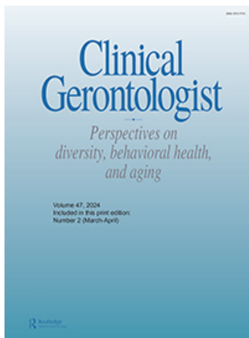

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Trends in Positive Life Orientation Among 70-Year-Olds: A Comparison of Two Finnish Cohorts Born 20 Years Apart

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ABSTRACT

Objectives: We assessed if positive life orientation (PLO) has increased among older individuals and explored gender disparities in PLO changes.
Methods: Two cohorts of 70-year-olds from Turku, Finland were included: the 1920 birth cohort (examined in 1991; $n = 1{,}032$) and the 1940 birth cohort (examined in 2011; $n = 956$). Participants completed an identical questionnaire assessing life satisfaction, feeling needed, future plans, zest for life, depression, and loneliness. A composite PLO score (range 0–1) was computed.
Results: The 2011 cohort had a higher mean PLO score than the 1991 cohort (.87 vs. .83, $p < .001$). The 2011 cohort reported higher sense of being needed, more future plans, and reduced loneliness (all $p < .001$). No significant differences were found in life satisfaction, zest for life, or depression. Gender disparities in PLO persisted across both cohorts, with men scoring slightly higher but following similar trends as women.
Discussion: PLO appears to have increased among older individuals.
Clinical Implications: Recognizing the rising trend of PLO in recent decades may influence the development of societal and healthcare policies to further improve overall well-being among older individuals.

KEYWORDS
Aging; depression; life satisfaction; loneliness; older individuals; positive life orientation

Introduction

The prevalence of multimorbidity increases substantially with age (Barnett et al., 2012), and numerous chronic illnesses are linked to reductions in various measures of life quality (Stewart et al., 1989). However, counterintuitively vis-à-vis those trends, self-rated health comparisons across age groups often reveal fewer or smaller differences than expected based on illness prevalence rates (Idler, 1993). Furthermore, Lawton et al. reported in their seminal paper that health is not the sole factor influencing valuation of life (VOL), which has a relationship with years of desired life independent of positive mental health, demographic characteristics, health, quality of life, and depression. One's active engagement with life seems to be a deeply personal characteristic, influenced by various dimensions of life quality, and ultimately shaped by individual cognitive and emotional processes (Lawton et al., 2001).

Different scales to measure active embrace of life, such as valuation of life (VOL) and positive life orientation (PLO), have been a focus of interest in geriatric research during the past decades (Eloranta et al., 2015; Fagerström, 2010; Lawton et al., 2001; Pitkala et al., 2004; Tilvis et al., 2012). PLO is a multifaceted concept characterized by a predisposition to focus attention on the positive and to construe reality accordingly (Kozma et al., 2000; Peterson, 2000). Previous studies have assessed PLO using various indicators, such as levels of life satisfaction, a sense of purpose, having plans for future, enthusiasm for life, experiences of depression, and feelings of loneliness (Fagerström, 2010; Pitkala et al., 2004; Tilvis et al., 2012). PLO seems to be associated with both physical and psychological well-being, as well as with better health outcomes among older individuals in terms of mortality and rates of institutionalization (Eloranta et al., 2015; Pitkala et al., 2004). At least one study

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has detected a decline in PLO as age advances (Eloranta et al., 2012). However, data on this topic are scarce, and gender disparities may also exist. Previous literature suggests that older women seem to be less happy and have lower PLO than older men, although some findings suggest that older women might feel less depressed and perceive themselves as more needed in their community than men (Fagerström, 2010; Penninx et al., 1999; Pinquart & Sörensen, 2001; Tilvis et al., 2012).

The life expectancy in Nordic countries has steadily increased over the past few decades (Knudsen et al., 2019). Moreover, older individuals today exhibit improved physical and cognitive functioning and experience less depression compared to their counterparts from a couple of decades ago (Kekäläinen et al., 2023; Koivunen et al., 2021; Munukka et al., 2021). However, due to the intricate individual orchestration of PLO, the potential changes in PLO over the past decades remain enigmatic. We aimed to investigate secular shifts in PLO in older individuals by comparing self-reported PLO measures between two cohorts of community-dwelling 70-year-old persons from the same geographical area, born 20 years apart. Additionally, we sought to explore possible gender disparities in PLO.

