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Composite Indices of Changes in Child and Youth Well-Being in the San Francisco Bay Area and the State of California, 1995?2005

Lee · Lamb · Land

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- 35 **Abstract** For the San Francisco Bay Area and the state of California, this paper describes child and youth well-being and its changes over time for the years 1995 to 2005. Sixteen Key Indicators of child and youth well-being are classified into five domains/areas of social life. Summary indices of changes over time are calculated for each of the five domains and for overall well-being. Disparity Well-Being Indices also are studied. Results indicate that: (1) Overall well-being in the Bay Area and in California steadily improved across this decade. (2) The safety and behavioral concerns domain shows the greatest improvements. (3) Girls had an advantage over boys in overall well-being throughout the decade. (4) But, compared to girls, boys made much more progress in overall well-being during these years. (5) All four racial and ethnic groups show improvement in their well-being. (6) Nonetheless, Disparity Well-Being Indices show that gaps in well-being among racial/ethnic groups persisted over time. (7) Gender and race/ethnic groups generally show similar trends over time across most of the well-being domains.
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Composite Indices of Changes in Child and Youth Well-Being in the San Francisco Bay Area and the State of California, 1995–2005

Joonkoo Lee · Vicki L. Lamb · Kenneth C. Land

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Abstract For the San Francisco Bay Area and the state of California, this paper describes child and youth well-being and its changes over time for the years 1995 to 2005. Sixteen Key Indicators of child and youth well-being are classified into five domains/areas of social life. Summary indices of changes over time are calculated for each of the five domains and for overall well-being. Disparity Well-Being Indices also are studied. Results indicate that: (1) Overall well-being in the Bay Area and in California steadily improved across this decade. (2) The safety and behavioral concerns domain shows the greatest improvements. (3) Girls had an advantage over boys in overall well-being throughout the decade. (4) But, compared to girls, boys made much more progress in overall well-being during these years. (5) All four racial and ethnic groups show improvement in their well-being. (6) Nonetheless, Disparity Well-Being Indices show that gaps in well-being among racial/ethnic groups persisted over time. (7) Gender and race/ethnic groups generally show similar trends over time across most of the well-being domains.

Keywords Child well-being · California, San Francisco · Gender well-being disparities · Race/ethnic well-being disparities

1 Introduction

How has the overall well-being of children and youths in the greater San Francisco Bay Area changed over time? Specifically, how did it change over the decade from 1995 to 2005? Did well-being converge or diverge between boys and girls and

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among different racial and ethnic groups? How did particular dimensions or domains of well-being change? How do changes in the well-being of children and youths in the Bay Area compare to changes in the well-being of children and youths in the state of California? These are complex questions for which there can be many answers and approaches to analysis.

The social indicators concept and social indicator methodology are a response to such questions. The use of social indicators is rooted in a decades-old need to chart changes in the quality of life over time (Land et al. 2007). The importance of this goal is directly related to social policy: only with consistent measurement of well-being and quality of life can a nation, state, or locality compare its current state of being to an historic equivalent. Such comparisons can facilitate changes in policy and governance that alter future trajectories of well-being (Moore et al. 2003).¹ For indicators that pertain to children and youths, they can serve advocacy groups, policy makers, researchers, the media, and service providers to monitor the changing condition of children and set goals for improvements (Land 2000).

To effectively address this need, it is necessary to develop statistical measures of a variety of specific indicators that cover several domains or areas of the lives of children. In addition, it is useful to combine the individual indicators into composite or summary indicators that tell us something about the statuses of children on average and overall and how these are changing over time. For decades, the use of composite or summary indicators has been instrumental in monitoring what is happening to the economy (e.g., the Dow Jones Industrial Average, the Consumer Price Index). More recently, efforts have been devoted to the development of a broader range of composite quality-of-life indices (see Hagerty et al. 2001, for a review).

As an example of this set of broader quality-of-life indices, Land et al. (2001) and Land et al. (2007) developed evidence-based composite social indicators to assess the social well-being of children and youths and changes therein over recent decades in the United States. The main overall composite indicator in this work — the *Child and Youth Well-Being Index (CWI)* — tracks changes in some 28 Key Indicators of the quality of life of children for the U.S. as a whole. CWI-type composite indicators have also been applied to the nation, state, or local levels and to specific sub-populations such as race/ethnic (see Lamb et al. 2005) and gender groups (see Meadows et al. 2005).²

In the present study, we focus on changes for the San Francisco Bay Area and the state of California by constructing CWIs and measuring well-being changes in these areas in a comparable way to the national CWI. This paper presents results on overall and gender- and race/ethnic-specific CWI trends for the Bay Area as a whole and the state of California from 1995 to 2005.³ The main focus of this study is to

¹ For a discussion of the need to monitor quality of life and recent developments therein, see the New Economics Foundation (2009) document *National Accounts of Well-Being*, <http://www.neweconomics.org/gen/uploads/iglzkyk45xj2jksb01c14fvq424012009010050.pdf>.

² A more detailed description of the CWI and the presentation of trends in the composite index as well as the summary index for age groups and race/ethnic groups can be found in the CWI website (<http://www.soc.duke.edu/~cwi/>).

³ Detailed analyses also are available on request from the authors for each of the six counties of the Bay Area (Alameda, Contra Costa, Marin, San Francisco, San Mateo, and Santa Clara), but are not included here for space considerations.

track and describe these trends, rather than to identify and explain the forces behind them. 70
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The paper is organized as follows: In the next section, methods and procedures of constructing the indices are discussed. Overall composite and domain-specific indices are then described with figures for the state of California and the Bay Area before cross-group comparisons are presented. The paper concludes with a summary of the main findings. 72
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2 Data and Methods 77

2.1 Data Selection, Imputation and Smoothing 78

The construction of the Child and Youth Well-Being Indices for this project began with a review of more than 250 child and youth-related indicators acquired from the Kidsdata.org database, which focuses on the San Francisco Bay Area. The vast majority of these indicators are available for only one or two years. A few are in the form of statistical time series with repeated measurements over several years. The earliest year for most of the indicator time series is 1997 and most end in 2003, while a few date back to earlier years and/or extend up to 2006. We set 1995 as the target base year and our goal was to track the trends up to 2005 (or 2004 when 2005 data were not available). We then considered indicators whose time series started as late as 1997 and ended at least 2003, and had at least three data points over the period. 79
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We identified 16 Key Indicators that met these selection criteria. Table 1 contains a list of the Key Indicators, gives brief definitions of each, identifies the age groups on which they are defined, and indicates whether or not data on the indicators used herein can be disaggregated by sex and race/ethnicity.⁴ Numerical values for these Key Indicators are based on data from general population surveys conducted by the Census Bureau and the state of California, and Vital Statistics reports to the state and the National Center for Health Statistics. The selected Indicators either measure well-being outcomes or are surrogates thereof. The focal age groups for the Indicators are the childhood and adolescent ages, generally bounded by ages 0 to 17 at last birthday. In the case of the child/youth death rate and the youth suicide rate, the upper age bound extends to 24. This is greater than age 18, but the larger age bound is constrained by the available data. In addition, the principal focus of this study is on trends over time, and the temporal trend for the larger age group is similar to what would be observed if it were possible to include data only up to age 18. 89
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Because the Key Indicators in Table 1 come from extant sample survey and vital statistics data sources, most of them are focused, as is often the case, on the incidence or prevalence of ill-being outcomes as contrasted to positive well-being outcomes. The field of child well-being studies has taken note of this and efforts are 103
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⁴ As Land et al. (2001) showed, conclusions about trends in child well-being can depend on the specific indicators and domains used in the composition of the summary indices. Thus, this study based on 16 indicators has bounded generalizability in that its conclusions could be altered when data for a more comprehensive set of indicators become available for study. Our prior experience gives us confidence, however, that the indicators and methodology used herein can capture major trends up or down in child well-being.

