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Purpose and life satisfaction during adolescence: the role of meaning in life, social support, and problematic digital use

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ABSTRACT

This study examined the characteristics of youth with different types of purpose in life, as well as the associations between adolescents' life satisfaction, purpose in life, meaning in life, social support, and problematic digital use. The sample included 193 participants aged 14–18 who completed self-report questionnaires on life satisfaction, purpose in life, meaning in life, social support, and problematic digital use. The following purpose in life clusters were found: (1) other-oriented goals ($n = 33$); (2) self-oriented goals ($n = 42$); and (3) both other- and self-oriented goals ($n = 107$). Adolescents with both self- and other-oriented goals had significantly higher life satisfaction, meaning in life, and social support compared to the other groups. Meaning in life and greater support from parents and teachers were significantly associated with *greater* life satisfaction. In addition, having other-oriented goals was associated with *lower* life satisfaction. Finally, support from parents ($p = 0.05$) mediated the association between problematic digital use and life satisfaction. Findings are discussed in light of previous research and the theoretical and practical implications are examined.

Introduction

Life satisfaction, a central concept in positive psychology research, refers to the cognitive component of subjective wellbeing and has been defined as 'an individual's overall appraisal of the quality of his or her life' (Gilman and Huebner 2003). Higher life satisfaction has been associated with positive outcomes such as better physical and mental health, better job performance, and less engagement in problematic behaviors (Erdogan et al. 2012; Gilman and Huebner 2003; Proctor, Linley, and Maltby 2009; Sun and Shek 2010). Studies have reported a number of different variables to be associated with higher life satisfaction. In this study we focused on the relationships between life satisfaction, purpose in life, meaning in life, social support, and problematic use of digital environments.

Purpose in life has been defined as 'a stable and generalized intention to accomplish something that is meaningful to the self and leads to engagement with some aspect of the world beyond the self' (Damon, Menon, and Bronk 2003). According to Damon (2008a), lacking a sense of purpose in life is associated with negative psychological

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outcomes, such as depression, social isolation, eating disorders, and substance abuse. Indeed, having purpose in life has been associated with greater life satisfaction across the life span (Bronk et al. 2009). Studies have indicated that individuals vary in the extent to which the purpose that they have in their life focuses on the self, versus focusing on the world beyond the self (i.e. others). For example, Bronk and Finch (2010) found that adolescents can be categorized according to the type of purpose that they have in their lives: (1) youth with self-oriented long term aims, such as having a good career (2) youth with other-oriented long term aims, such as helping others (3) youth with both self-oriented and other-oriented long term aims, and (4) youth with neither self-oriented nor other-oriented long term aims. Findings from their study indicated that, compared to the other groups, adolescents with both self-and-other-oriented long term goals had the highest level of life satisfaction, whereas youth with no-orientation had the lowest level of life satisfaction. The current study aimed to replicate the purpose in life clusters found by Bronk and Finch (2010) among Israeli youth and to characterize adolescents with different types of purpose in life according to satisfaction in life, meaning in life, social support, and problematic digital use. Furthermore, these variables (purpose in life, meaning in life, social support, and problematic digital use) were examined as predictors of life satisfaction. Research on the associations between the study variables are described below.

A construct related to purpose in life is *meaning in life*, which refers to both the search and presence of meaning, although these are separate independent dimensions of meaning in life (Steger, Oishi, and Kesebir 2011). People are characterized by a 'will to meaning' (Frankl 1963) – an innate drive to find meaning and significance in their lives – and failure to find meaning results in psychological distress. Meaning in life has been found to be protective against mental health problems, as well as engagement in risk behaviors (e.g. substance abuse) among youth (Brassai, Piko, and Steger 2011). For example, one study found that both the search and presence of meaning were protective against suicidal ideation (Kleiman and Beaver 2013). Furthermore, greater meaning in life has been found to be associated with increased life satisfaction in a number of studies (e.g. Ho, Cheung, and Cheung 2010; Lightsey and Boyraz 2011; Steger, Oishi, and Kesebir 2011).

An additional important factor which has been associated with children and adolescents' life satisfaction is *social support* (e.g. Kong and You 2013; Kong, Zhao, and You 2012; Malinauskas 2010). For example, a study which examined the association between loneliness and life satisfaction among Turkish early adolescents (aged 11–15) found that self-esteem and social support partially mediated the association between loneliness and reduced life satisfaction (Kapikiran 2013).

The associations between social support and life satisfaction may be different according to the source of social support and background variables. For example, findings from a study by Piko and Hamvai (2010) indicated that for boys, parental support was associated with life satisfaction, while for girls the number of close friends was associated with greater life satisfaction (Piko and Hamvai 2010). A study on college students indicated that both familial support and support from faculty members were significantly associated with greater life satisfaction (Yalcin 2011). Indeed, support from teachers has also been associated with school students' life satisfaction (Suldo, Riley, and Shaffer 2006). Furthermore, a meta-analysis on social support and wellbeing among children and adolescents indicated that teacher support was more strongly associated with greater wellbeing than other sources of social support (Chu, Saucier, and Hafner 2010).

