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경남권 지역사회 건강통계 현황: 2024년 지역사회건강조사 결과

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질병관리청 경남권질병대응센터 만성질환사업과

초 록

목적: 2024년에 실시된 지역사회건강조사 결과를 이용하여 경남권(부산, 울산, 경상남도)의 건강행태, 만성질환 및 관리 현황을 확인하고, 경남권 시·군·구 격차를 파악하고자 하였다.

방법: 경남권 지역주민의 건강행태와 만성질환 이환 및 관리 현황을 파악하기 위하여 질병관리청에서 발간한 '2024년 지역건강통계 한눈에 보기' 보고서 및 통계자료를 이용하였으며, 대푯값은 경남권 내 41개 시·군·구의 중앙값으로 산출하였다.

결과: 2024년 기준으로 경남권의 현재흡연율(17.7%), 남자 현재흡연율(32.3%), 걷기실천율(52.6%), 중등도 이상 신체활동실천율(27.6%), 걷기실천율(52.6%), 연간 체중조절 시도율(64.5%), 심근경색 및 뇌졸중 조기증상 인지율(각각 52.6%, 61.7%)은 전국값과 비교 시 양호한 지표로 나타났다. 그러나 월간음주율(60.3%), 비만율(34.0%), 고혈압 진단 경험률(30세 이상, 19.5%), 당뇨병 진단 경험률(30세 이상, 9.0%)은 전년 대비 증가하여 지역 내 해당 지표를 개선하기 위해 보건사업, 교육 및 홍보 등의 노력들이 필요할 것으로 보여진다. 또한 2024년 경남권 지자체의 지역 간 건강격차가 가장 큰 지표는 걷기실천율(47.6%p), 심근경색 인지율(47.4%p), 뇌졸중 인지율(40.5%p)로 지자체 간 지역격차를 개선하기 위한 노력이 필요한 것으로 나타났다.

결론: 이번 결과로 확인된 건강지표 중 개선이 필요한 지표 중심으로 지역적 특성을 고려하여 중재사업이 필요하며, 이 자료는 향후 경남권 만성질환 예방관리 중재사업 개발을 위한 기초자료로 사용할 것으로 기대한다.

주요 검색어: 경남권질병대응센터; 만성질환; 지역사회건강조사; 건강행태

서 론

악성신생물(암), 심장 질환, 뇌혈관 질환, 알츠하이머병, 당뇨병, 고혈압성 질환 등 만성질환은 2023년 기준 전체 사망의 약 78.1%로 사망원인 상위 10개 중 6개를 차지하고 있으며, 노인인구 증가와 함께 만성질환으로 인한 진료비도 크게 증가하여 만성질환 관련 진료비(90조원)는 전체 진료비의 84.5%를 차지하고 있다[1]. 2023년 통계청에서 발표한 사망원인 통계 결과[2]에 따르면 주요 사망원인 중 악성신생물(암), 뇌혈관질환, 알츠하이머, 당뇨병의 경우 경상남도가 전국 17개 시·도에서 가장 높은 수준(1위)이였으며, 뇌·심장질환은 울산이 전국에서 가장 높아(1위) 만성질환으로 인한

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핵심요약

① 이전에 알려진 내용은?

2008년부터 시행된 지역사회건강조사는 지역보건법에 근거하여 지역 건강통계를 매년 생산하고 있으며, 지역보건의료계획 수립 및 평가를 위해 근거자료로 활용되고 있다.

② 새로이 알게 된 내용은?

지역사회건강조사를 통해 지역 간 비교 결과, 경남권의 걷기 실천율, 심근경색 인지율, 뇌졸중 인지율의 지역격차가 경남권 내 지자체 간 상대적으로 커서 해당 지표의 건강격차를 줄이기 위한 노력이 필요한 것으로 나타났다.

③ 시사점은?

지역주민의 건강증진을 위해 경남권질병대응센터는 지속적으로 지자체 간 지역협력체계를 더욱 공고히 하고, 지역별 특성에 맞는 맞춤형 보건사업을 수립할 수 있도록 지원할 것이다.