Table 1 Sixteen key indicators of child and youth well-being in the greater San Francisco Bay area

	Domain	Indicator	Definition	Age Group	Indicator Can Be Disaggregated By:	
					Sex	Race/Ethnicity
t1.1						
t1.2						
t1.3						
t1.4	<i>Family economic well-being domain:</i>	Children in poverty	Percentage of children ages 0 – 17 in households earning less than the federal poverty level	0–17	No	No
t1.5		Households that can afford to purchase a median-priced home	Percentage of households that can afford to purchase a median-priced home	Not Applicable	No	No
t1.6	<i>Health domain:</i>	Infant mortality rate	Number of deaths per 1,000 live births.	0–1	Yes	Yes
t1.7		Infants born at low birth weight	Percentage of infants born at low birthweight, which is defined as less than 2500 grams	0	Yes	Yes
t1.8		Child/youth death rate	Number of deaths per 100,000 children/youth ages 1 – 24	1–24	Yes	Yes
t1.9		Injury hospitalization rate	Number of non-fatal injury hospitalizations per 100,000 children/youth ages 0–20	0–20	Yes	Yes
t1.10		Asthma hospitalization rate	Number of asthma hospitalizations per 1,000 individuals at ages 0–14	0–14	Yes	Yes
t1.11		Women receiving prenatal care in the first trimester	Percentage of women who receive prenatal care in the first trimester of pregnancy	Not Applicable	Yes	Yes

t1.12	<i>Safety/behavioral concerns domain:</i>	Teen birth rate	Number of births per 1,000 girls ages 15–19	15–19	N.A.	Yes
t1.13		Juvenile felony arrest rate	Number of juvenile felony arrests per 1,000 youth ages 10–17	10–17	Yes	No
t1.14		Juvenile felony drug and alcohol arrest rate	Number of juvenile felony drug and alcohol arrests per 1,000 youth ages 10–17	10–17	No	No
t1.15	<i>Educational attainment:</i>	High school graduates completing college preparatory courses	Percentage of public school 12th grade graduates completing courses required for University of California (UC) and/or California State University (CSU) entrance, with a grade of "C" or better	17	Yes	Yes
t1.16		High school dropouts	Estimated percentage of public high school students who drop out of high school, by race/ethnicity, according to the four-year derived dropout rate, which is an estimate of the percentage of students who would drop out in a four-year period based on data collected for a single year	14–17	Yes	Yes
t1.17		Children with access to child care	Percentage of children ages 0–13 with parents in the labor force who have access to licensed child care	0–13	No	No
t1.18	<i>Emotional well-being domain:</i>	Youth suicide rate	Number of suicides per 100,000 youth age 15 – 24	15–24	Yes	Yes
t1.19		Self-inflicted injury hospitalization rate	Rate of non-fatal self-inflicted injury hospitalizations per 100,000 children/youth ages 5 – 20	5–20	Yes	Yes

underway to create data series on direct measures of children's satisfaction, friendships, or quality of family relations. This also is happening for data sources on child well-being in the Bay Area and the state of California. Unfortunately, these recent efforts typically only have produced measurements at one or two time points, and the focus of the present study is on changes in well-being across the 1995–2005 decade. In addition, it should be noted that the Land et al. (2007) study found a generally positive relationship between changes in the U.S. national CWI and those of a continuous series of sample survey data on responses of High School Seniors (typically age 17) to a life satisfaction question. Since the present study builds on the CWI studies, uses a similar methodology for studying changes over time, and makes comparisons of Bay Area and state of California trends with those of the U.S. as a whole, this finding suggests that the trends reported herein, while not based on as many indicators of positive well-being as desirable, likely are indicative generally of trends that would be identified with more comprehensive data series.

Since all of the Key Indicators did not have complete time series data points between 1995 and 2005, missing data were imputed at various points of the time series. For the Key Indicators for which statewide values were available but not for the counties, values for the counties were calculated using the ratio of the rates for the counties to the state in one or more preceding years (e.g., the rate of children in poverty, and juvenile felony drug and alcohol arrest rate). For years when both state- and Bay Area county-wide values were not available, missing values were imputed by averaging the values of two adjacent years (e.g., children with access to child care).

Some of the Key Indicator series were subjected to data smoothing procedures in order to extract underlying trends independently from stochastic variation from year to year. Such statistical “noise” is particularly large in less populated counties with relatively small numbers of children and youths, and in data disaggregated by gender and race/ethnicity. After careful examination of the movement of each Key Indicator, the whole or partial time series were smoothed by taking three-year moving averages for the counties for which stochastic variation in the data was severe. When the base year rate also showed evidence of being unduly influenced by stochastic variation — that is, the base year value is either too low or too high compared to the overall trend — the base year value was adjusted by taking an average with subsequent year values. Where necessary, data smoothing was conducted more than one time (e.g., self-inflicted injury hospitalization rate).⁵

Each Key Indicator then was assigned to one of five domains of child and youth well-being: family economic well-being, health, safety/behavioral concerns, educational attainment, and emotional well-being (Table 1). As Land et al. (2001) note, these domains — or similar domains with different names — have been well-established in numerous subjective well-being studies over the past three decades. The literature reviews by Cummins (1996; 1997) of 27 subjective well-being studies found, for example, that there is a relative small number of domains that comprise most of the subject areas that have been studied, such as material/economic well-being, productive activity, health, safety, place in community, intimacy, and emotional well-being. These domains of well-being recur again and again whether

⁵ For details on the imputation and smoothing procedures applied, Excel datasheets with all data series and notes on their construction are available from the authors on request.

the study uses informal focus group discussions or sample survey questionnaires and for population groups ranging from national sample surveys to clinical samples and across age groups from children to adults.

Calculating domain-specific indices allows us to evaluate the trends by the areas of concern and disaggregate the effect of each domain on composite indices. Some Key Indicators tap into phenomena that could be categorized into more than one well-being domain, but for purposes of composite index construction, they were counted only once in the domain to which they were assigned. Compared with the national CWI's seven domains (Land et al. 2001, 2007), our five domains do not include the social relationships and community connectedness domains due to the unavailability of relevant indicators. For the same reason, the emotional well-being domain does not include indicators relating to spiritual well-being unlike the emotional/spiritual domain in the original CWI.⁶

2.2 Index Calculation Procedures

To calculate the CWI, each of the 16 time series of the Key Indicators was indexed by the base year (1995). The base year value of the indicator was assigned a value of 100 and subsequent values of the indicator were taken as percentage changes in the index from the base year value. The directions of the indicators are oriented so that a value greater than 100 in subsequent years means that the social condition measured has improved and a value less than 100 indicates the well-being measured has deteriorated.