Another important variable to consider in contemporary society is the role that use of digital technologies play in determining life satisfaction. While the use of digital technologies has become a crucial integral part of various aspects of our lives, it may have negative effects on functioning and wellbeing if such use is excessive (Smyth, Curran, and McKelvey 2018). *Problematic use of digital environments*, otherwise known as 'internet addiction' or 'problematic internet use', refers to excessive use of cyberspace over extended periods of time combined with dysfunction in everyday life, disregard for other life events, and social isolation as a result of preferring digital interactions over face-to-face communication (Weinstein and Lejoyeux 2010). Problematic digital use has been found among 1.5–8.2% of individuals in Europe and the United States (Weinstein and Lejoyeux 2010), and is particularly prevalent in the Middle East (10.9%, Cheng and Lee 2014). It has been associated with various negative outcomes including problematic alcohol use (Ko et al. 2008), psychosomatic symptoms (Cao et al. 2011), behavioral problems (Cao et al. 2011), mental health disorders (Ko et al. 2012; Weinstein and Lejoyeux 2010), and diminished life satisfaction (Cao et al. 2011; Celik and Odaci 2013; Cheng and Lee 2014; Huang 2010). Similarly, addiction to playing digital games has also been associated with poor psychosocial outcomes including aggression, low sociability, and lower life satisfaction (Festl, Scharkow, and Quandt 2013). Problematic use of social networking sites, virtual communities in which participants interact with others, has also been associated with decreased participation in social activities and relationship problems (Kuss and Griffiths 2011).

The Israeli context

The level of individual wellbeing has been found to differ according to culture in a number of studies (Diener, Oishi, and Ryan 2012; Moran 2018; Proctor, Linley, and Maltby 2009). Cultural characteristics, such as individualism and family values, may shape the determinants of life satisfaction, as well as the type of purpose in life that adolescents tend to hold (Heng, Blau, Fulmer, Bi, and Pereira 2017). Israel is a culture with moderate levels of individualism and an emphasis on family values (Heng et al. 2017; Schwarz et al. 2012). A cross-cultural study among school students (Schwarz et al. 2012) found that whereas parental support was found to be associated with greater life satisfaction across different cultures, the importance of peer support was found to differ between cultures. Namely, in cultures in which family values were emphasized strongly (including Israel), peer support was more weakly associated with life satisfaction. Similarly, a study comparing subjective wellbeing among college students from Iran, Jordan and the United States (Brannan et al. 2013) indicated that perceived family support was associated with well-being in all countries, whereas perceived peer support only predicted wellbeing in college students from Jordan and the United States.

Research goals and questions

The central aims of the study were: (1) to replicate the categorization of purpose in life reported by Bronk and Finch (2010) in a culturally different sample of youth (Israeli adolescents), (2) to characterize youth with different types of purpose in life according to the other study variables, (3) to examine the associations between purpose in life,

meaning in life, social support, and life satisfaction among Israeli youth. Since ubiquitous use of digital devices has become an integral part of the everyday life of youth, the current study aims not only to replicate the categorization of purpose in life, but also to add to the prediction of satisfaction in life by adding an additional predictive variable, i.e. problematic digital use, to the model which has been suggested (Benson 2006; Damon 2009) and tested (Bronk and Finch 2010) in previous studies. Finally, given previous research indicating that problematic digital use is associated with impaired social functioning, and that greater social support is associated with greater life satisfaction (as described above), we also examined the mediating role of social support in the association between problematic digital use and life satisfaction.

The research questions in this study were:

(1) Which of the types of purpose in life, suggested by Benson (2006) and Damon (2009) and found by Bronk and Finch (2010), are relevant to Israeli youth?
(2) How do youth who have different types of purpose in life differ in relation to satisfaction in life, meaning in life, social support, and problematic digital use?
(3) Which of the study variables (type of purpose in life, meaning in life, social support, and problematic digital use) predict satisfaction in life?
(4) Does social support mediate the association between problematic digital use and life satisfaction?

Method

Participants

Public school students in mid-adolescence volunteered to participate in this study. These students were deemed sufficiently mature and reflective to provide a range of responses to the questionnaire. The sample included 193 participants aged 14–18, 50% of whom were female. 73.0% of the sample was secular and 27.0% were religious. The participants did not differ in level of satisfaction with life as a function of gender (male: M = 33.34 vs. female: M = 33.48, $t = -0.169$, $p = .866$) or religiosity (secular: M = 33.03 vs. religious: M = 34.41, $t = -1.452$, $p = .148$).

The participants live in central Israel and study in three large secondary public schools defined by the Ministry of Education as average in socio-economic level. Participation in the study was not related to the schools' activities.

Instruments

Purpose of life was assessed using a portion of the Revised Youth Purpose Survey (Bundick et al. 2006), similarly to a study by Bronk and Finch (2010). The portion of the questionnaire which was used consists of 17 items which represent statements about the individual's purpose of life (e.g. 'The purpose of my life is to help others', 'The purpose of my life is to do the right thing'). Agreement with each item is rated on a scale from 1 'strongly disagree' to 7 'strongly agree'. Good internal reliability was found for the scale ($a = .81$).

The scale items can be categorized into three categories according to the type of life purpose: (1) attending others' needs (e.g. help others, serve my country), (2) tending to

one's own needs (e.g. have a good career, be successful), (3) items that are not necessarily oriented toward the cultivation of one's own or others' needs (discover new things about the world, do the right thing; Bronk and Finch 2010). A cluster analysis was conducted and participants were categorized into clusters according to the type of life purpose they endorsed.