사망률이 높은 것으로 나타났다(그림 1) [2]. 또한 2024년 행정안전부 자료에 따르면 경남권(부산, 울산, 경상남도)의 65세 이상 고령인구가 차지하는 비율은 21.7%로 전국 19.7%보다 높은 수준으로[3], 노령인구의 만성질환과 건강위해요인의 관리가 필수적이라 하겠다. 만성질환 예방과 관리를 위해서는 건강위해요인 개선과 함께 선행질환의 조기인지, 조절 및 관리 등이 필요하며, 개인 차원의 노력뿐만 아니라 지역사회 단위 및 국가차원의 통합 연계가 필요하다. 이를 위해 지역 내 건강행태 및 만성질환 관리 현황을 파악하여 지역에 맞는 효과적인 맞춤형 예방 및 관리 중재사업을 추진할 필요가 있다. 2008년부터 매년 질병관리청은 지역사회건강조사를 통해 지역주민의 건강행태, 만성질환 이환 및 관리 수준에 대한 보건통계자료를 생산하고 있으며, 지방자치단체에서는 지역보건의료계획 수립 및 평가 시 지역사회건강조사 결과를 근거자료로 활용하고 있다. 본 원고에서는 2024년 지역사회건강조사 결과를 바탕으로 발간된 '지역건강통계 한눈에 보기' 보고서 및 통계 결과를 근거로 경남권의 건강행태와 만성질환 이환 및 관리 현황을 파악하고, 경남권의 시 · 군 · 구 격차 추이를 파악하여 만성질환 예방관리 중재사업 개발을 위한 기초자료로 제공하고자 한다.

방 법

경남권 지역주민의 건강행태와 만성질환 이환 및 관리 현황을 파악하기 위하여 질병관리청에서 발간한 '2024년 지역건강통계 한눈에 보기' 보고서 및 통계자료를 이용하였다[4].

해당 통계집에 수록된 지표 중 분석을 위해 건강행태와 관련된 지표 10개, 이환과 관련된 지표 6개를 선별하였다(표 1). 16개 지표 중 지자체에서 보건사업을 수행하기 위해 필요한 주요지표 10개를 최종 선정하였다. 각 건강지표별 결과는 성 · 연령 표준화율을 사용하였고, 대푯값은 경남권 내 41

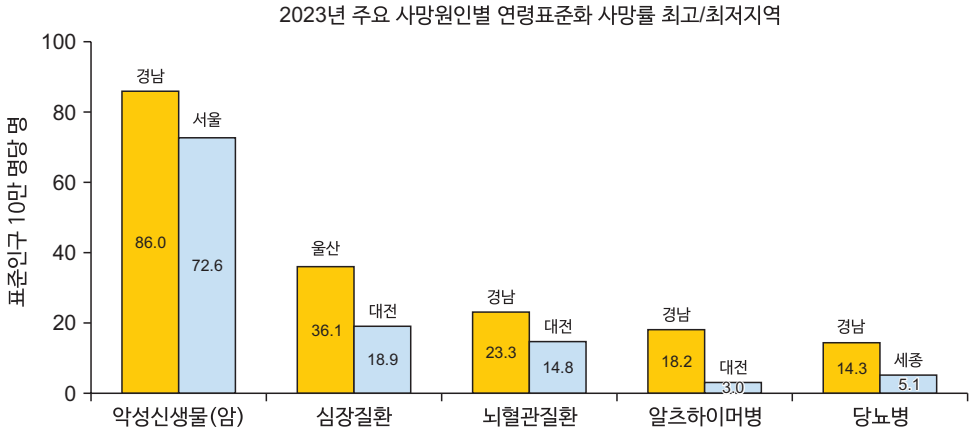


그림 1. 2023년 주요 사망원인별 연령표준화 사망률 최고/최저 시·도
Reused from Statistics Korea (https://kostat.go.kr/board.es?mid=a10301060200&bid=218&act=view&list_no=433106) [2].