The 16 indexed Key Indicator time series were grouped into the five domains of well-being, and domain-specific CWI values were computed for each year by equal weighting. Statistical properties of the equal weighting procedure for the construction of composite quality of life indices were studied by Hagerty and Land (2007), who showed, using a mathematical model of composite indices in the presence of heterogeneous importance ratings among individuals for the component indicators, that the equal weighting method is what is termed a *minimax estimator* in statistics, in the sense that this method minimizes the likelihood of extreme or maximal disagreements among individuals on the composite index. In addition, Hagerty and Land stated and proved mathematically a number of theorems that define the conditions under which there will be agreement or disagreement among individuals with respect to rankings of units of analysis (e.g., sub-population groups, regions, countries) by quality of life in cross-section studies as well as on the direction of temporal changes in quality of life in over-time studies. They also reported on the results of a number of simulation studies of alternative weighting schemes and showed that intuition greatly underestimates the extent of agreement on rankings of units by quality of life in cross-section studies as well as on the direction of temporal changes in quality of life in over-time studies. Given the existence of this study, we do not engage in further methodological analyses in the present article. Rather, we adopt the equal weighting strategy and focus on the resulting substantive findings.

The annual domain-specific CWI values were computed until 2004 or 2005, depending on the last year data are available for the entire component indicators

⁶ For details on the definitions, units, and data sources of the Key Indicators used in this study, the Kidsdata.org website (<http://www.kidsdata.org/>) may be consulted.

within the domain. As a result, indices for the economic well-being and educational attainment domains were computed to 2005, while the other three domain-specific indices end in 2004. The five domain-specific indices were then aggregated into an equally weighted composite CWI for each year.

Since only two domain-specific indices were available for 2005, the composite CWI for each county was calculated between 1995 and 2004. These composite indices for each county were then grouped into an overall composite CWI value for the Bay Area as a whole. Domain-specific indices for the Bay Area were also computed by equally averaging the corresponding county-specific domain indices. The statewide composite CWIs were also calculated in the same way for comparison with the Bay Area.

Gender- and race/ethnic-specific CWIs were computed following the same procedures as the overall CWI. Composite indices were calculated separately for males and females. Also, four race/ethnic groups were examined: African American, Asian, Latino, and Caucasian. Since 2000, health-related data in California have distinguished Pacific Islanders from Asians and multiracial groups from Caucasians. Any inconsistency between before and after the year 2000 due to these categorical changes was not adjusted due to lack of available data. Thus, Asian and Caucasians categories from 1995 to 1999 include, respectively, Pacific Islanders and multiracial groups.

The limited availability of group-specific time series data necessitated the exclusion of some of the Key Indicators in calculating group-specific CWIs by gender or racial/ethnic groups (e.g., juvenile felony drug and alcohol arrest rate and children with access to child care) or the replacement of group-specific indices with overall indices (e.g., juvenile felony rate for race/ethnic CWIs). Both indicators in the economic well-being domains lack data disaggregated by gender and race/ethnicity, thus overall domain-specific indices were used in computing group-specific CWIs. Group-specific values fluctuate more than overall population values since the former have much smaller denominators than the latter, leading us to apply more extensive smoothing procedures.

Disparity in child and youth well-being among gender and race/ethnic groups was examined using the methodology developed by Hernandez and Macartney (2008). The Disparity Index is calculated in two steps. First, the percentage difference between each subgroup and the total population is computed, such as girls compared with the total population and boys compared with the total population. The overall population value of each indicator is assigned a value of 100 for each year, and a subgroup-specific value for the year is taken as the percentage of the population value. For example, if the value for girls is 10 percent higher in 1995 than for the population as a whole, a value of 110 would be assigned for that year to show the gap in well-being between girls and the total population. Likewise, a value of 95 would be given if the value for boys is 5 percent lower than for the population. A race/ethnic subgroup-specific value for each year was also calculated in the same way as a percentage of the total population value. For instance, if the value for Latinos is 8 percent higher in 2005 than for the population as a whole, a value of 108 would be given for Latinos for that year. Similarly, a value of 90 would be assigned to Caucasians if their value is 10 percent lower than for the total population.

Second, the difference among subgroups in the indexed values was calculated as the Disparity Index over time. For gender, girls' indexed value was used as the base, and boys' values were compared to those of girls. A positive Disparity Index indicates girls

do better or have an advantage over boys, and a negative Disparity Index indicates boys do better or have an advantage over girls. In the example above, the calculated gender Disparity Index of 15 points, means girls have a 15-point advantage over boys.

For race/ethnicity, we used Caucasians as a reference group for cross-subgroup comparisons. In other words, African American, Asian, and Latino children were each compared to their Caucasian peers. A positive Latino-Caucasian Disparity Index, for example, means Latino children do better or have an advantage over Caucasian children. In the aforementioned case, the computed Latino-Caucasian Disparity CWI, 18 points, indicates Latinos do better than their Caucasian peers by that amount.

As with the composite CWI, Disparity CWIs for each Key Indicator were aggregated into domain-specific Disparity Indices, and the composite Disparity CWI was calculated by averaging the equally-weighted domain Disparity Indices. To extract actual trends, the indices were subjected to data smoothing procedures with three-year moving averages. In both gender- and race/ethnic-specific Disparity CWIs, only three domains — health, educational attainment, and emotional well-being — were considered due to the lack of group-specific data for the economic well-being and safety/behavioral concerns domains.

3 Results

This section presents composite and domain-specific indices for the San Francisco Bay Area. First, trends in the overall well-being indices for the Bay Area are compared with those for California and the United States. Second, trends in domain-specific well-being indices are presented. Third, gender- and race/ethnic-specific composite and disparity well-being indices are discussed.⁷

3.1 Trends in Bay Area Child and Youth Well-Being and Comparisons with the State of California and the United States as a Whole

Figure 1 shows trends in the overall composite Child and Youth Well-Being Index for the Bay Area and the state of California from 1995 to 2004. In the Bay Area, the value of the CWI steadily increased from 1995; its value for 2004 is 114.5, indicating the overall child and youth well-being in the Bay Area improved by 14.5 percent over the decade. The state also shows improvement in well-being over these years. The overall composite CWI for the state increased to 115.7 in 2004 from its base in 1995, but shows a slight decline in the last two years from 118.2 in 2002. Compared to each other, the Bay Area underperformed throughout the period in terms of *the rate of improvement* as measured by the CWI, but the gap of the rate significantly narrowed in recent years. This does not mean that child and youth well-being in the Bay Area was worse than California over the period, but rather the state made greater improvements in child well-being as compared to 1995 rates. This is largely due to the higher levels of well-being in the Key Indicators in the 1995 base

⁷ Results in this paper are largely presented graphically. However, numerical data for each Key Indicator, domain-specific, and composite index are available from the authors on request.