Meaning in life was measured by the Meaning in Life Questionnaire (MLQ; Steger et al. 2006), which includes 10 items that assess two dimensions of meaning in life: *the search for meaning in life* (5 items, e.g. 'I am always looking to find my life's purpose') and *the presence of meaning in life* (5 items; e.g. 'I have a good sense of what makes my life meaningful'). Agreement with each of the items is rated on a scale from 1 'absolutely untrue' to 7 'absolutely true'. A previous study (Steger et al. 2006) reported good internal consistency for the search subscale ($a = .87$) and for the presence subscale ($a = .82$). In the current study, a reliability score of $a = .86$ was found for the search subscale and $a = .77$ for the presence subscale.

Social support was measured by The Child and Adolescent Social Support Scale (Malecki and Demaray 2002), a questionnaire with five subscales assessing the perceived presence and importance of social support from different sources: (1) parents, (2) teachers, (3) other school staff, (4) classmates, and (5) close friends. Each subscale consists of 12 items, representing ways of providing support (e.g. 'My parents show they are proud of me', 'My teacher makes sure I have what I need for school', 'People in my school explain things that I don't understand', 'My classmates spend time doing things with me', 'My close friend gives me ideas when I don't know what to do'), with each subscale including items that represent emotional (attention and understanding), instrumental (providing resources such as financial resources), informational support (providing advice and guidance), and appraisal social support (providing constructive feedback). Participants are asked to rate each item according to how frequently they receive the type of support on a scale from 1 'never' to 6 'always'. A previous study (Mariano et al. 2011) reported good internal reliability for the various subscales (parental support: $a = .91$; teacher support: .88; other school staff support: .95; classmate support: .93; close friend support: .95). In the current study, reliability scores were $a = .91$ for parental support, $a = .92$ for teacher support, $a = .95$ for other school staff support, $a = .95$ for classmate support, and $a = .93$ for close friend support.

Satisfaction with life was measured using the Satisfaction with Life Scale (Diener et al. 1985). This questionnaire assesses the participants' global sense of satisfaction with life according to six items (e.g. 'The conditions of my life are excellent'), which they are asked to rate their agreement with on a scale from 1 'strongly disagree' to 7 'strongly agree'. Higher scores on this measure indicate greater satisfaction with life. Good internal reliability was found for the scale ($a = .76$).

Problematic digital use was assessed using Blau's (2011) questionnaire which is based on the eight criteria presented by Young (1996). The questionnaire includes eight items which participants rate their agreement with on a scale from 1 'strongly disagree' to 5 'strongly agree'. Example items include 'When I am offline, I anticipate the next time I will be online', 'I have made unsuccessful attempts to reduce the amount of my online activities'. A previous study (Blau 2014) indicated high internal consistency for the scale ($a = .89$ for the Hebrew version of the questionnaire).

Procedure

Ethical approval was obtained from the Institutional Ethical Committee. Participants were recruited during the school year (of 2016) through flyers hung at the entrance of secondary schools located in central Israel. Confidentiality was assured. Adolescents who were interested in participating in the study contacted the research assistant and provided informed consent and a letter of consent from their parents to participate in the study. Questionnaires were administered during one session in each of the three schools, not exceeding 20 min, with a researcher present during the survey to answer questions.

Missing data on the measure of classmate support was evident for 52 of the participants in the study (27%), due to a printing error which resulted in some of the questionnaires having a missing page (the page with the classmate support subscale). Single imputation of missing values (Donders et al. 2006) on this measure was conducted by predicting classmate support according to support from parents, teachers, other school staff, and close friends through linear regression for those with valid values on all support variables, and then using the regression equation to predict classmate support according to the other support variables among participants with missing values. Thus, it was possible to include these 52 cases in the correlation and regression analyses.

The data that support the findings of this study are available on request from the corresponding author.

Statistical analyses

We conducted a two-step cluster analysis (SPSS 2001) of the 17 purpose items to identify possible groups of students using a hierarchical clustering approach that maximizes differences among clusters with model fit based on the lowest Bayesian Information Criterion statistic. We examined pattern of responses to label each cluster appropriately. This was followed by analyses of variance (ANOVA) to examine the mean differences between the clusters (other-oriented, self-oriented, and self & other oriented) on the study variables (satisfaction with life, search for meaning in life, presence of meaning in life, parental support, support from teachers, support from other school staff, support from classmates, support from close friends, and problematic internet use). LSD post hoc analyses were conducted to identify the pairwise significant differences between the clusters.

Pearson correlations were conducted to examine the associations between life satisfaction and the other study variables (purpose of life clusters, search for meaning in life, presence of meaning in life, parental support, support from teachers, support from other school staff, support from classmates, support from close friends, and problematic internet use) among study participants with valid data on all study variables ($n = 178$). This was followed by a linear regression predicting life satisfaction by the other study variables (purpose of life clusters encoded into two dummy variables – the other-oriented cluster and the self-oriented cluster, search for meaning in life, presence of meaning in life, parental support, support from teachers, support from other school staff, support from classmates, support from close friends, and problematic internet use). Finally, to examine whether social support mediates the association between problematic digital use and life satisfaction, Kenny's (2016) criteria for establishing mediation were examined and Sobel tests were conducted to verify statistical significance of mediation. According to Kenny (2016), the following criteria must be verified to establish mediation: (1) the

predictive variable (problematic digital use) must be significantly correlated with the outcome (life satisfaction); (2) The predictive variable (problematic digital use) is correlated with the mediator (social support); (3) The mediator (social support) is significantly associated with the outcome variable (life satisfaction), even after controlling for the predictive variable (problematic digital use); and (4) The effect of the predictive variable (problematic digital use) on the outcome variable (life satisfaction) is zero, when controlling for the mediator (social support). All analyses were conducted using SPSS 23 program.