표 1. 경남권(부산, 울산, 경남) 주요 건강지표별 현황(2014, 2023, 2024년)

구분	지표명	부산광역시(%)			전년 대비 증감	울산광역시(%)			전년 대비 증감	경상남도(%)			전년 대비 증감	경남권(%)			전년 대비 증감 (%p)	전국[a] (%)			전년 대비 증감
		2014	2023	2024		2014	2023	2024		2014	2023	2024		2014	2023	2024		2014	2023	2024	
건강 행태	현재흡연율	23.4	18.8	16.8	▼	22.5	19.7	19.2	▼	24.1	19.1	17.7	▼	23.7	19.3	17.7	▼[b] (−1.6)	24.0	20.3	18.9	▼
	남자 현재흡연율	44.3	33.8	30.2	▼	42.6	35.5	35.4	▼	45.5	35.6	32.5	▼	45.2	35.6	32.3	▼ (−3.3)	45.2	36.1	34.0	▼
	월간음주율	64.1	59.6	61.4	▲	43.3	61.0	62.4	▲	64.1	57.8	60.0	▲	62.6	57.9	60.3	▲[b] (2.4)	60.9	58.0	58.3	▲
	고위험음주율	15.1	12.6	12.3	▼	14.6	13.6	13.8	▲	16.7	13.9	13.8	▼	14.8	13.6	13.0	▼ (−0.6)	14.6	13.2	12.6	▼
	걷기실천율	43.7	53.2	60.3	▲	40.7	52.5	54.5	▲	31.2	43.3	48.0	▲	36.1	48.5	52.6	▲ (4.1)	37.5	47.9	49.7	▲
	중등도 이상 신체활동 실천율	21.7	24.4	25.8	▲	21.5	27.1	29.2	▲	23.2	25.9	31.8	▲	20.9	23.9	27.6	▲ (3.7)	21.7	25.1	26.6	▲
	비만율 (자가보고)	24.5	32.1	33.2	▲	23.5	33.2	34.7	▲	24.0	32.4	33.5	▲	24.3	33.1	34.0	▲ (0.9)	25.4	33.7	34.4	▲
	연간 체중조절 시도율	61.1	69.3	64.3	▼	58.0	70.1	68.3	▼	54.3	65.4	66.6	▲	56.2	67.5	64.5	▼ (−3.0)	57.0	66.9	65.0	▼
	우울감 경험률	5.8	7.7	6.3	▼	5.3	8.6	7.2	▼	4.2	7.6	5.6	▼	5.1	6.6	6.6	- (-)	6.4	7.3	6.2	▼
	스트레스 인지율	26.9	23.9	22.6	▼	25.2	25.8	22.2	▼	25.6	24.5	20.5	▼	26.7	23.9	21.7	▼ (−2.2)	28.0	25.7	23.7	▼
이환 및 의료 이용	고혈압 진단 경험률 (30세 이상)	17.8	19.0	19.5	▲	18.2	18.7	19.3	▲	16.8	18.5	18.7	▲	17.1	19.0	19.5	▲ (0.5)	19.1	20.6	21.1	▲
	고혈압 진단 경험자(30세 이상)의 치료율	87.5	92.9	93.0	▲	87.0	92.8	93.7	▲	88.8	95.0	94.5	▼	87.9	93.9	93.6	▼ (−0.3)	88.1	93.6	93.5	▼
	당뇨병 진단 경험률 (30세 이상)	7.1	8.7	9.0	▲	8.1	7.3	8.4	▲	6.7	8.2	8.2	-	7.1	8.3	9.0	▲ (0.7)	7.7	9.1	9.4	▲
	당뇨병 진단 경험자(30세 이상)의 치료율	84.8	92.5	94.6	▲	79.5	91.1	93.9	▲	85.9	95.8	95.6	▼	85.4	93.9	94.7	▲ (0.8)	84.5	92.8	93.4	▲
	심근경색 조기증상 인지율	-	56.3	55.1	▼	-	47.4	45.7	▼	-	55.2	50.9	▼	-	56.5	52.6	▼ (−3.9)	-	52.9	49.7	▼
	뇌졸중(중풍) 조기증상 인지율	-	63.7	61.5	▼	-	60.0	55.5	▼	-	63.5	58.8	▼	-	64.9	61.7	▼ (−3.2)	-	62.0	59.2	▼

[a]시 · 군 · 구 258개 지자체 중앙값. [b]▼=감소; ▲=증가.

