose that adolescents from our study, just for living the experience of having a bone cancer and of having received successful treatment, present more optimistic expectations toward future. However, from a comparison between AWCE, healthy adolescents and young people with chronic illness (Smorti & Sanna, 2007), the high level of expectations toward future, so close to maximum of the Scale, reported by our clinical sample, seems to be the expression of an optimistic bias such as unrealistic optimism rather than a correct evaluation.

Indeed, in AWCE, expectations toward future are negatively related to ego-resiliency and positively to impulse

control. Impulse control, typical of these patients, could be the expression of disposition to use a “repressive strategies” defined as typical of individuals who report relatively low distress and high restraint measures on defensiveness (Weinberger & Schwartz, 1990). This style, involving both decreased awareness of cognitive and affective distress and increased self-restraint, manifests in attempts to deny or minimize distress (Weinberger & Schwartz, 1990). It has been suggested that repressive strategies explain why people with cancer present low level of depressive symptoms (Phipps & Srivastava, 1997) despite their multiple challenges; in the same line we can argue that AWCE, adopting a higher impulse control and avoidance, tend to have more optimistic expectations toward future.

Conversely, in NORM, expectations toward future are positively correlated to global ego-resiliency and openness to new experience and negatively to impulse control. The relation among these variables is logical. In fact, if an individual has an optimistic expectation toward future, he or she will also be open to new experience. Moreover, since expectations referred both to cognitive and emotional orientation towards life, it is logical to suppose that individuals with positive expectations toward future tend to have less control of their impulse and are prone to be more spontaneous.

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