Results

Purpose in life clusters

A two-step cluster analysis was conducted yielding four clusters according to their responses on the purpose in life variable, similarly to the four groups found in Bronk and Finch's (2010) study. The first cluster represented youth with *other-oriented* long term goals ($n = 33$); the second cluster represented adolescents with *self-oriented* long term goals ($n = 42$); and the third cluster represented adolescents with both *other- and self-oriented* long term aims ($n = 107$). A fourth cluster was identified including adolescents with *neither self- nor other-oriented goals*, however it was not included in the analysis because of the small number of adolescents in the group ($n = 3$). Finally, eight participants were not categorized into any of the groups because they had missing data on at least one of the purpose in life items. Means and standard deviations on each of the purpose in life items among each of the clusters are presented in Table 1. The no-orientation cluster had the lowest scores on all of the items with the exception of 'Live life to the fullest', 'Make money', and 'Have fun', for which means were the second lowest (since the no-orientation

Table 1. Means (range: 1–7) and standard deviations on purpose items by cluster.

Items	(1) Other-focused ($n = 33$)	(2) Self-focused ($n = 42$)	(3) Self & other-focused ($n = 107$)	LSD post-hoc tests, p's < .05
	M(SD)			
B1. Help others	5.94(1.22)	5.36(1.27)	6.44(.63)	1,2 < 3
B2. Serve God or a Higher Power	2.30(1.78)	2.02(1.58)	3.47(2.27)	1,2 < 3
B3. Make the world a better place	5.94(1.27)	4.69(1.35)	6.30(1.01)	2 < 1,3
B4. Change the way people think	4.55(1.77)	3.10(1.66)	4.50(1.64)	2 < 1,3
B5. Create something new	5.39(1.58)	4.38(1.74)	5.83(1.10)	2 < 1,3
B6. Make things more beautiful	4.82(1.61)	4.10(1.27)	6.02(.99)	1,2 < 3
B7. Fulfill my obligations/duties	5.52(1.72)	5.38(1.36)	6.36(.84)	1,2 < 3
B8. Do the right thing	5.55(1.50)	5.38(1.48)	6.52(.68)	1,2 < 3
B9. Live life to the fullest	5.79(1.54)	6.62(.54)	6.72(.60)	1 < 2,3
B10. Make money	3.70(1.79)	5.76(1.01)	6.15(1.14)	1 < 2,3
B11. Discover new things about the world	5.27(1.64)	4.76(1.41)	6.08(1.18)	1,2 < 3
B12. Earn the respect of others	4.70(1.49)	4.67(1.60)	5.66(1.66)	1,2 < 3
B13. Support my family and friends	6.21(1.27)	6.52(.59)	6.93(.25)	1,2 < 3
B14. Serve my country	4.73(1.53)	4.93(1.49)	6.38(.94)	1,2 < 3
B15. Have fun	5.55(1.42)	6.67(.53)	6.78(.54)	1 < 2,3
B16. Be successful	4.64(1.27)	6.38(.73)	6.77(.49)	1 < 2<3
B17. Have a good career	4.45(1.37)	6.43(.77)	6.79(.49)	1 < 2<3

Notes: Cluster 1: Other-focused gp – Highest mean values on *Help others, Make the world a better place, Fulfil my obligations/duties,* and *Do the right thing*. Cluster 2: Self-focused gp – High mean values on *Live life to the fullest, Make money, Have fun, Be successful,* and *Have a good career*. Cluster 3: Self- and other-focused gp – Highest mean values on all purpose items except for *Serve God or a Higher Power*.

cluster was excluded from the analysis, this data is not presented in the table). The self-focused group had a high mean on the items 'Make money', 'Earn the respect of others', 'Support family and friends', 'Be successful', and 'Have a good career'. In addition, this group had relatively low means for items such as 'Help others', 'Make the world a better place', 'Fulfill duties', and 'Do the right thing', which were high for the other-focused group. The self- and-other-focused cluster can be characterized as having both types of long-term aims and having the highest means on all of the items. As can be seen in Table 2, no significant differences were found between the groups in the distribution of gender and religiosity.

Characteristics of adolescents with different types of purpose in life

Analyses of variance (ANOVA) were conducted to examine the mean differences between the clusters (other-oriented, self-oriented, and self & other oriented) on the study variables (satisfaction with life, search for meaning in life, presence of meaning in life, parental support, support from teachers, support from other school staff, support from classmates, support from close friends, and problematic digital use). LSD post hoc analyses were conducted to identify the pairwise significant differences between the clusters. ANOVAs (Table 3) indicated that adolescents with both self- and other-oriented goals had significantly higher satisfaction with life ($m = 34.85$), presence of meaning in life ($m = 25.55$), and support from teachers ($m = 46.73$), other school staff ($m = 46.50$), and close friends ($m = 62.14$) compared to youth with self-oriented goals (life satisfaction: $m = 31.95$; presence: $m = 21.33$; teacher support: $m = 40.19$; other school staff support: $m = 35.79$; close friend support: $m = 57.19$) and youth with other-oriented goals (life satisfaction: $m = 30.09$; presence: $m = 21.97$; teacher support: $m = 41.82$; other school staff support: $m = 39.52$; close friend support: $m = 54.70$). In addition, youth with self-oriented goals had significantly lower scores on search for meaning in life ($m = 18.24$) compared to youth with other-oriented goals ($m = 21.94$) and youth with self- and other-oriented goals ($m = 22.14$). Youth with other-oriented goals reported having significantly lower levels of support from parents ($m = 51.85$) and from other school staff ($m = 39.52$) compared to adolescents with self-oriented goals (parental support: $m = 57.62$; other staff support: $m = 35.79$) and adolescents with self- and other-oriented goals (parental support: $m = 60.37$; other staff support: $m = 46.50$).