개 시 · 군 · 구 중앙값으로 산출하였다. 경남권의 최근 10년간(2014–2024년) 경남권 3개 시 · 도별 및 41개 시 · 군 · 구 최댓값(%p), 최솟값(%p) 추이를 연도별 그래프로 나타내었고, 전년 대비 증감(시 · 도)과 당해연도의 지역 격차(시 · 군 · 구)를 제시하였다. 또한 전국 지표값(2024년)과 최근 3년(2021–2023년) 경남권역 지표값을 비교하여 지역 보건사업 우선순

위를 선정하는 황금 다이아몬드 방법을 사용하여[5], 각 지역별(부산, 울산, 경상남도)로 제시하였다.

결 과

경남권의 주요 건강지표 10개를 분석한 결과, 지표의 현황을 살펴보면 2024년의 경남권 현재흡연율과 남자 현재흡연율은 각각 17.7%, 32.3%로 전년대비 각 1.6%p, 3.3%p 감소하였다. 월간음주율은 60.3%, 걷기실천율은 52.6%, 중등도 이상 신체활동실천율은 27.6%, 비만율 34.0%로 전년대비 각각 2.4%p, 4.1%p, 3.7%p, 0.9%p 증가하였다. 고혈압 진단 경험률은 19.5%, 당뇨병 진단 경험률은 9.0%로 전년대비 각각 0.5%p, 0.7%p 증가하였다. 특히 걷기실천율의 경우 경남권 내 지자체간 격차가 47.6%p로 건강지표 중 경남권 내 격차가 가장 큰 것으로 확인되었다(그림 2E).

1. 흡연율

경남권 시 · 도별 주요 건강지표 현황은 표 1에 제시하였다. 현재흡연율은 2014년 이후로 감소 추세에 있으며, 2023년 대비 부산(18.8%), 울산(19.7%), 경상남도(19.1%)는 2024년에 각각 16.8%, 19.2%, 17.7%로 감소하였다(경남권 내 시 · 도간 격차 2.4%p). 전국(18.9%)과 비교해 부산 및 경상남도의 경우 각각 2.1%p, 1.2%p가 낮았다.

남자 현재흡연율의 경우 2014년 이후로 감소추세에 있으며, 2023년 대비 부산(33.8%), 울산(35.5%), 경상남도(35.6%)는 2024년에 각각 30.2%, 35.4%, 32.5%로 감소하였다(경남권 내 시 · 도간 격차 5.2%p). 전국(34.0%)과 비교해 부산 및 경상남도의 경우 각각 3.8%p, 1.5%p 낮은 것을 확인하였다(그림 2A, B).

2024년 경남권 41개 시 · 군 · 구별 남자 현재흡연율 및 남자 현재흡연율의 경우 경상남도 고성군이 각각 23.9%, 43.6%로 가장 높았고, 경상남도 함양군이 각각 12.3%, 21.5%로 가장 낮았다(경남권 내 시 · 군 · 구간 격차 22.1%p) (그림 3A, B).