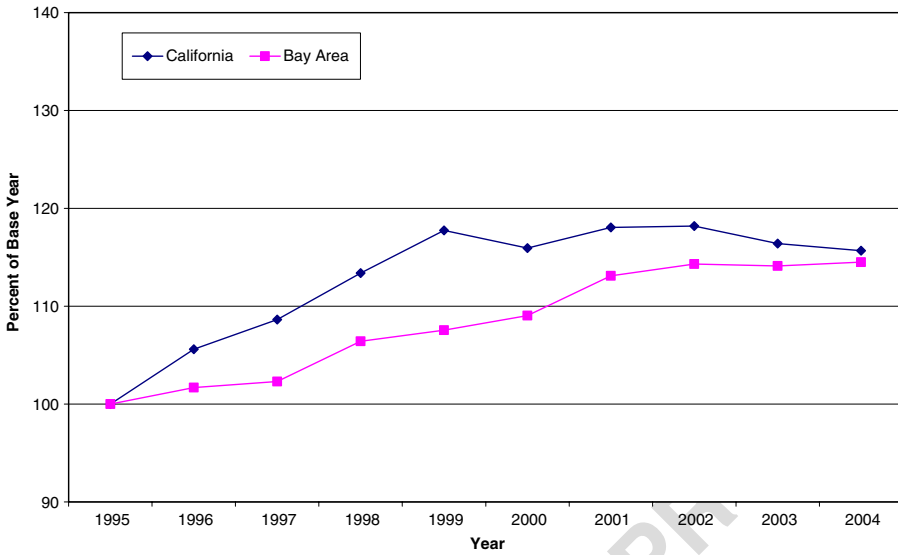


Fig. 1 Composite child and youth well-being index, California and Bay Area, 1995-2004

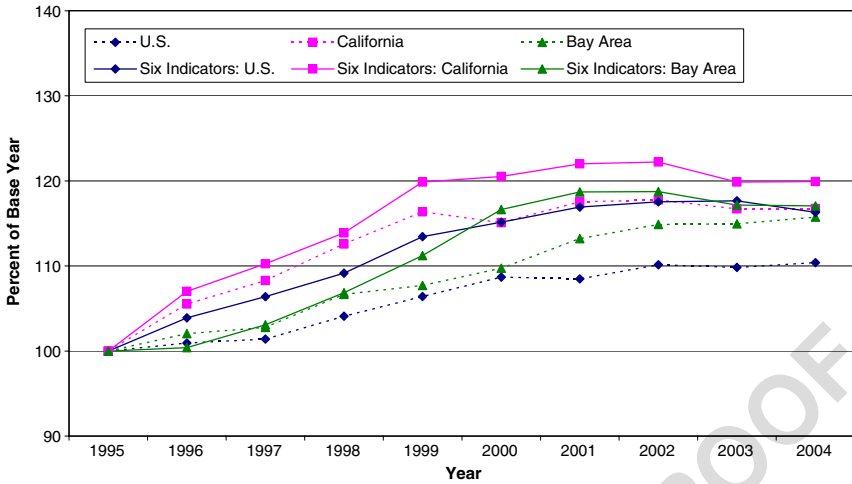
year in the Bay Area counties and the fact that improvements in most of the Key Indicators become more difficult to achieve at higher levels of well-being.

Comparing these indexed trends with the national CWI is a bit difficult since, as stated above, there is a discrepancy in the composition of indicators between the two sets of analyses. Thus, we recalculated the national CWI with six of its 28 indicators that correspond most closely to the Bay Area indicators: children in poverty, infant mortality rate, infants born at low birth weight, child/youth death rate, teen birth rate, and youth suicide rate. Figure 2 shows the trends of the averages of those six indicators (solid lines) for the Bay Area, the state of California, and the U.S. as a whole. Note that indexed values in the calculation are equally-weighted averages of individual indicators, not of equally-weighted domain indices. For comparison, composite indices for the full set of indicators for each group (28 for the U.S. and 16 for the Bay Area) are computed in the same way and plotted (dashed lines).

When limited to this small set of six Key Indicators, the Bay Area CWI for 2004 (117.1) is higher than the Bay Area index for the full set of Key Indicators (115.7). This is also the case for national and state full and limited CWIs, respectively, and the difference is highest in the national CWI (116.3 vs. 110.4). With the limited set of indicators, the Bay Area CWI still increased at a lower rate than the CWI of California as a whole (119.9), while the gap between the two in 2004 was wider for the six indicators than for the entire set (2.9 points vs. 1.0 points). However, the Bay Area did slightly better than the United States as a whole (116.3) in terms of the rate of improvement. The Bay Area CWI had fallen behind the national level during the first four years following 1995, but afterward became larger than the national CWI until 2003.⁸

⁸ The two sets of indices (each based on the full and limited set of indicators, as shown in Figure 2) trend quite similarly for each of the three groups, suggesting these six indicators are not peculiar in trends as compared to its full equivalent. However, the trends should be interpreted with caution, since they are based on a smaller set of indicators that lack any measure from the education domain.

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Note: The U.S. index is equally weighted average of 28 indicators (Land et al. 2001,2007); Six-component averages for the U.S., the state of California, and the Bay Area are based on six indicators that closely match to the national CWI: children poverty, infant mortality rate, infants born at low birth weight, child/youth death rate, teen birth rate, and youth suicide rate.

Fig. 2 Comparison of child and youth well-being index, U.S., California, and Bay Area, 1995–2004

In sum, child and youth well-being improved in the Bay Area over the decade as it did in the state. In terms of the rate of improvement, the Bay Area underperformed compared to the state of California. A comparison based on a limited set of common indicators shows the rate of improvement in the Bay Area lies in between the state and the United States as a whole; its improvements were greater than that for the entire country but not as great as the state.

3.2 Trends in Child and Youth Well-Being by Domain

While the overall composite CWI for the Bay Area increased, the domain-specific indices moved quite differently from one another, as shown in Fig. 3. The safety and behavioral concerns domain dramatically improved and this upward trend began after 1997. In contrast, there was a major decline in economic well-being, particularly after 2001, due to both increasing rates of children in poverty and decreasing rates of affordable housing during this period. Educational attainment in the Bay Area experienced most of its improvement between 1995 and 2002, marking the second highest rate of improvement for the entire period (by 20.7% in 2005). Emotional well-being improved the most in the first three years up to 107.5 in 1998 and recently bounced back from a decline thereafter, going beyond the previous highest point (111.3, in 2004). Child and youth health steadily improved over time but shows the smallest rate of improvement among the indicators that showed improvements by 2004 (to 10.2% in 2004). In short, the rise of domain CWIs in safety and behavioral concerns after 1997, and in educational attainment and emotional well-being between 1995 and 1998 largely accounted for the sustained increase of the composite CWI despite the overall decline of economic well-being in the Bay Area.

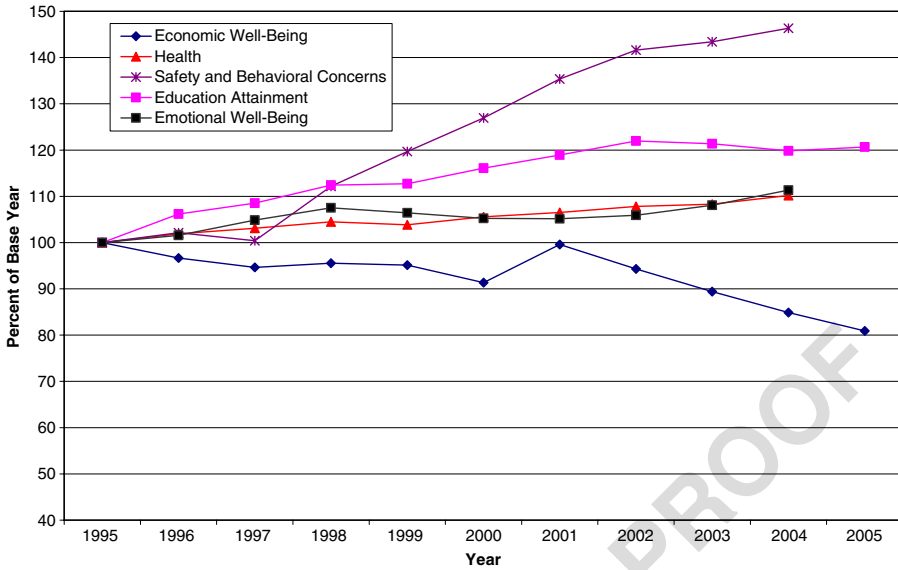


Fig. 3 Domain-specific summary indices, Bay Area, 1995–2005

3.3 Trends in Gender-Specific Child and Youth Well-Being

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This section first examines disparities in the well-being of girls and boys in the Bay Area in terms of differences in levels of composite indices well-being, and then presents the degree to which each of their levels of well-being improved compared to where they were a decade previously.

