

Exploring the role of optimism as a protective factor for adolescent quality of life

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Abstract

This study attempts to understand the role that optimism could play in the context of a health asset approach to promote (and protect) adolescent health related quality of life (HRQOL). Two hypotheses were formulated, a) there is an association between adolescents' self-rated optimism and pessimism and their HRQOL, (b) age, gender and socio-demographic characteristics influence this association. We explore optimism and pessimism as a bi-dimensional construct and its impact on HRQOL among adolescents in two age groups (11-13 years and 14-16 years). Adolescents answered a self-report questionnaire consisting of two validated scales for measuring HRQOL and the concepts of optimism and pessimism. This study has shown that optimism is an important protective factor for HRQOL and low levels of pessimism were also seen to be protective of HRQOL in both age groups. This infers the potential of an optimistic orientation about future goals might function as a health asset during adolescence that could be useful in the planning of health promotion strategies.

Keywords: *Health related quality of life; Transition to adulthood; Adolescence; Optimism; Pessimism; Family structure*

Introduction

Improving the wellbeing of European citizens continues to be a key goal of the European Health 2020 policy (WHO, 2012). WHO (2014) reinforces the importance of wellbeing in the context of young people and argue for positive skills development to secure them a productive healthy and happy life. Morgan (2010) utilises a ‘health asset’ terminology to identify the range of skills or protective factors that can accumulate in the early years and during adolescent development to offset risks thereby maximising the chances of attaining wellbeing goals. Intuitively the concept of optimism has the potential to be a health asset as it can facilitate the achievement of wellbeing through positive thinking and a ‘hopefulness and confidence that success (wellbeing in this instance) is possible’. This paper explores optimism (and its associated concept, pessimism) in the context of a health asset approach to improving the quality of life of adolescents. In doing so, it will contribute to a knowledge base which seeks to understand the relative importance of a range of protective factors to secure positive outcomes for adolescents. It also recognises adolescence as an intense period of development when young people are developing their identity and therefore tests the stability of the concept in two age groups.

For the purposes of this paper, a health asset approach has been defined as ‘*a system which creates positive paradigms for building the capacities of young people to be active in their own development and strengthens their ability to connect to a range of networks that facilitate health and wellbeing gains for themselves and for others*’ (Morgan and Aleman-Diaz, 2016). It has two elements. The first is to understand through epidemiological research the ability of known potential health assets to explain different health related outcomes. The second is to determine whether there is sufficient evidence for particular concepts to be useful to the practice of improving health and to find ways of translating the theoretical into practical actions. This paper deals with the first of these two elements.

Adolescence as a key development stage

Adolescents’ health issues are a concern for their future health and wellbeing (Conversano et al. 2010; Patel et al. 2007). Adolescence is a transitional stage of development between childhood and adulthood. The perceived physical, social and psychological changes and the transition itself influence adolescent’s health related quality of life (HRQOL) and wellbeing (Conversano et al.2010; Eccles et al.1993; Holmbeck, et al. 1995). In general, health related problems tend to increase between preadolescence and adolescence and across gender (Rudolph 2002; Patel et al. 2007). It is also argued that health related problems in adulthood seems too originate in adolescence, particularly between the ages of 11- 18 (Kessler et al. 2005). Suggested protective factors during adolescence include psychological factors such as self-efficacy, positive coping strategies and good distress tolerance, familial factors and community factors (Johnson and Greenberg 2013; McLaughlin et al. 2016; Morgan et al. 2007).

Conceptualizing optimism as a protective factor for health related outcomes

Morgan (2014) argued for better evidence to understand the precise nature of a range of potential ‘health assets’ that are protective of health and wellbeing. Whilst he placed

salutogenesis as a concept conducive to positive health at the centre of the health asset approach, he also recognized the importance of a range of other concepts that were positively framed. In this context, (Lindstrom and Eriksson 2010) identified optimism as a concept that bears some resemblance to salutogenic theory and that could be important for promoting health and wellbeing. The concept of optimism can be defined by two theoretical models: dispositional optimism (Carver and Scheier 2002) and attributive style optimism (Gillham and Reivich 2004; Orejudo et al. 2012). In the first model, dispositional optimism is described as the predisposition to expect positive outcomes when confronting major problems and having expectations that goals will be attained (Scheier and Carver 1985). Dispositional optimism is thus a predictor of successful adaptation to stressful encounters, helping individuals to deal with problems in life rather than avoiding them and giving up (Carver and Scheier 2002). In contrast, the second model, attributive style optimism, is described as a pessimistic explanatory style where adolescents expect that they won't have the ability to control stressful events or create positive outcomes in life (Gillham and Reivich 2004). Individuals who have a pessimistic explanatory style more commonly use avoidance coping strategies (Folkman and Lazarus 1980; Rasmussen et al. 2006; Carver and Scheier 2014) and have more negative outcomes (Fibell and Hale 1978; Scheier and Carver 1985; Strunk et al. 2006).