Purpose in life, meaning in life, social support, and problematic digital use as predictors of life satisfaction

This analysis was followed by Pearson correlations to examine the associations between life satisfaction and the other study variables (purpose in life clusters, search for meaning in life, presence of meaning in life, parental support, support from teachers, support from other school staff, support from classmates, support from close friends,

Table 2. Demographic characteristics by cluster.

Demographics	Other-focused ($n = 33$)	Self-focused ($n = 42$)	Self & other focused ($n = 107$)	Comparison
Gender: Male	15(46.9%)	18(42.9%)	56(53.3%)	$\chi^2(2) = 1.44$, $p = .49$
Religion: Secular	23(71.9%)	34(85.0%)	70(68.0%)	$\chi^2(2) = 4.21$, $p = .12$

Table 3. Outcome measures by cluster.

Outcome measures	Mean(SE)			Comparison (F, effect size and post-hoc tests)
	(1) Other-focused (n = 33)	(2) Self-focused (n = 42)	(3) Self & other focused (n = 107)	
Satisfaction with life[a]	30.09(.95)	31.95(.84)	34.85(.53)	$F(2,180) = 11.17, p = .00, _p\eta^2 = .11, 1,2 < 3$
Presence of meaning[a]	21.97(1.10)	21.33(.98)	25.55(.61)	$F(2,182) = 8.64, p = .00, _p\eta^2 = .09, 1,2 < 3$
Search for meaning[a]	21.94(1.32)	18.24(1.17)	22.14(.73)	$F(2,182) = 4.17, p = .02, _p\eta^2 = .05, 2 < 1,3$
Parental support[b]	51.85(1.78)	57.62(1.58)	60.37(.99)	$F(2,182) = 8.85, p = .00, _p\eta^2 = .09, 1 < 2,3$
Support from teachers[b]	41.82(2.14)	40.19(1.90)	46.73(1.19)	$F(2,182) = 5.09, p = .01, _p\eta^2 = .05, 1,2 < 3$
Support from other school staff[b]	39.52(2.40)	35.79(2.13)	46.50(1.35)	$F(2,179) = 10.09, p = .00, _p\eta^2 = .10, 1,2 < 3$
Support from classmates[b]	46.21(8.98)	51.28(11.27)	54.50(11.44)	$F(2,179) = 7.31, p = .00, _p\eta^2 = .08, 1 < 2,3$
Support from close friends[b]	54.70(1.83)	57.19(1.62)	62.14(1.03)	$F(2,180) = 7.78, p = .00, _p\eta^2 = .08, 1,2 < 3$
Problematic digital use[c]	22.03(9.85)	20.90(8.28)	21.02(9.57)	$F(2,179) = 0.21, p = .81, _p\eta^2 = .00$

[a]range: 1–7; [b]range: 1–6; [c]range: 1–5.

and problematic digital use). Among the 193 participants in the study, 178 participants with valid data on *all* study variables (life satisfaction, purpose in life clusters, search for meaning in life, presence of meaning in life, parental support, support from teachers, support from other school staff, support from classmates, support from close friends, and problematic digital use) were included in the analysis. The findings (Table 4) indicated that *greater* life satisfaction was significantly related to having a higher level of presence of meaning in life ($r = .31, p = .00$), and greater support from parents ($r = .39, p = .00$), teachers ($r = .31, p = .00$), other school staff ($r = .22, p = .00$), classmates ($r = .30, p = .00$), and close friends ($r = .27, p = .00$). Furthermore, a *lower* level of life satisfaction was associated with having other-oriented life goals (in comparison with having self and other-oriented aims; $r = -.26, p = .00$) and higher levels of problematic digital use ($r = -.13, p = .00$).

Finally, a multiple linear regression was conducted predicting life satisfaction by the other study variables (purpose of life cluster, search for meaning in life, presence of meaning in life, parental support, support from teachers, support from other school staff, support from classmates, support from close friends, and problematic digital use) among the 178 participants with valid data on all study variables. A significant regression model (Table 5; [$F(10,177) = 7.49, p = .00$]) was found with satisfactory goodness of fit ($R^2 = .31$). The findings indicated that, when controlling for the other independent variables, a higher level of presence of meaning in life ($\beta = .16, p = .03$) and greater support from parents ($\beta = .24, p = .00$) and teachers ($\beta = .21, p = .03$) were significantly associated with *greater* life satisfaction. In addition, having other-oriented goals ($\beta = -.15, p = .04$) was associated with *lower* levels of life satisfaction. Together, these variables explained 31.0% of the variance in life satisfaction.

The mediating role of social support in the associations between problematic digital use and life satisfaction

Finally, we examined whether social support mediates the association between problematic digital use and life satisfaction by examining the conditions for mediation defined

Table 4. Pearson correlations between life satisfaction and other research variables ($n = 178$).