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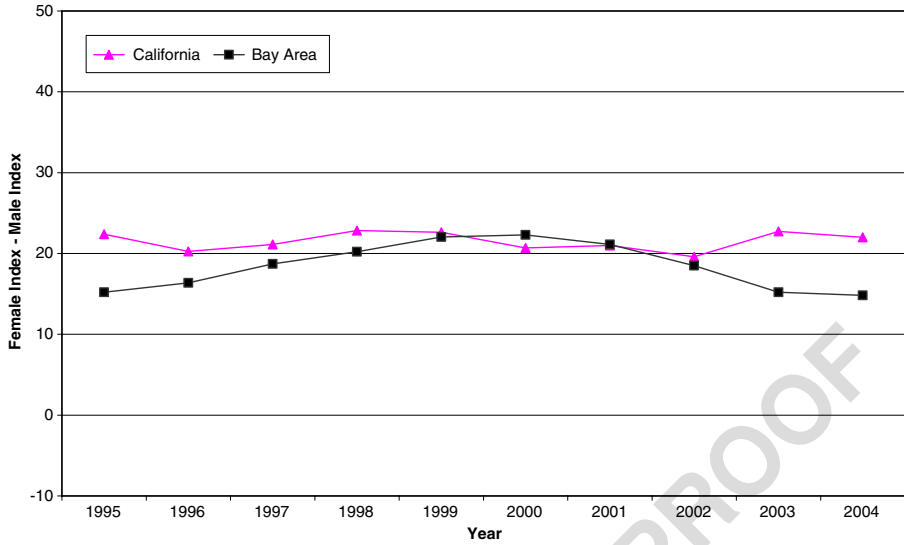
In Fig. 4, Gender Disparity CWIs are presented for the Bay Area and compared with California as a whole. The positive values shown suggest that girls do better than boys in both units of analysis over the entire period. Girls in the Bay Area hold a 15-point advantage over boys for the 1995 base year, and their advantage increases up to 22 points in 2000, suggesting a widening gender gap. After 2000, however, the gap became narrower up to a point where the Disparity CWI in 2004, 14.8 points, goes slightly down below the 1995 level. In the state of California, the Gender Disparity CWI shows a more consistent advantage by girls over boys, by between 20 and 23 points over the period. Girls’ enduring advantage in health and better educational attainment in recent years relative to their male peers account for the persistent gender gap in well-being in both California and the Bay Area, although their advantage in emotional well-being reversed in the Bay Area after 2003 and decreased in California.

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Turning next to changes in overall well-being over the decade, Fig. 5 shows composite child and youth well-being indices for males and females in the Bay Area (solid lines) and California (dashed lines). There is a significant difference between boys and girls in terms of well-being improvement in the Bay Area. The composite CWI for males steadily increases from 1995 to 2004, up by 13.4%. In terms of the rate of improvement, it almost approaches the statewide CWI for males in 2004. In contrast, girls show virtually no progress in well-being during the period. The CWI

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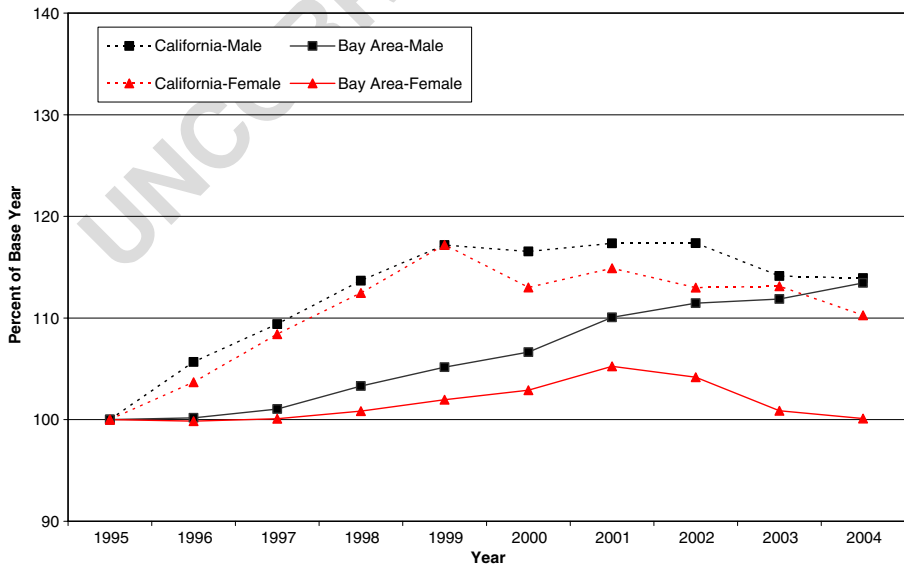
Composite indices of changes in child and youth well-being



Note: economic well-being and safety/behavioral concerns domains are not included because of lack of gender-specific data

Fig. 4 Gender disparity of child and youth well-being, California and Bay Area, 1995–2004

for females increased until 2001 by 5.3% but ended up with only a 0.1% increase 350
 from 1995 after a three-year decline. It is striking that CWI trends diverged between 351
 males and females after 2001, although the much more moderate improvement for 352
 females is not totally unexpected given the generally higher levels of females' well- 353
 being as described above. 354



Note: economic well-being domain indices for both males and females are used because of lack of gender-specific data

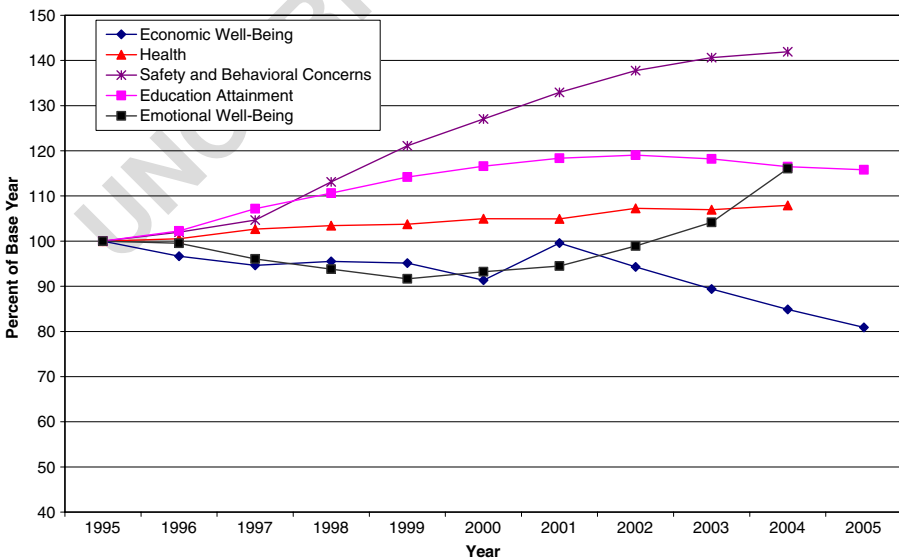
Fig. 5 Composite child and youth well-being index by gender, California and Bay Area, 1995–2004

Compared to California as a whole, enhancement in well-being in the Bay Area occurred at a much steadier rate for males and more moderately for females. The higher rate of improvement occurred between 1995 and 1999 in California for both males and females, and was much moderated afterward. Meanwhile, in the Bay Area, the rate of improvement was quite steady over the entire period for males. For females, it is striking that the improvement gap between males and females in California was not as great as in the Bay Area. In California, the difference in CWIs between boys and girls was only 3.7% points in 2004 in favor of boys, while boys' CWI was 13.3% points higher than girls' in the Bay Area for that year.