An evidence base exists to demonstrate that high levels of optimism among adults relate to a wide range of positive wellbeing outcomes in the general population (Conversano et al. 2010; Scheier and Carver 1985) and in the context of medical illness or health crises (Carver et al. 2010; Kurtz et al. 2008). Research has shown that there is an inverse correlation between optimism and depressive symptoms and suicidal ideation among adults (Shang and Sanna 2001; Hart et al. 2008; Hirsch and Conner 2006; Van der Velden et al. 2007; Steele and Wade 2004). Optimism has also been commonly understood to be a protective factor in relation to health related outcomes, although this relationship predominantly relates to adult populations (Carver et al. 2010; Conversano et al. 2010). That said, some adolescent studies have shown positive correlations between optimism and health related outcomes (Bamford and Lagatutta 2012; Vacek, et al., 2010; Ben-Zur 2003), effective coping strategies and the adoption of good health behaviours (Jones et al. 2008) and better emotional functioning (Williams et al. 2010). As might be expected, pessimistic orientations about the future have been shown to have the opposite effect on health outcomes both in adolescents in the general population (Reppucci, et al. 1991; Strunk 2006) and in health care (Sulkers et al. 2013; Williams et al. 2010). Optimism has already been used as an outcome measure for health promotion interventions among adolescents, but with contradictory findings (Johnstone, et al. 2014; Patton, et al., 2011). These contradictions may suggest that our understanding of the protective aspects of optimism is not sufficiently well articulated for the idea to be translated into actions for practice. In part, disentangling the concept has been complicated by the inextricable link to pessimism. For example, it has been argued that high levels of optimism can lead to an underestimation of health hazards whereas high levels of pessimism can be beneficial in preparing for unpredictable outcomes (Reppucci, et al. 1991; Patton, et al. 2011). This study therefore attempts to deal with the inter-related concepts simultaneously.

Operationalisation of optimism and pessimism

A number of studies have identified issues in the operationalization of both concepts, which may have implications for measurement in health outcomes studies (Hertzberg et al. 2006; Segerstrom and Solberg 2006). Optimism and pessimism can either be measured as two different concepts (bi-dimensional) or as opposite ends of a single range or continuum (uni-dimensional) (Segerstrom and Solberg 2006). In measurement terms, different scales may

assess different dimensions of the same phenomena or completely different phenomena depending on how the instruments have been operationalised. One of the first instruments in this area is the Generalized Expectancy for Success Scale (GESS) (Fischer and Leitenberg 1986), a bi-dimensional instrument that examines generalized future expectations for personal success and failure. Another instrument is the Optimism-Pessimism Test instrument (OPTI), a uni-dimensional instrument that examines general tendency to expect positive or negative outcomes assessed through (Stipek et al. 1981). More recently, the Youth Life Orientation Test (Y-LOT) (Ey et al. 2005) was developed as a bi-dimensional construct that examines positive and negative general expectations. The GESS instrument was incorporated into a larger questionnaire for use in the present study as an objective measure of optimism and pessimism for assessing participant's future expectations. The advantage of GESS is that it focuses on future expectations for personal success and has been adopted for use as a self-report instrument among adolescents.

The current study

This study attempts to understand the role that optimism could play in the context of a health asset approach to promote (and protect) adolescent health related quality of life. We explore optimism and pessimism as a bi-dimensional construct and its impact on HRQOL among adolescents in two age groups (11-13 years and 14-16 years). The inclusion of these two age groups will help us observe differences that provide insights into issues relevant to this key transition stage in adolescence (Holmbeck, et al.,1995). Previous research has indicated age, gender and socio-demographic characteristics to have a potential impact on the relationship between optimism and health related outcomes (Biehl, Hovengen, Grøholt, Hjelmesæth, Strand, & Meyer, 2014; Hutton, Nyholm, Nygren & Svedberg, 2014; Orejudo, Puyuelo, Fernández-Turrado, & Ramos, 2012). Two hypotheses were therefore formulated. Firstly, there is an association between adolescents' self-rated optimism and pessimism and their HRQOL, and (b) age, gender and socio-demographic characteristics influence this association.