Variables	Life satisfaction	Meaning -presence	Meaning - search	Parental support	Teacher support	School staff support	Classmate support	Close friend support	Problematic digital use	Other-oriented[a]
Presence of meaning	.31***	–	–	–	–	–	–	–	–	–
Search for meaning	.03	.06	–	–	–	–	–	–	–	–
Parental support	.41***	.25***	−.14*	–	–	–	–	–	–	–
Teacher support	.32***	.19**	.03	.24***	–	–	–	–	–	–
School staff support	.24***	.32***	.02	.38***	.35***	–	–	–	–	–
Classmate support	.33***	.21**	.04	.41***	.05	.48***	–	–	–	–
Close friend support	.28***	.16*	.07	.18*	.71***	.31***	.17*	–	–	–
Problematic digital use	−.19***	.07	.21**	−.20**	−.09	−.09	−.19**	.10	–	–
Other-oriented	−.27***	−.14	.05	−.28***	−.09	−.25***	−.22**	−.11	.05	–
Self-oriented	−.13	−.22**	−.21**	−.03	−.18*	−.05	−.12	−.27***	.00	−.26***

*p<=.05, **p<=.01, ***p<=.001.

Table 5. Linear regression predicting life satisfaction according to study variables ($n = 178$).

Independent variables	B	SE	B	p
Presence of meaning	.14	.06	.16	.03
Search for meaning	.05	.05	.07	.31
Support from parents	.13	.04	.24	.00
Support from teachers	.10	.05	.21	.03
Support from classmates	.04	.04	.07	.41
Support from close friends	.02	.04	.03	.73
Support from other school staff	−.01	.04	−.03	.80
Problematic digital use	−.07	.05	−.11	.12
Other (dummy variable, reference group: other & self)	−2.19	1.08	−.15	.04
Self (dummy variable, reference group: other & self)	−.98	1.01	−.07	.33

by Kenny (2016), and by conducting Sobel tests among the 178 participants with valid data on all study variables. An examination of Kenny's (2016) criteria in relation to support from classmates as a mediator in the association between problematic digital use and life satisfaction indicated that: (1) the predictive variable (problematic digital use) is indeed significantly correlated with the outcome (life satisfaction; $r = .19$, $p \leq .001$); (2) The predictive variable (problematic digital use) is indeed correlated with the mediator (support from classmates: $r = −.19$, $p \leq .01$); A linear regression predicting life satisfaction according to problematic digital use and support from classmates indicated that – (3) The mediator (support from classmates) is significantly associated with the outcome variable (life satisfaction; $b = .14$, s.e. $= .03$, $p \leq .001$), even when controlling for the predictive variable (problematic digital use); However, contrary to the fourth criterion – (4) The effect of the predictive variable (problematic digital use) on the outcome variable (life satisfaction) was not zero and remained significant ($b = −.11$, s.e. $= .05$, $p \leq .05$) when controlling for the mediator (support from classmates). Similarly, Sobel tests indicated that support from classmates ($Z = 1.11$, $p = .27$) did not significantly mediate the association between problematic digital use and life satisfaction.

The mediating effect of support from friends, support from teachers and support from other school staff in the association between problematic digital use and life satisfaction did not meet Baron and Kenny's criteria since problematic digital use was not significantly associated with these measures (see Table 4).

Finally, an examination of Kenny's (2016) criteria in relation to parental support as a mediator in the association between problematic digital use and life satisfaction indicated that: (1) the predictive variable (problematic digital use) is indeed significantly correlated with the outcome (life satisfaction; $r = .19$, $p \leq .001$); (2) The predictive variable (problematic digital use) is indeed correlated with the mediator (parental support: $r = −.20$, $p \leq .01$); A linear regression predicting life satisfaction according to problematic digital use and parental support indicated that – (3) The mediator (parental support) is significantly associated with the outcome variable (life satisfaction; $b = .21$, s.e. $= .04$, $p \leq .001$), even when controlling for the predictive variable (problematic digital use); and (4) The effect of the predictive variable (problematic digital use) on the outcome variable (life satisfaction) is zero ($b = −.01$, s.e. $= .04$, $p = .11$) when controlling for the mediator (parental support). Furthermore, a Sobel test confirmed that parental support significantly mediated the association between problematic digital use and life satisfaction ($Z = 1.90$, $p = .05$). Thus, according to both Kenny's (2016) criteria and the Sobel test, parental support was
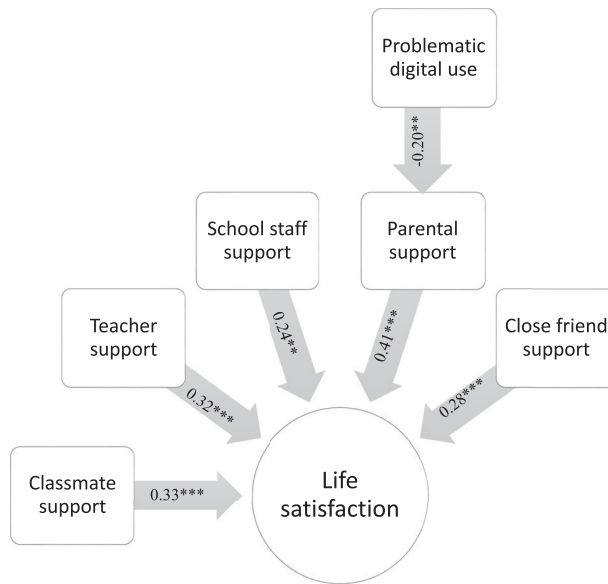
Figure 1. Mediation model: Parental social support as a mediator of the association between problematic digital use and life satisfaction.

found to significantly mediate the association between problematic digital use and life satisfaction (findings presented in Figure 1).