These improvement gaps between boys and girls are mostly due to diverging outcomes in the emotional well-being domain. While boys in the Bay Area recorded a level of well-being 16.1% higher in that domain in 2004 than 1995, their female peers' emotional well-being declined by 57.5% over the decade. As shown, in Figs. 6 and 7, males' emotional well-being index bounced back substantially from the lowest point in 1999, but the females' index continued to drop during the entire period.

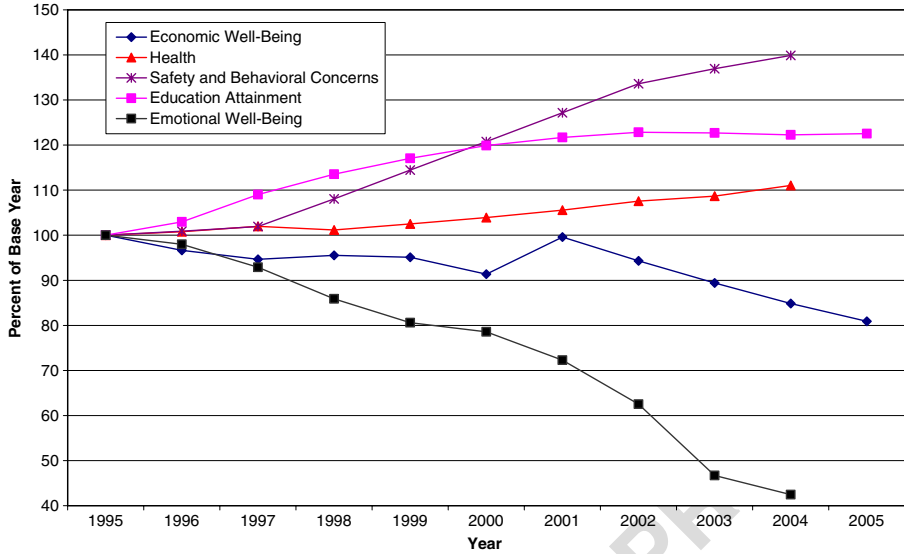
3.4 Trends in Race/Ethnic-Specific Child and Youth Well-Being

Figure 8 presents composite child and youth well-being indices of each of four race and ethnic groups — African Americans, Asians, Latinos, and Caucasians — in the Bay Area in comparison with California as a whole. While all groups show some progress in children's well-being over the decade, the rate of improvement varies among the groups. Asians recorded the highest level of CWIs in 2004, 111.8, which is higher than Latinos (111.6), Caucasians (111.0) and African Americans (103.7).



Note: economic well-being domain indices for both males and females are used because of lack of gender-specific data

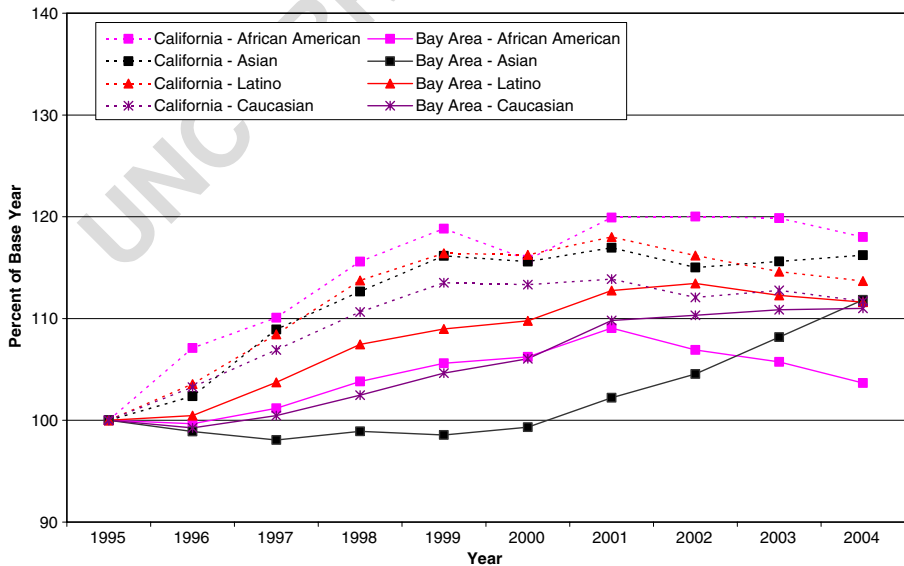
Fig. 6 Summary indices of child and youth well-being, males, Bay Area, 1995–2005



Note: economic well-being domain indices for both males and females are used because of lack of gender-specific data

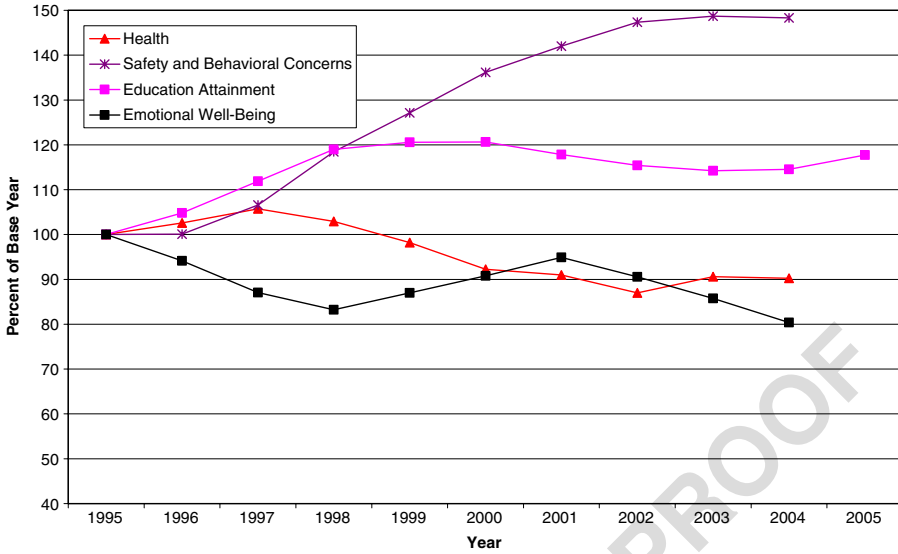
Fig. 7 Summary indices of child and youth well-being, females, Bay Area, 1995–2005

African Americans had a similar upward trend as Latinos and Caucasians did until 2001, but their well-being deteriorated after that year. In contrast, Asians fell behind in terms of the rate of progress until very recent years, but substantial improvement made from 2000 to 2004 allowed them to quickly catch up with the rest.