Methods

Study population

The study sample comprised individuals from two distinct birth cohorts: those born in 1920 and those born in 1940, residing in the region of Turku, located in South-Western Finland (Figure 1). The initial assessment of the first cohort study, known as the Turku Elderly Study (TUVA), involved 1,032 community-dwelling participants aged 70–71 and was conducted between 1991 and 1992. The second

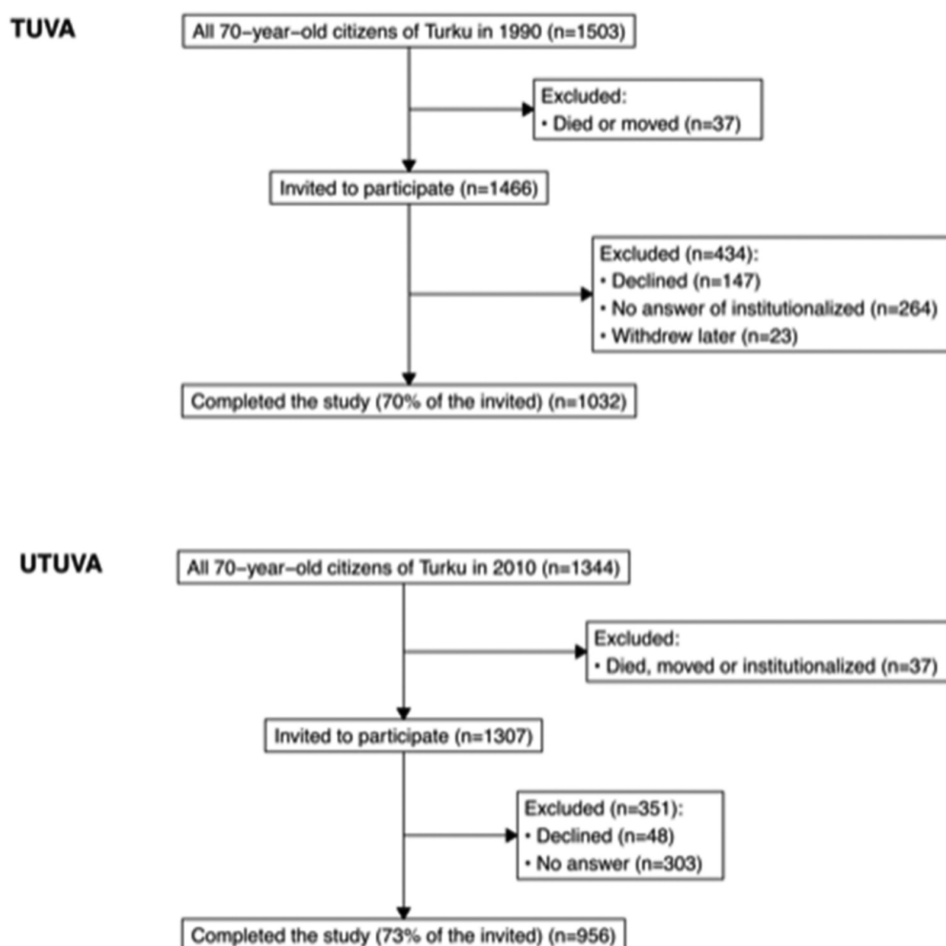

Figure 1. Flow chart of the formation of the study cohorts.

cohort consisted of 956 individuals of similar age who took part in the subsequent New Turku Elderly Study (UTUVA), conducted 20 years later. Both cohorts underwent a similar examination protocol, which has been described in detail in prior publications (Upmeier et al., 2009, 2016).

Study ethics

The study protocol was approved by the City of Turku ethical committee on health care and the ethical committee of the Hospital district of Southwest Finland. Written consent was obtained from all participants. The study conforms to the Declaration of Helsinki as revised in 2013.