2. 음주율

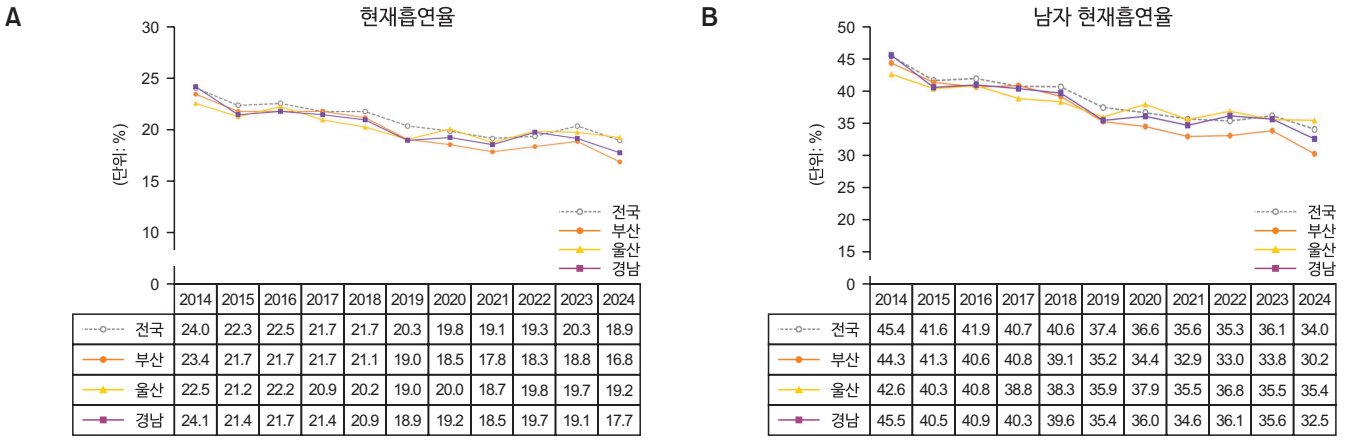
경남권 시 · 도별 월간음주율은 2014년 이후로 다소 감소하였으며, 2023년 대비 부산(59.6%), 울산(61.0%), 경상남도(57.8%)는 2024년에 각각 61.4%, 62.4%, 60.0%로 감소하였다(경남권 내 시 · 도간 격차 2.4%p). 전국(58.3%)과 비교해 부산, 울산, 경상남도의 월간음주율은 각각 3.1%p, 4.1%p, 1.7%p로 높았다(그림 2C). 2024년 경남권 41개 시 · 군 · 구별 남자 월간음주율의 경우 울산 남구가 66.9%로 가장 높았고, 경상남도 진주시가 44.1%로 가장 낮았다(경남권 내 시 · 군 · 구간 격차 22.8%p) (그림 3C).

3. 비만율

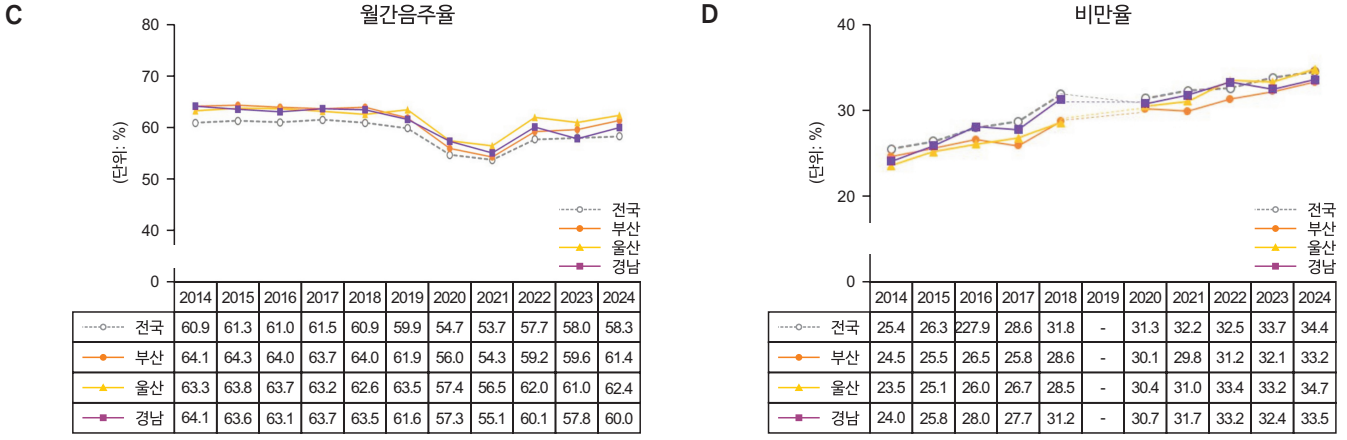
경남권 시 · 도별 비만율(자가보고)은 2014년 이후로 증가추세에 있으며, 2023년 대비 부산(32.1%), 울산(33.2%), 경상남도(32.4%)는 2024년에 각각 33.2%, 34.7%, 33.5%로 증가하였다(경남권 내 시 · 도간 격차 1.5%p). 전국(34.4%)과 비교해 부산, 경상남도는 낮았고, 울산이 0.3%p 높았다(그림 2D). 2024년 경남권 41개 시 · 군 · 구별 비만율(자가보고)의 경우 경상남도 의령군이 40.0%로 가장 높았고, 경상남도 창원시가 29.3%로 가장 낮았다(경남권 내 시 · 군 · 구간 격차 10.7%p) (그림 3D).