Discussion

This study explored the purpose in life classification reported by Bronk and Finch (2010) in an Israeli sample of youth, revealing three of the four groups, and shedding light on the characteristics of these groups according to meaning in life, social support, life satisfaction, and problematic digital use. Furthermore, an examination of the study variables associated with greater life satisfaction emphasized the importance of the presence of meaning in life and support from parents and teachers.

The first study aim was to examine whether the classification of purpose in life which was suggested by Benson (2006) and Damon (2009) and found by Bronk and Finch (2010) could be replicated in an Israeli sample of youth. Findings indicated that the adolescents in the sample could be categorized into four groups: (1) youth with *self-oriented* long term goals, (2) youth with *other-oriented* long term goals, (3) youth with both *self- and other-oriented* long term goals, and (4) youth with *neither self- nor other-oriented* goals, who were not analyzed in this study because of the small number of participants. Furthermore, the current study reported similar proportions of youth in each of the three categories which were included in the current analyses, as Bronk and Finch (2010) reported. Namely, in both studies the majority of youth had self- and other-oriented goals (current study: 56.3%, Bronk and Finch 2010, 60.4%), followed by self-oriented goals (current study: 22.1%, Bronk and Finch 2010, 22.2%), and other-oriented goals (current study: 16.8%, Bronk and Finch 2010, 13.2%). Youth with no orientation in terms of future goals were a minority (4.2%) in Bronk and Finch's study (2010), and were few in

the current study ($n = 3$, 1.6%), indicating that in Israeli youth, they may be a vast minority. Another possible explanation for this may be the study methodology, which is discussed above in the limitations section. In summary, overall, the findings of the first research question replicated the classification of purpose in life, suggested and found in previous research. This is somewhat surprising given the differences between American and Israeli culture in values of individualism and collectivism, with the United States more individualistic than Israeli society (Schwarz et al. 2012). Nonetheless, it seems that this did not have a dramatic effect on the types of purpose in life which adolescents had. Further research is needed to examine further the association between culture and purpose in life orientation.

The second study aim was to examine the characteristics of each purpose in life group in terms of life satisfaction, meaning in life, and social support. In correspondence with Bronk and Finch's (2010) findings, youth with self- and other-oriented goals had the highest level of life satisfaction. In addition, the current study found that adolescents with self- and other-oriented goals had greater presence of meaning in life and greater support from teachers, other school staff, and close friends than adolescents with only self- or other-oriented goals. Thus, it seems that having self- and other-oriented goals is associated with the highest levels of subjective wellbeing and social support. Indeed, having self- and other-oriented goals represents a balance between recognizing the importance of meeting one's own personal needs and the desire to help others. Self-and other-oriented goals seem to reflect a level of emotional maturity which may develop in optimal environments (i.e. in which youth have high levels of social support from their environment and a nurturing upbringing that fosters high levels of subjective wellbeing). However, further research is needed to reach a greater understanding of these associations, and especially the direction of influence between the different factors, as well as possible mediating factors which may underlie these associations. One possible direction is to examine these associations in relation to adolescents' identity status. Identity status may be associated with the types of goals one sets for oneself (self and/or other oriented), given findings that identity formation and development of purpose are interactive processes during adolescence (Bronk 2011). Furthermore, identity status is associated with adolescents' and young adults' wellbeing (e.g. Cakir 2014; Sandhu et al. 2012). Thus, such an understanding could provide valuable information on how to help youth develop self- and other-oriented goals, and improve subjective wellbeing.

Youth with self-oriented goals had the lowest level of search for meaning in life compared to the other groups. Indeed, self-oriented youth had particularly low levels of both search and presence of meaning in life. This finding is consistent with Bronk and Finch's (2010) study in which the levels of search for meaning and presence of meaning were lower in the self-oriented group in comparison to the other-oriented and self-and other-oriented clusters. Purpose in life is distinguished from meaning in life by the intention to contribute to matters larger than the self (De Vogler and Ebersole 1983; Heng, Blau, Fulmer, Moran, and Pereira, 2018). Therefore, youth who are interested in other-oriented long-term aims are more likely to search for and to identify their purpose in life (Bronk and Finch 2010).

A previous study (Mariano et al. 2011) showed that perceived presence and importance of social support differentiate between adolescents with different types of purpose in life. In our study youth with other-oriented goals had lower levels of social support compared

to the other groups. A possible explanation for this could be that individuals with other-oriented goals may have a greater need for social support, and thus, may be less satisfied with the social support they have.

The final study goal was to examine the predictors of life satisfaction in an Israeli sample, including problematic digital use which is particularly relevant given the integral role that digital media plays in the everyday lives of youth in contemporary society. Findings indicated that in accordance with previous literature (e.g. Ho, Cheung, and Cheung 2010; Lightsey and Boyraz 2011; Steger, Oishi, and Kesebir 2011), even when controlling for the other study variables, the presence of meaning in life was associated with greater life satisfaction. Interestingly, the search for meaning in life was not significantly associated with life satisfaction. This is consistent with a previous study (Steger, Oishi, and Kesebir 2011), which showed that the presence of meaning in life relates to subjective wellbeing and life satisfaction, whereas the picture which emerges in relation to participants who are searching for meaning is less clear. The search for meaning in life may be a profound and positive experience for some, associated with higher life satisfaction, while for others it may be difficult and more problematic and be associated with lower levels of life satisfaction. This is consistent with Park, Park, and Peterson's (2010) finding, according to which the search for meaning was positively associated with greater life satisfaction and other well-being variables among those who already had a substantial sense of meaning in their lives.