Measurement of PLO

The questionnaire was designed to assessed various aspects of PLO, including life satisfaction (yes/no), feeling needed (yes/no), having plans for the future (yes/no), having zest for life (yes/no), feeling depressed (seldom or never/sometimes/often or always), and suffering from loneliness (seldom or never/sometimes/often or always). Each of these aspects was individually assessed. Additionally, a mean composite PLO score (range 0-1) was computed by assigning points based on the responses: 0 points for "no" and "often or always," .5 points for "sometimes," and 1 point for "yes" and "seldom or never. Consequently, a higher score indicated a higher level of PLO, while a lower score indicated a lower level of PLO. A similar composite score calculation method has been used in prior studies on PLO within the TUVA cohort (Eloranta et al., 2012; Pitkala et al., 2004; Tilvis et al., 2012).

Statistical analyses

Statistical analyses were performed with the IBM SPSS Statistics software (version 27.0; SPSS, Inc., Armonk, NY, USA) and R (version 4..5; R Core Team, Vienna, Austria). The chi-square test was used to compare categorical variables and the Mann-Whitney U test was utilized to analyze the non-normally distributed composite PLO score, as well as the ordinal depression and loneliness variables between the birth cohorts and between genders. In addition, we conducted exploratory multivariable analyses to assess the independent association between the two cohorts and the composite PLO score using a linear regression model, adjusting for marital status, living alone, gender, and educational attainment (secondary school or more vs. less than secondary school). Participants with missing data were excluded from the analyses for calculating the proportions of each characteristic separately. The percentage of missing answers in the PLO factors ranged from 1.6% to 2.9% in the TUVA questionnaire and from .2% to .8% in the UTUVA questionnaire.

Results

Of the 1920 (examined in 1991) and 1940 (examined in 2011) birth cohorts, 1,032 and 956 participants completed the questionnaire and underwent baseline examination, respectively. Participants born in 1920 were more often female, lived more often alone and had lower educational attainment when compared to the participants born in 1940 (Table 1).

The composite PLO score was higher and exhibited less variability in the 1940 cohort than in the 1920 cohort, and these trends were consistent in both men and women (Figure 2 and Table 2). In both birth cohorts, the composite PLO score was greater in men than in women (p-values <.001 in both cohorts). In the multivariate analysis, the 1940 birth cohort was independently associated with a .03 higher composite PLO score (p-value <.001). Similarly, higher education was associated with a .03 higher composite PLO score (p-value <.001), whereas living alone was associated with a .07 lower score (p-value <.001). Marital status and sex were not associated with the composite PLO score in the

Table 1. Characteristics of the study cohorts.

	1920 cohort $n = 1{,}032$	1940 cohort $n = 956$	p-value
Women	662 (64)	568 (59)	0.03
Education, secondary school or more	191 (19)	458 (45)	<.001
Living alone	430 (42)	336 (35)	<.001
Married	541 (52)	613 (64)	<.001

Values depict number of cases (%). P-values indicate the statistical significance of the observed differences between the cohorts. Missing values were excluded when counting the proportions.

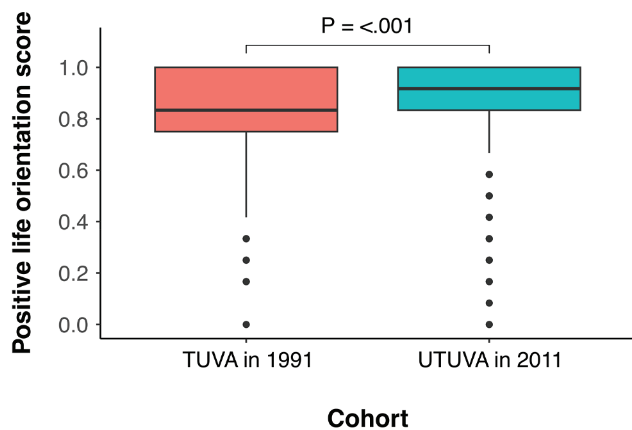

Figure 2. Composite positive life orientation score at the age of 70 in the study cohorts.

Table 2. The composite positive life orientation score in the study cohorts.