Note: economic well-being domain indices for the overall population are used because of lack of race/ethnicity-specific data

Fig. 8 Composite child and youth well-being index by race/ethnicity, California and Bay Area, 1995–2004



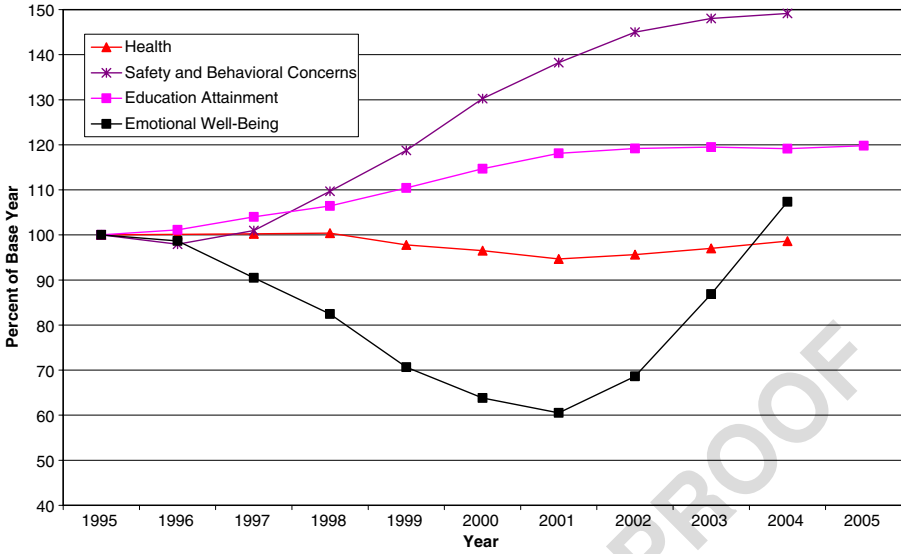
Note: Race/ethnicity-specific economic well-being domain indices are not available, thus not shown here

Fig. 9 Summary indices of child and youth well-being, African Americans, Bay Area, 1995–2005

Bay Area counties fell short of California as a whole in terms of the rate of race/ethnic-specific well-being improvement. As Fig. 8 indicates, the well-being of Bay Area children (solid lines) improved less than their racial/ethnic peers across the state (dashed lines). The gap in CWIs in 2004 was largest for African American (−14.3) and smallest for Caucasian children (−0.7). In fact, groups other than African Americans successfully narrowed the gap with California after 2001, while the gap increased for African Americans. Emotional well-being, again, plays a crucial role in the race/ethnic-specific CWI trends. For African Americans in the Bay Area (Fig. 9), a decline in emotional well-being in 2001–04 along with worsened health conditions pulled down their composite CWI, widening the gap with California in the rate of improvement. Advances in emotional well-being among Asians (in 2001–04, Fig. 10) and Latinos (in 1995–1999, Fig. 11) significantly contribute to the higher CWIs in these groups (Fig. 12).⁹

Turning next to measures of race/ethnic disparities, Fig. 13 presents race/ethnic child and youth well-being disparity indices for the Bay Area, with comparisons to California as a whole. Overall, the gaps between racial and ethnic groups persisted over time without narrowing. In contrast to the substantial advantage of Asian children (diamond symbols), both Latinos (circles) and African Americans (boxes) had a significant disadvantage over their Caucasians peers, as the negative Disparity CWIs suggest. The racial gap increased between African Americans and Caucasians

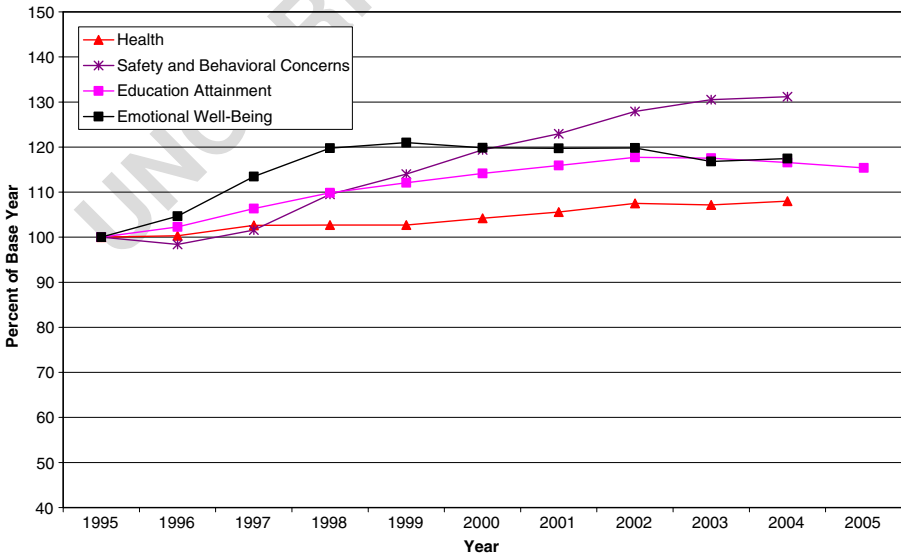
⁹ In the race/ethnic-specific domain CWIs, the following indicators were not considered due to the lack of relevant data: Asthma hospitalization rate (African Americans, Asians, and Latinos in Marin County; African Americans in San Mateo County) and youth suicide rate (African Americans, Asians, and Latinos in Marin County). Also juvenile felony rates for the entire population were used for all racial/ethnic groups, since race/ethnic-specific data for the indicator were not available.



Note: Race/ethnicity-specific economic well-being domain indices are not available, thus not shown here

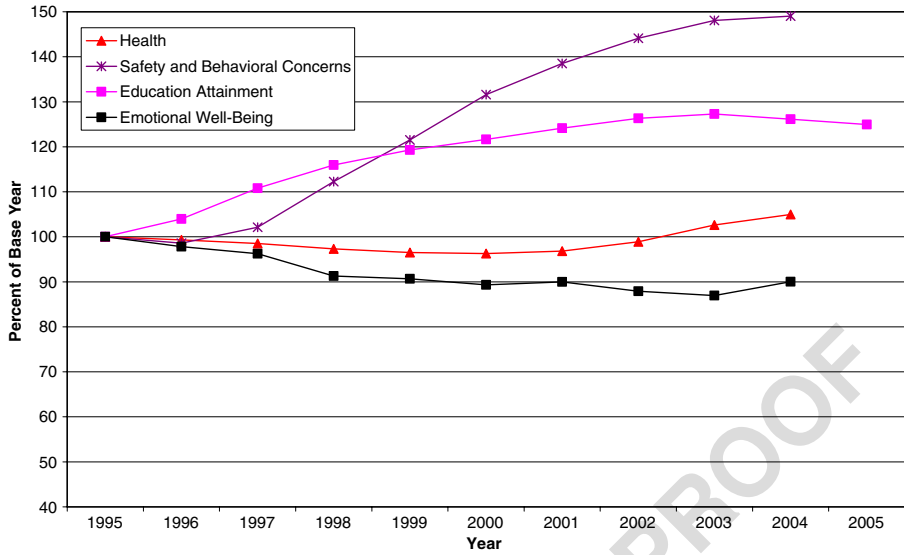
Fig. 10 Summary indices of child and youth well-being, Asians, Bay Area, 1995–2005

after the late 1990s, from -46.9 to -71.1 points in 1998–2004. Finally, the gap 402
 between the Bay Area and the state as a whole persisted over time in Asian- 403
 Caucasian and Latino-Caucasian Disparity Indices, and the African American- 404
 Caucasian disparity became wider. 405