Methods

Sample

The study includes pupils from junior high schools in a medium-sized rural town in South West Sweden. The sampling frame included pupils from seven municipal schools (from a total of 34 public and 4 private schools) selected on the basis of having a total of more than 100 pupils. Fifty classes were invited to participate in the study resulting in a sample of 24 with pupils 11-13 years old (n=536 pupils, younger age group) and 25 with pupils 14-16 years old (n=576 pupils, older age group). For the purpose of this study we classified the younger age group as early adolescent and the older age group as mid-adolescent. One class (14-16 years) decided not to participate. A sample of 948 respondents (n=467 11-13 years old and n=481 14-16 years old) completed the questionnaires yielding a response rate of 87 % and 84% respectively (non-respondents were almost exclusively due to absence from school during the day of data collection). Adolescents were excluded from further analysis with missing data on age and gender (n=12) and HRQOL (n=148), a total of 788 adolescents were included in the study.

Procedure

Adolescents answered a self-report questionnaire consisting of two validated scales for measuring HRQOL and the concepts of optimism and pessimism. The Manchester Minneapolis Quality of Life instrument (MMQL) was used for the former and the Generalized Expectancy for Success Scale (GESS) for the latter. The adolescents were also asked to answer questions in relation to their socio-demographic characteristics (age, gender, parents marital status and family country background). The principal at each school approved participation in the study. Prior to data collection, each school distributed written information to children and their parents about the purpose of the research, indicating that participation was voluntary. Questionnaires were distributed to each class following a brief introduction by the researchers. Participants were also given the possibility to ask questions about the study or specific questions during completion of the questionnaire. Completed questionnaires were returned to the researchers by each respondent. However in two schools, teachers distributed and collected the questionnaires in return envelopes from each class.

Measures

Health related quality of life (HRQOL)

The MMQL instrument exists in two forms which take account of the characteristics of two age groups, the MMQL-Youth form for 8-12 year olds and the MMQL-Adolescent form for 13-20 year olds (Bahitia et al., 2004; Einberg, Kadrija, Brunt, Nygren, & Svedberg, 2013). The MMQL-Youth form consists of four quality of life subscales; physical symptoms, physical functioning, psychological functioning and outlook on life comprising 32 items in total. The MMQL-Adolescent Form consists of seven quality of life subscales; physical functioning, cognitive functioning, psychological functioning, body image, social functioning, intimate relations and outlook on life with a total of 45 items. The items in the subscales of both forms were answered on a 4 or 5 point scale, with higher scores indicating better outcomes. Both versions of the instrument have good psychometric characteristics and are available in versions translated and validated in a Swedish context with good face and content validity, internal consistency and stability (Einberg, et al., 2013). The score for each individual item is based on the number of points in the scale; “Never” = 5; “Seldom” = 4, “Sometimes” = 3, “Mostly” = 2 and “Always” = 1. All items were summarized into a total score for the different age-groups. HRQOL was used both as a continuous variable and as a categorical variable. Categorized according to the mean, were below mean was categorized as “0” and above mean as “1”.

Optimism and Pessimism

An age adapted version of the original GESS (Fibel & Hale, 1976) was used to assess optimism and pessimism relevant to the study population (Fischer & Leitenberg, 1986). The adaptation of GESS included re-phrasing of some questions and changes to the response options (from Likert scale to more simplistic true or false responses. Fischer & Leitenberg, (1986) argue that this does not diminish the validity of the instrument. The age-adapted version includes 27 statements constructed with the same opening phrase; “In the future I

expect that I will...“. Sixteen items were phrased in the direction of success (optimism scale) and 11 items phrased in the direction of failure (pessimism scale). It could be argued that there is an overlap between these two dimensions and the Outlook of life subscale in the MMQL scale, however assessment via Spearman correlation showed this not to be the case (Table 1).