The findings also indicated that greater support from parents and teachers was associated with greater life satisfaction. This is in line with previous research which has found an association between social support and life satisfaction (e.g. Kapikiran 2013; Kong and You 2013; Kong, Zhao, and You 2012; Malinauskas 2010), especially parental support and support from teachers (Suldo, Riley, and Shaffer 2006; Yalcin 2011). Although support from friends and classmates were also associated with life satisfaction in the bivariate analyses, these associations were weaker than the association between parental and teacher support and life satisfaction. Furthermore, in the multivariate analyses, support from friends and classmates were no longer significantly associated with life satisfaction. This is in line with previous findings that whereas parental support was found to be associated with greater life satisfaction across different cultures, the importance of peer support was found to differ between cultures (Brannan et al. 2013; Schwarz et al. 2012), with stronger associations among adolescents from cultures in which family values were emphasized strongly (including Israel; Schwarz et al. 2012).

In addition, lower life satisfaction was associated with having other-oriented life goals, even when controlling for social support. Thus, it seems that the association between other-oriented life goals and low life satisfaction cannot be explained by the lower levels of social support found to characterize this group. One possible explanation for this finding may be that having other-oriented life goals may be associated with external locus of control and the sense that one's life is not in one's own hands, which in turn has been associated with lower levels of subjective wellbeing (e.g. April, Dharani, and Peters 2012). This explanation needs further examination in future studies.

Furthermore, in correspondence with previous studies which have found problematic digital use to be associated with poor psychological outcomes (Ko et al. 2012; Weinstein and Lejoyeux 2010), including lower levels of life satisfaction (Cao et al. 2011; Celik and Odaci 2013; Cheng and Lee 2014; Huang 2010), the current study found a significant

correlation between higher levels of problematic digital use and lower levels of life satisfaction. In addition, the findings confirm that problematic digital use is significantly associated with lower levels of support from parents and close friends, which is in line with previous research showing that problematic digital use is associated with less engagement in social activities and social interactions and more relationship problems (Festl, Scharkow, and Quandt 2013; Kuss and Griffiths 2011).

Given the significant association between social functioning and problematic digital use reported in the literature and found in this study, we also examined whether social support would mediate the association between problematic digital use and life satisfaction. Indeed, Sobel tests supported the mediating role of parental support in the association between problematic digital use and low levels of life satisfaction. Namely, the findings indicate that problematic digital use is associated with lower levels of social support from parents, which are in turn associated with lower satisfaction with life. It seems that having insufficient social support from parents is a risk factor for problematic digital use. In addition, problematic digital use may lead to increased social isolation, resulting in exacerbation of existing social functioning problems and decreased communication with parents, leading to a greater decline in social support. However, it is plausible that problematic digital use is only one possible determinant of adolescents' life satisfaction and/or one possible result of social dysfunction and lack of social support, and that there are other stronger correlates.

Limitations

The study has a number of limitations which are important to take into account. First, the sample was recruited through voluntary participation in response to flyers which were distributed. This may have produced a selective sample of participants who were particularly motivated to participate in the study. This may explain why in contrast with Bronk and Finch's findings (2010), only three of the participants were categorized as having neither self- nor other-oriented future goals. However, in Bronk and Finch's study the no-orientation group was also the smallest one and consisted of six out of 144 adolescents. In addition, the participants were from schools in the center of Israel, with average to high SES (i.e. the sample did not include children from low SES backgrounds). Furthermore, this study included only one adolescent from Arabic speaking ethnic minorities. Thus, it is important to interpret the findings cautiously as the sample may not be representative of youth from other backgrounds. Since the previous study by Bronk and Finch was also conducted in a relatively homogenous sample of Caucasian youth from Midwest town in US, additional studies are needed to examine these findings in youth from more diverse backgrounds.

Implications and future directions

There are a number of important implications of the study findings, both theoretically and practically. Firstly, the study findings indicated that having a balance between self- and other-oriented life goals is associated with the highest level for life satisfaction. This raises the theoretical question of whether one's purpose of life orientation is a product of one's temperament and character (i.e. nature) or one's environment (i.e. nurture). A

related practical question which is important for future studies to examine is whether one's purpose of life orientation can be changed – namely, whether intervention can cause an individual to shift from one orientation (i.e. other-oriented) to another (self- and other-oriented), and what type of intervention is needed. For example, one might be able to achieve such a change by through teachers' and parents' providing their students/children with different types of feedback to change their orientation, trying to build their sense of purpose in life and meaning in life. This notion was addressed by Damon (2008b) in his paper, alongside examples of ways in which teachers can help students develop a sense of purpose by examining together why the school curriculum is important and how they can find personal meaning in learning and schooling. Secondly, this study provided information on the characteristics of the different purpose in life orientations in terms of life satisfaction, meaning in life, and social support. Further research through qualitative research methods is needed to dig deeper and gain a more in-depth understanding of the experiences of adolescents in each cluster. Thirdly, this study provided further evidence that purpose and meaning in life are distinct concepts, and that the search for meaning, in contrast with the presence of meaning, is not necessarily associated with life satisfaction. Finally, this study indicated that problematic digital use is associated with lower life satisfaction through reduced social support from parents. This provides direction (focusing on social functioning and social support, especially in the parent–child relationship) for interventions to improve the life satisfaction of youth involved in problematic digital use and to reduce the tendency to resort to digital use to compensate for social problems.

Disclosure statement

No potential conflict of interest was reported by the authors.

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