Note: Race/ethnicity-specific economic well-being domain indices are not available, thus not shown here

Fig. 11 Summary indices of child and youth well-being, Latinos, Bay Area, 1995–2005



Note: Race/ethnicity-specific economic well-being domain indices are not available, thus not shown here

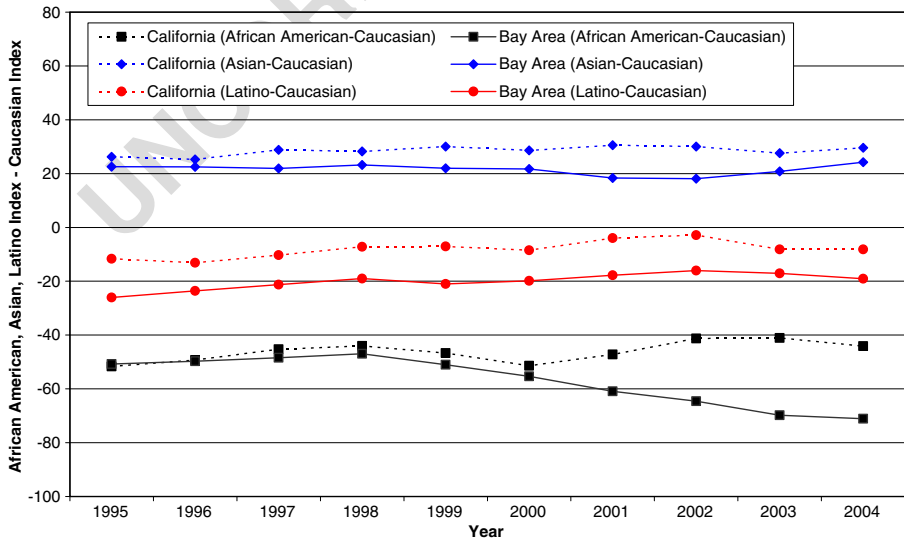
Fig. 12 Summary indices of child and youth well-being, Caucasians, Bay Area, 1995–2005

4 Conclusions

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The social indicator concept and methodology address the question, “How are we doing?” and specifically for the youngest members of our population, “How are our kids doing?” Scholars in child and youth well-being research have developed statistical measures of a variety of specific indicators and combined the individual

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Note: economic well-being and safety/behavioral concerns domain are not included because of lack of race/ethnicity-specific data

Fig. 13 Race/ethnicity disparity of child and youth well-being, California and Bay Area, 1995–2004

indicators into composite or summary indicators that tell us something about the statuses of children on average and overall, and how these are changing over time. These indicators can help us learn where progress has been made and what needs to be done next.

This paper has presented measures of changes in child and youth well-being in the San Francisco Bay Area and the state of California for the years 1995 to 2005. It has also presented trends in Disparity CWIs to help ascertain whether levels of well-being have converged or diverged between girls and boys, and among different racial and ethnic groups. The following major findings resulted from this project.

First, overall child and youth well-being in the San Francisco Bay Area steadily improved during the decade from the mid-1990s to the mid-2000s. Although the rate of well-being improvement in the Bay Area lagged behind the statewide rate for the early part of the period, the two show overall rates of improvement from 1995 to 2004—about 15 percent over baseline values — that are comparable over the entire period.

Second, with respect to our overall composite measures of levels of well-being, our Disparity CWI analyses showed that girls had an enduring advantage over boys during the time period studied: 15 points in the Bay Area and 22 points in California in 2004. Girls' sustained advantage over boys in health and educational attainment in recent years resulted in a persistent gender gap in well-being in both areas, although their advantage in emotional well-being was reversed in the Bay Area and considerably decreased in California in the last couple of years.

Third, in terms of the rate of improvement in overall well-being, boys made much more progress relative to a decade earlier, compared to girls. Boy's composite CWI in the Bay Area increased by 13 percent, while girls showed virtually no progress in well-being in 1995–2004. It was noted, however, that the generally higher level of girls' well-being means that further gains are more difficult to achieve which may account for their relatively moderate improvement.

Fourth, all four racial and ethnic groups – African Americans, Asians, Latinos, and Caucasians — show improvements in well-being over the decade. Asians, Latinos, and Caucasians in the Bay Area exhibited a more than ten percent increase of their CWIs, while African Americans' CWI increased by only four percent. The upward trend of African Americans' CWI reversed after 2001, making them fall behind the other race/ethnic groups.

Fifth, in terms of well-being levels, Disparity CWIs show that gaps in well-being among racial and ethnic groups persisted over time. Compared to Caucasians as a reference category, Asian children and youths in the Bay Area had a significant advantage, 22 points on average over the period. Unlike Asians, Latinos and African Americans both had a significant disadvantage, 20 points for the former and 57 points for the latter on average in 1995–2004. For African Americans, the gap with other groups increased after the year 2000.

Sixth, boys and girls, and children in different race/ethnic groups generally showed similar trends across most of the well-being domains. The safety/behavioral concerns domain recorded the highest in the rate of improvement, followed by education attainment and health. One domain that made a difference across the groups is emotional well-being. Suicide and self-inflicted injury hospitalization rates

vary considerably by gender and in different race and ethnic groups. This result, however, should be carefully interpreted since suicide rates were based on a very small number of cases when disaggregated by gender or race/ethnicity.

Seventh, on the whole, our results show child and youth well-being in the Bay Area and the state as a whole considerably improved over the decade. Given the many possible causes these improvements, it is impossible to ascribe them to one or even a small group of policies or programs. About all that can be affirmed from the present study is that the sum total of whatever was done to improve child and youth well-being during this decade — particularly in the educational attainment and safety/behavioral domains, which our analyses showed to have improved the most over the decade and to have led the improvements in overall well-being — by the numerous actors and organizations involved, including parents, schools, community organizations, and governments appears to have worked. From the present study, we also cannot say that things done in the Bay Area or the state of California worked better than those done elsewhere. We can only say that overall well-being improvements occurred in these specific entities during this time period. In addition, when expressed in a single CWI figure, some of the progress made in one domain or indicator can often be offset by deterioration in others. Or a big advance in one group's well-being may obscure a moderate, still significant, progress in other groups. However, that does not mean the progress is futile or such composite figures are meaningless. Rather it highlights that efforts to make progress occur should continue and, more importantly, it directs focus on improving the overall well-being of our children and youths regardless of their gender and race/ethnicity.

This brings our attention to the areas potential policy intervention should address: First, the governmental, community, and family efforts that have improved child well-being in the Bay Area over this decade should be continued, as there is a new cohort of children every few years. Second, the overall decline in economic well-being, particularly the lack of affordable housing, may continue to negatively affect child and youth well-being. Recent economic downturns and strained situations in the housing market will make things worse. Therefore, policy and community efforts should pay special attention to the economic well-being of children and youths in the Bay area. Another domain of concern is emotional well-being. Unlike economic well-being that declined across the board, more attention should be paid to improving emotional well-being for girls and for African American and Caucasian children and youths in particular. Efforts should be devoted to programs that have evidence-based proven effectiveness for suicide prevention.

In concluding, we emphasize that these conclusions are based on the specific indicators and domains used in this study. However, prior research using the CWI methodology for the U.S. as a whole indicates that it captures major trends up or down in child well-being. More comprehensive time series data could greatly help to further improve our understanding of the well-being status of children and how it is changing over time.

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