Table 1. Correlation between optimism and pessimism and HRQOL

	Optimism	Pessimism
<i>Early adolescence</i>		
Outlook of life	0.097	-0.095
<i>Mid-adolescence</i>		
Outlook of life	0.235	-0.230

All correlation coefficients are significant - spearman

The optimism scale was scored using a range of 0-16 points, higher numbers indicating a higher level of optimism. The Cronbach's α for optimism was 0.701 in the early adolescent group and 0.817 in the mid-adolescent group. The pessimism scale was scored with a range of 0-11 points, higher numbers indicating higher level of pessimism. The Cronbach's α for pessimism was 0.638 in the early adolescent group and 0.689 in the mid-adolescent group. Optimism scores and pessimism scores were used as categorical variables.

Socio-demographic characteristics

Socio-demographic characteristics of participants were assessed early on in the questionnaire. Data relating to parental status were obtained from an initial section on socio-demographic characteristics. Adolescents were asked to answer questions on age, gender, parent's marital status and family country background. Gender was measured by the question "Are you a boy or a girl?" and the answer was coded girls (=1) and boys (=2). Parents' marital status was measured by the question "Are your parents divorced?" The answers were coded as 1 (=yes) and 0 (=no). Family country background was measured by the question "Was your father born in Sweden?" and "Was your mother born in Sweden?". The answers were added together and then coded as both parents born in Sweden (=0) and one or two parents born outside Sweden (=1).

Analytical strategy

The statistical analyses were carried out using SPSS statistics version 20.0 (IBM, New York, USA). The two age groups were examined separately and statistical significance was assumed at $p < 0.05$. Median (range) and mean (Standard Deviation) was used for descriptive purpose. Chi-square and independent student t-tests were conducted to compare MMQL, optimism, pessimism, parent's marital status and family country background between age groups. Age groups were analyzed separately, i.e., the reference point (mean) was specific for each age group. Significance was assumed at $p < 0.05$. Adolescent's school affiliation was adjusted for by including dummy variables for each school in the regression model. Multivariate logistic regression models were used to estimate the associations between self-rated MMQL, optimism and pessimism. Scores of MMQL were dichotomized into above mean represent better self-rated MMQL and scores below mean represent worse self-rated MMQL. In the

regression models optimism scores and pessimism scores were categorized according to quartile into three groups: low (q1), moderate (q2) and high (q3). Results were reported as an odds ratio (OR) with 95% confidence intervals (95% CI). Two multivariate models were then used. The first model included gender as a covariate and the second model gender, parent's country background and marital status.

Ethical clearance

To ensure anonymity, no name or birth dates were required. The participants were guaranteed anonymity, were informed that participation was voluntary and told that they did not need to fill in the questionnaire if they did not want to or if their parents objected. Permission for the study was obtained from the regional ethics committee in Lund (Dnr 2017/20).

Results

The mean HRQOL was significantly lower ($p < 0.001$) in the older age group (mean 3.87; SD: 0.39), compared with adolescents in the early adolescent group (mean 4.35; SD: 0.37) (Table 2).

Table 2. HRQOL scores in both age groups.

	Early adolescence		Mid-adolescence		P ^a
	mean	(SD)	mean	(SD)	
HRQOL total score	4.35	0.37	3.87	0.39	<0.001
<i>The different dimensions of HRQOL</i>					
Physical function	4.21	0.59	3.88	0.58	<0.001
Psychological function	4.09	0.54	3.96	0.58	0.002
Outlook of life	4.49	0.52	4.10	0.82	<0.001
Physical symptoms	4.52	0.32	b		
Body image	b		3.97	0.70	
Social function	b		4.29	0.66	
Intimate relations	b		4.12	0.74	
Cognitive function	b		3.27	0.25	

^a Based on t-test, b Missing data due to differences in different age versions of MMQL.

Adolescents in both age groups were fairly optimistic, with high optimism score and low pessimism score (Table 3).

Table 3. Sample Characteristics.

	Early adolescence		Mid-adolescence		P ^a
	median	range	median	range	
GESS					
Optimism	15	(1-16)	14	(1-16)	0.001
Pessimism	1	(0-11)	1	(0-11)	0.004
	n	(%)	n	(%)	P^b
Gender					
Boys	194	(49.4)	211	(53.4)	0.255
Girls	199	(50.6)	184	(46.6)	
Parents' marital status					
<i>Divorced parents</i>					
No	268	(69.4)	262	(67.7)	0.604
Yes	137	(30.6)	125	(32.3)	
Family country background					
<i>One or two parents born outside Sweden</i>					
No	246	(64.2)	245	(63.5)	0.827
Yes	137	(35.8)	141	(36.5)	

^a Based on Mann Witney, ^b Based on X² test

In the early adolescent group, the HRQOL did not vary with the optimism scores (Figure 1), however, the prevalence of high HRQOL scores decreased with increased pessimism scores (Figure 2). The association between moderate level of optimism and higher self-rated HRQOL was significant (OR=1.68 95%CI 1.03:2.74; P=0.039) compared to low levels of optimism.