4. 신체활동

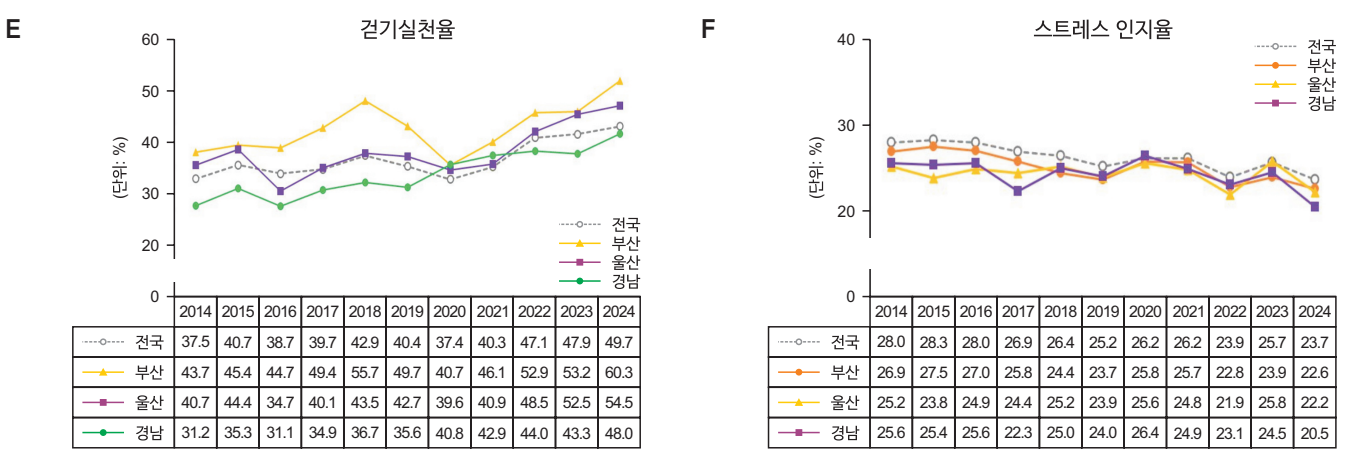
경남권 시 · 도별 걷기실천율은 2014년 이후로 증가추세에 있으며, 2023년 대비 부산(53.2%), 울산(52.5%), 경상남도(43.3%)는 2024년에 각각 60.3%, 54.5%, 48.0%로 증가하였다(경남권 내 시 · 도간 격차 12.3%p). 전국(49.7%)과 비교해 부산 10.6%p, 울산 4.8%p 높았고, 경상남도는 1.7%p 낮았다(그림 2E). 2024년 경남권 41개 시 · 군 · 구별 걷기실