	1920 cohort	1940 cohort	p-value
Overall	0.83 (0.19)	0.87 (0.17)	<0.001
Men	0.85 (0.18)	0.89 (0.17)	<0.001
Women	0.82 (0.19)	0.86 (0.17)	<0.001

Values depict means (standard deviations). P-values indicate the statistical significance of the observed differences between the cohorts.

Table 3. The responses to the positive life orientation questionnaire items in the study cohorts.

	1920 cohort	1940 cohort	p-value
Life satisfaction (yes)			
Overall	94.4%	95.0%	0.50
Men	93.6%	94.0%	0.83
Women	94.8%	95.7%	0.42
Zest for life (yes)			
Overall	96.0%	96.5%	0.57
Men	96.4%	96.6%	0.87
Women	95.8%	96.5%	0.57
Feeling of being needed (yes)			
Overall	84.4%	91.5%	<0.001
Men	87.2%	91.2%	0.08
Women	82.8%	91.7%	<0.001
Future plans (yes)			
Overall	52.4%	66.4%	<0.001
Men	56.1%	70.3%	<0.001
Women	50.3%	63.7%	<0.001
Feeling depressed (seldom or never)			
Overall	67.3%	68.3%	0.84
Men	72.8%	76.5%	0.45
Women	64.3%	62.7%	0.85
Suffering from loneliness (seldom or never)			
Overall	73.8%	81.7%	<0.001
Men	81.8%	87.9%	0.06
Women	69.3%	77.5%	0.01

Values depict proportions of participants with the response in question to each item. P-values indicate the statistical significance of the observed differences between the cohorts. Missing values were excluded when counting the proportions for each variable.

adjusted regression model (p-values .99 and .30, respectively).

When analyzing the PLO variables individually, life satisfaction and zest for life were similar between the 1920 and 1940 cohorts, and also no differences were seen when genders were examined separately (Table 3). Furthermore, there were no significant disparities in life satisfaction and zest for life between men and women within the 1920 and 1940 cohorts (p-values: life satisfaction .46 and .23; zest for life .65 and .89, respectively).

On the other hand, the participants in the 1940 cohort felt more often needed and had more plans for the future compared to the 1920 cohort. These trends were similar between men and women, although the change in the feeling of being needed did not reach statistical significance among men (Table 3). No gender disparities in the feeling of being needed were observed within the 1920 and 1940 cohorts (p-values .07 and .78, respectively). However, men had more plans for the future compared to women in the 1940 birth cohort (p-values for gender difference: in the 1920 cohort .08 and in the 1940 cohort .03).

There was no difference in the feeling of depression between the birth cohorts, but those born in 1940 felt less lonely than those born in 1920 (Table 3). Men felt less often depressed and lonely than women in both the 1920 and 1940 birth cohorts (p-values for gender difference: depression .02 and $< .001$; loneliness $< .001$ and $< .001$, respectively).

Discussion

The present study examined the trends in PLO among two Finnish cohorts born 20 years apart, both aged 70 at the time of examination in 1991 and 2011. The findings shed light on the secular development in PLO and the gender disparities associated with it.

Overall, there was an improvement in PLO over time, as indicated by the increase in the composite PLO score from the 1920 to the 1940 birth cohort. Interestingly, participants in the 1940 cohort reported a greater sense of being needed and having more plans for the future, along with feeling less lonely compared to those in the 1920 cohort. However, there were no significant differences in life satisfaction, zest for life, or feelings of depression between the two cohorts.

It is noteworthy that previous data on trends of overall PLO among older individuals are lacking. However, reports suggest an increasing trend in overall life satisfaction in Europe. In Finland, there was a temporary drop in overall life satisfaction during the 1990s, which later reversed and reached the levels observed in the early 1990s by 2005 (Förster et al., 2019; Ortiz-Ospina & Roser, 2013). In line with this, we did not observe a specific increase in the life satisfaction variable between the 1991 and 2011 time points among older individuals. Nonetheless, there seems to have been an overall increase in PLO, aligning with broader trends in Europe during the same time period. Furthermore, our findings are consistent with previous reports suggesting that older adults today have better mental well-being than individuals of the same age evaluated two to three decades ago (Gerstorf et al., 2015; Henning et al., 2022; Kekäläinen et al., 2023; Öhman et al., 2022).