Figure1. The prevalence (%) of HRQOL above mean stratified by levels of optimism (low, moderate and high).

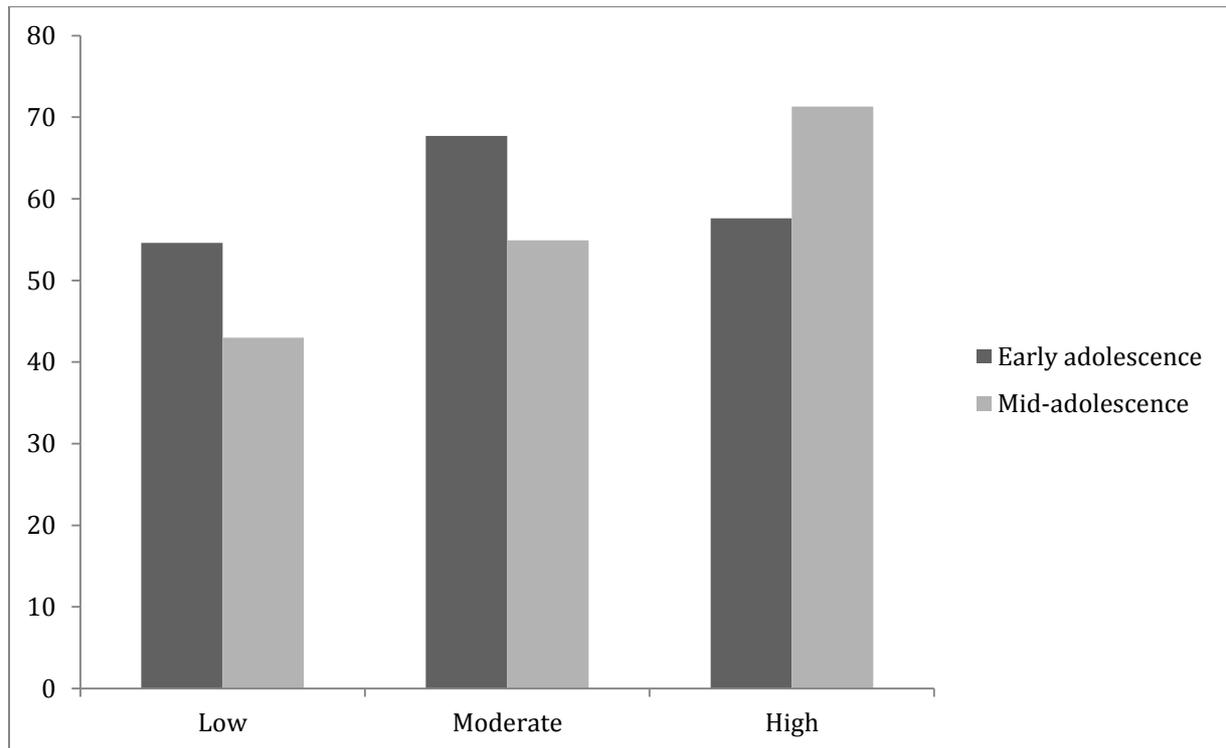
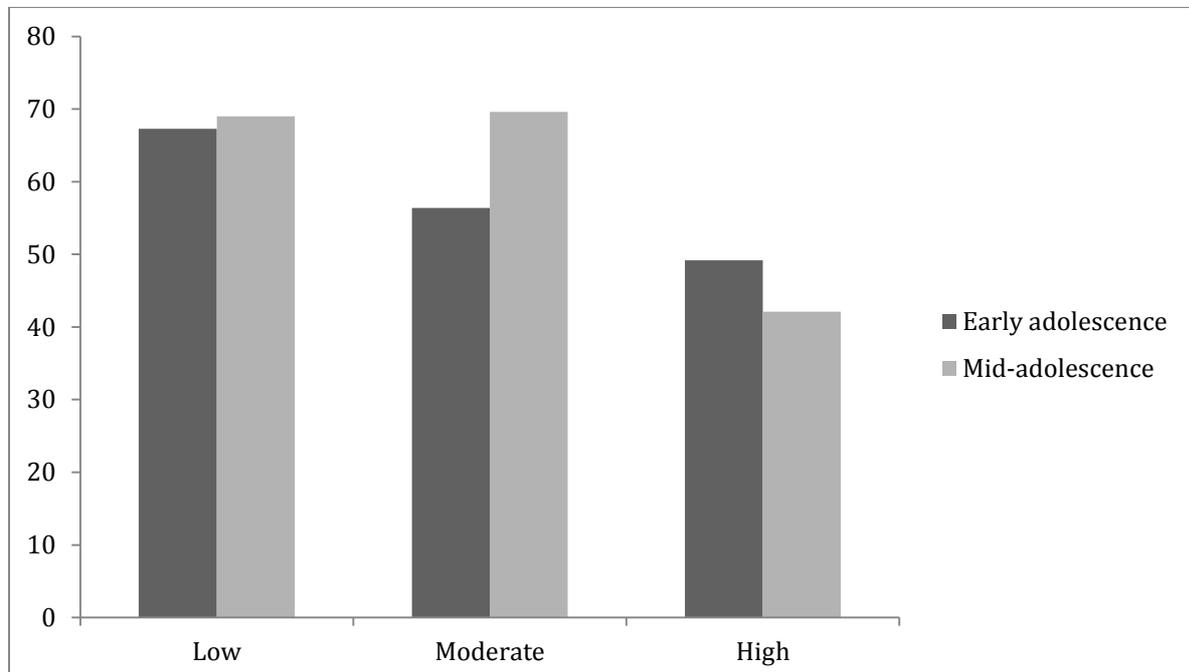