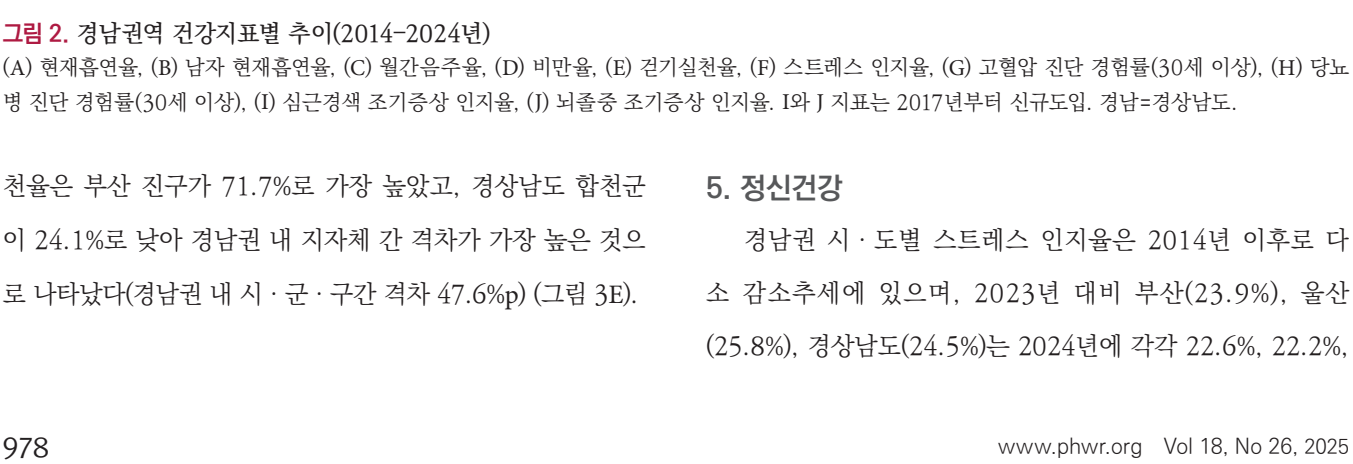
	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
전국	24.0	22.3	22.5	21.7	21.7	20.3	19.8	19.1	19.3	20.3	18.9
부산	23.4	21.7	21.7	21.7	21.1	19.0	18.5	17.8	18.3	18.8	16.8
울산	22.5	21.2	22.2	20.9	20.2	19.0	20.0	18.7	19.8	19.7	19.2
경남	24.1	21.4	21.7	21.4	20.9	18.9	19.2	18.5	19.7	19.1	17.7



	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
전국	45.4	41.6	41.9	40.7	40.6	37.4	36.6	35.6	35.3	36.1	34.0
부산	44.3	41.3	40.6	40.8	39.1	35.2	34.4	32.9	33.0	33.8	30.2
울산	42.6	40.3	40.8	38.8	38.3	35.9	37.9	35.5	36.8	35.5	35.4
경남	45.5	40.5	40.9	40.3	39.6	35.4	36.0	34.6	36.1	35.6	32.5



	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
전국	60.9	61.3	61.0	61.5	60.9	59.9	54.7	53.7	57.7	58.0	58.3
부산	64.1	64.3	64.0	63.7	64.0	61.9	56.0	54.3	59.2	59.6	61.4
울산	63.3	63.8	63.7	63.2	62.6	63.5	57.4	56.5	62.0	61.0	62.4
경남	64.1	63.6	63.1	63.7	63.5	61.6	57.3	55.1	60.1	57.8	60.0



	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
전국	25.4	26.3	227.9	28.6	31.8	-	31.3	32.2	32.5	33.7	34.4
부산	24.5	25.5	26.5	25.8	28.6	-	30.1	29.8	31.2	32.1	33.2
울산	23.5	25.1	26.0	26.7	28.5	-	30.4	31.0	33.4	33.2	34.7
경남	24.0	25.8	28.0	27.7	31.2	-	30.7	31.7	33.2	32.4	33.5

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
전국	37.5	40.7	38.7	39.7	42.9	40.4	37.4	40.3	47.1	47.9	49.7
부산	43.7	45.4	44.7	49.4	55.7	49.7	40.7	46.1	52.9	53.2	60.3
울산	40.7	44.4	34.7	40.1	43.5	42.7	39.6	40.9	48.5	52.5	54.5
경남	31.2	35.3	31.1	34.9	36.7	35.6	40.8	42.9	44.0	43.3	48.0

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
전국	28.0	28.3	28.0	26.9	26.4	25.2	26.2	26.2	23.9	25.7	23.7
부산	26.9	27.5	27.0	25.8	24.4	23.7	25.8	25.7	22.8	23.9	22.6
울산	25.2	23.8	24.9	24.4	25.2	23.9	25.6	24.8	21.9	25.8	22.2
경남	25.6	25.4	25.6	22.3	25.0	24.0	26.4	24.9	23.1	24.5	20.5