Previous gender-specific data on PLO trends among older individuals are also limited. In our study, although men had slightly higher PLO scores at both time points, the increase in the scores was similar for both men and women. Moreover, the gender patterns in the trends of specific PLO factors remained comparable between men and women, indicating a consistent evolution of PLO across genders within the two birth cohorts. It is worth noting that women reported a significantly higher prevalence of depressive feelings and loneliness compared to men in both the 1991 and 2011 evaluations. This gender disparity aligns with previous reports indicating higher levels of depressive symptoms among older women (Girgus et al., 2017; Kekäläinen et al., 2023).

The observed improvements in PLO measures among the 1940 cohort are likely multifactorial. Distinguishing between birth cohort and period effects is complex, as several societal changes may have produced simultaneous impacts on all age groups (period effects) and specific impacts on particular age cohorts (cohort effects) (Bell, 2020). Advancements in overall health, increased social support, the development of living conditions, and changing societal attitudes toward aging have most likely contributed to the positive changes in PLO. Additionally, it appears that higher educational attainment and living more frequently with others contribute to the increasing PLO between the cohorts. World War II has undoubtedly impacted the formation of PLO among both study cohorts, as the earlier 1920 cohort directly participated in the war, while the latter cohort experienced their childhood during the war and the subsequent postwar reconstruction period. Improvements in physical health between the cohorts could partly explain why the participants in the 1940 birth cohort were more likely to feel needed and have future plans than the 1920 cohort. Conversely, the economic crisis in Finland during the 1990s might account for the lack of improvement in life satisfaction, zest for life, and feelings of depression between the cohorts. Of note, the disparities in the PLO score were smaller among the 1940 cohort than among the 1920 cohort. This could be attributed to the various social reforms implemented in Finland during the latter part of the 20th century, aimed at enhancing and ensuring equity in material and living conditions. More research is needed to better understand the underlying reasons for these trends and to explore the specific factors influencing PLO among older individuals.

A particular strength of this study is the consistent assessment of self-reported PLO measures over a 20-year period among older individuals. The comprehensive use of PLO indicators also contributes valuable insights into the factors influencing well-being of older individuals. Previous studies have shown that the PLO items used in the current study have good prognostic value, are easily comprehensible and answerable for older individuals, and exhibit excellent test-retest reliability (Pitkala et al., 2001, 2004; Tilvis et al., 2000). Additionally, our study comprised two homogeneous birth cohorts of older Finnish individuals residing in the same geographic area, thereby enhancing the validity of the comparative analysis. However, it is important to acknowledge the limitations of this study. Firstly, due to the sensitive nature of the questionnaire items, the use of self-reported measures may be subject to response bias, even though the questionnaires were identical in both 1991 and 2011. However, this shortcoming is inherent in studies investigating subjective psychological well-being. Second, the findings are specific to two birth cohorts in a particular geographical area, possibly limiting the generalizability of the findings. Thirdly, it's possible that the PLO among

individuals who did not participate in the study differed from that of the participants. Therefore, selection bias may be present in the formation of the study cohorts (Terry et al., 2009), even though the response rates were comparably high in the present study (70% in TUVA and 73% in UTUVA). Finally, given the multifaceted nature of PLO and the limited available data on potentially influencing factors, residual confounding is undoubtedly present in the results of the multivariable analyses.

In conclusion, this study provides valuable insights into the secular development of PLO and the gender disparities associated with it among older individuals. The findings highlight the overall improvement in PLO over time, particularly in terms of feeling needed and less lonely as well as having more plans for the future. The PLO trends appear to be similar among men and women.

Clinical implications

- PLO appears to have increased among older individuals.
- Recognizing the rising trend of PLO in recent decades may influence the development of societal and healthcare policies to further improve overall well-being among older individuals.

Disclosure statement

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

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Data availability statement

The participants of this study did not give written consent for their data to be shared publicly, so due to the sensitive nature of the research supporting data is not available.

Study ethics

The study protocol was approved by the City of Turku ethical committee on health care and the ethical committee of the Hospital district of Southwest Finland (approval number: ETMK: 2/180/2010). Written consent was obtained from all participants. The study conforms to the Declaration of Helsinki as revised in 2013.

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