Figure 2. The prevalence (%) of HRQOL above mean stratified by levels of pessimism (low, moderate and high).



This association was stable after adjusting for gender, divorced parents and family country background (Table 4). Only low levels of pessimism showed a significant positive relation with higher self-rated HRQOL compared to high levels of pessimism (OR= 2.14, 95% CI;

1.03; 2.86; $P < 0.001$) and when adjusting for gender the odds ratio increased $OR = 2.49$ (95% CI; 1.03; 2.86; $P < 0.001$). These results were not affected by further multivariate adjustment (Table 4).

Table 4. The odds ratio for low HRQOL in different levels of optimism and pessimism (low, moderate and high) in the two age groups.

	Early adolescence			Mid-adolescence		
	OR	95% CI	P	OR	95% CI	P
Levels of OPTIMISM						
<i>Crude</i>						
Low	1.0	-		1.0	-	
Moderate	1.68	(1.03;2.74)	0.039	1.57	(0.86;2.85)	0.143
High	1.09	(0.51;2.36)	0.823	3.31	(1.86;5.89)	<0.001
<i>Adjusted for gender</i>						
Low	1.0	-		1.0	-	
Moderate	1.71	(1.04;2.82)	0.034	1.87	(0.99;3.50)	0.051
High	1.11	(0.51;2.44)	0.798	3.80	(2.09;6.94)	<0.001
<i>Adjusted for gender, family country background and divorced parents</i>						
Low	1.0	-		1.0	-	
Moderate	1.71	(1.03;2.86)	0.040	1.71	(0.93;3.41)	0.082
High	1.07	(0.49;2.37)	0.860	3.79	(2.03;7.06)	<0.001
Levels of PESSIMISM						
<i>Crude</i>						
Low	2.14	(1.03;2.86)	0.005	3.07	(1.74;5.44)	<0.001
Moderate	1.28	(0.74;2.21)	0.382	3.36	(1.81;6.23)	<0.001
High	1.0	-		1.0	-	
<i>Adjusted for gender</i>						
Low	2.49	(1.03;2.86)	<0.001	3.63	(1.97;6.70)	<0.001
Moderate	1.37	(0.78;2.39)	0.272	3.51	(1.84;6.70)	<0.001
High	1.0	-		1.0	-	
<i>Adjusted for gender, family country background and divorced parents</i>						
Low	2.32	(1.32;4.10)	<0.001	3.15	(1.70;5.83)	<0.001
Moderate	1.35	(0.77;2.39)	0.298	3.27	(1.68; 6.36)	<0.001
High	1.0	-		1.0	-	

In the mid-adolescent group, self-rated HRQOL increased with higher levels of optimism (Figure 1) and the opposite was true with lower levels of pessimism (Figure 2).

The association between high levels of optimism and higher self-rated HRQOL was significant (OR=3.31, 95%CI 1.86:5.89; P=<0.001) compared to low levels of optimism. The relationship became stronger after adjusting for gender. The positive association between optimism and higher self-rated HRQOL increased both at the moderate level (OR=1.87, 95%CI 0.99:3.50; P=0.051) and at the high level OR=3.31, 95%CI 2.09:6.94; P=<0.001). However, adjusting for divorced parents and family country background resulted in the association becoming less strong (OR=1.71, 95%CI 0.93:3.41; P=0.082), although remained robust in the high level of optimism (Table 4). Low and moderate levels of pessimism showed a significant positive association between higher self-rated HRQOL and high levels of pessimism (OR= 3.36, 95% CI; 1.81; 6.23; P=<0.001). This association decreased at the low level of pessimism (OR= 3.07, 95% CI; 1.74; 5.44; P=<0.001) (Table 4). When adjusting for gender the odds ratio increased at the moderate level (OR= 3.51, 95% CI; 1.84; 6.70; P=<0.001) and at the low level (OR= 3.63, 95% CI; 1.97; 6.70; P=<0.001) of pessimism. These associations remained significant in the second multi-variate model adjusting for gender, family country background and parent's marital status, moderate level (OR= 3.27, 95% CI; 1.68; 5.83; P=<0.001) and in low level (OR= 3.15, 95% CI; 1.70; 5.83; P=<0.001) of pessimism (Table 4).

Discussion

This study provides evidence that optimism is protective of HRQOL during adolescence. Specifically, those reporting high levels of optimism were less likely to report low HRQOL compared to those in the lowest level of optimism category. This was the case in both adolescent groups. The relationship between optimism as a protective factor for low HRQOL remained robust (in both groups) even after controlling for gender, divorced parents and family background. In contrast, very high levels of pessimism were a risk factor for rating low HRQOL and the relationship was similarly robust after taking confounding factors into account. The noted relationship however was found only in the early adolescent group.

Transition

The findings from our study suggest a significant decrease in HRQOL with age, which is in line with other research (Meade & Dowswell. 2016; Michel Bisegger, Fuhr & Abel, 2009). Previous research has also shown that children in early adolescence are generally more optimistic than pessimistic about their long-term future (Fischer & Leitenberg, 1986). The changes seen in optimism and pessimism are interesting from a transitional and developmental perspective. There are multiple challenging transitions during the period of adolescence, for example onset of puberty and change of schools. From a developmental perspective we know that from the age of seven, children generally have a capability to use a range of coping strategies to deal with negative emotions (Bamford & Lagattuta, 2012; Holmbeck et al., 1995). Patton et al. (2011) found that optimism generally decreases with age (12-14 years compared to two years later) and this was particularly pronounced among girls. However, interestingly a study of pre-university students (mean age of 18.2 years) found that by this age expectancy for success in the future had increased (Yong 2010). A possible explanation for the findings in our research and in other studies might be that those at the stage of early adolescence may not have been exposed to life expectations, perceived life chances and attaining goals and are therefore more likely to be optimistic. In contrast, those at the stage of mid-adolescence are more likely to be less optimistic about the future because of

various transitions and accumulated stressful life events. However, as already stated it seems that as adolescents progress through this development period, they eventually re-gain a sense of optimism (Young 2010). This resurgence of optimism could be the result of cumulative exposure to significant positive life experiences and the acquirement of good experiences of coping with new life events. These changes in levels of optimism across the adolescent development years highlight the need for more clarity about the definition of optimism, if it is to be of use for practical purpose. For example, Carver (2014) suggests that dispositional optimism is a personality trait that is relatively stable, however he does concede that changing a person's outlook on life can be done but it is not a simple matter.

Our results showed that high optimism score among adolescents in both age groups had a protective effect on low self-rated HRQOL. In addition, high levels of pessimism seem to be a risk factor for rating low HRQOL in the younger age group. Adolescents' opportunities of acquiring good experience of coping with new life events can be expected to play an important role in their development of an optimistic outlook about their personal future (Carver et al. 2010; Wrosch and Scheier 2003). Effective coping strategies among adolescents involve a capability of adjusting one's goals to certain demands. Individuals with higher levels of optimism have displayed greater flexibility in coping and goal pursuit (Carver et al. 2010; Wrosch and Scheier 2003), which are characteristics that protect people from negative consequences and promote quality of life (Hanssen et al. 2014). In other words, being able to switch flexibly between different coping strategies might be a capacity, facilitated by an optimistic orientation, that separates, distinguishes and influences the HRQOL of adolescents. We need to further investigate which factors can predict and contribute to adolescents' optimistic orientation as well as the causal direction in order to determine whether optimism or pessimism preceded HRQOL or if HRQOL preceded optimism or pessimism.

Gender and family characteristics

Results from this study showed that high levels of optimism have a protective effect on HRQOL, and this relationship remained after for adjusting for gender, divorced parents and family country background. Other research (Patton et al 2011) has confirmed that an optimistic approach had a protective effect on emotional problems and health risks for both genders. That said, some research indicates that gender differences exist (Orejudo et al 2012, Deptula, Cohen & Phillipson 2006) and therefore the role of gender and optimism at different ages should be further investigated to increase the understanding of the factors that contribute to the development of optimism among both boys and girls. Our findings did not show that divorced parents and family country background have an impact on the relationship between optimism and pessimism and HRQOL. Little research has been carried out into the relationship between optimistic orientation and parental socioeconomic status, although it has been proposed that optimism can act as a buffer for negative health outcomes associated with poor socioeconomic status (Adler 2007; Carver et al. 2010; Finkelstein et al. 2007; Piko et al. 2012). Such a relationship might be explained by the adolescents' family environment. For example, an adolescents' capability of positive thinking may depend more on: levels of parental optimism (Bamford and Lagatutta 2012), parents' ability to deliver an optimistic approach to their children (Bamford and Lagatutta 2012; Orejudo et al. 2012) and a good relationship and communication with parents (Ben-Zur 2003; Korkeila et al. 2004; Orejudo et al. 2012). That is an adolescents general social environment may be at least as important than the actual socioeconomic status of the family.

Limitations and strengths

The strength of this study was the high response rate in both age groups of adolescents. The instruments used are internationally established, validated and commonly used measures of optimism and pessimism and HRQOL and therefore represent strength. The versions of both the GESS instrument and HRQOL used were adapted for children. However, the versions forced respondents to answer in a dichotomous way (forced). This forced choice might be a limitation and might have contributed to small variations in ratings of optimism and pessimism and influence the statistical analysis. Therefore information about the neutral point impact (i.e. neither being optimistic nor pessimistic) on HRQOL cannot be explored. The cross-sectional design only allowed us to make comparisons between different variables at a single point of time. This could be a limitation, as it does not provide information about the causal relationship of the dependent and independent variables.

Future Direction

This study has demonstrated that the concept of optimism has the potential to be a health asset given the positive associations found between it and HRQOL. However in order to put it to practical use in policy and practice, further work is required to further understand how best to define and measure it. This will provide more clarity on how to gain more evidence about how optimism can link and explain a range of antecedents along the pathway to health and wellbeing. The health asset approach places emphasis on the building of theory in order to advance this understanding as it is argued that theory based programs are more likely to be effective (Garcia-Moya and Morgan, 2016). In order to be useful to the asset approach such theories need to be positively framed. It has already been suggested that the concept of optimism has this potential (Erikson and Lindstrom). However, further work is required to move optimism from a concept with potential to a theoretically based framework for action. There are a number of specific areas to explore that in the first instance are best suited to review level research. Such work would: explore the theoretical underpinnings of optimism and the implications for its definition and measurement; synthesize the current knowledge about the links between optimism and a range of health related outcomes; and identify the types of environmental factors that can encourage adolescences to be optimistic about the future. This would support the advancement of optimism as an explanatory theory for improving health and wellbeing. Until this work is completed, we argue that the field of optimism research is insufficiently developed for utilization in intervention studies and its translation into policy and practice. However the framework of a health asset approach provides a systematic means of developing it further.

Conclusions

This study has shown that optimism is an important protective factor for HRQOL. This protective effect is important in both early and mid-adolescence. Additionally, low levels of pessimism were also seen to be protective of HRQOL. These findings held true across gender and socio demographic factors. This infers the potential of an optimistic orientation about future goals might function as a health asset during adolescence that could be useful in the planning of health promotion strategies. However, further work is required to articulate optimism as a concept with practical implication.

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