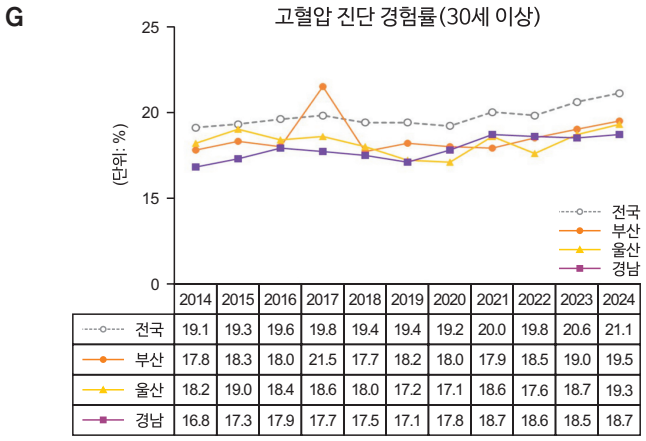
그림 2. 경남권역 건강지표별 추이(2014–2024년)

(A) 현재흡연율, (B) 남자 현재흡연율, (C) 월간음주율, (D) 비만율, (E) 걷기실천율, (F) 스트레스 인지율, (G) 고혈압 진단 경험률(30세 이상), (H) 당뇨병 진단 경험률(30세 이상), (I) 심근경색 조기증상 인지율, (J) 뇌졸중 조기증상 인지율. I와 J 지표는 2017년부터 신규도입. 경남=경상남도.

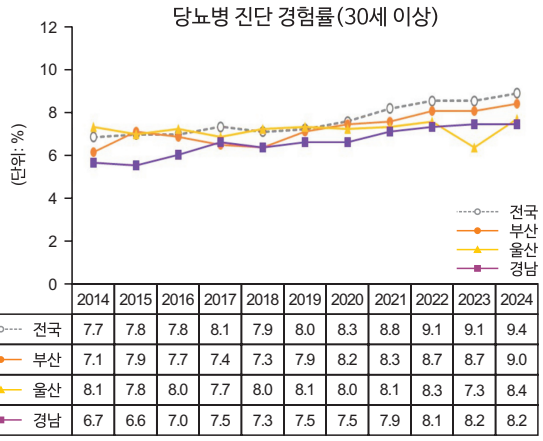
천율은 부산 진구가 71.7%로 가장 높았고, 경상남도 합천군이 24.1%로 낮아 경남권 내 지자체 간 격차가 가장 높은 것으로 나타났다(경남권 내 시 · 군 · 구간 격차 47.6%p) (그림 3E).

5. 정신건강

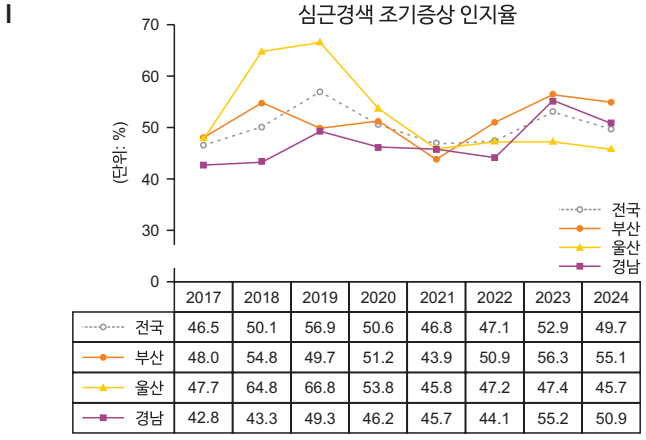
경남권 시 · 도별 스트레스 인지율은 2014년 이후로 다소 감소추세에 있으며, 2023년 대비 부산(23.9%), 울산(25.8%), 경상남도(24.5%)는 2024년에 각각 22.6%, 22.2%,



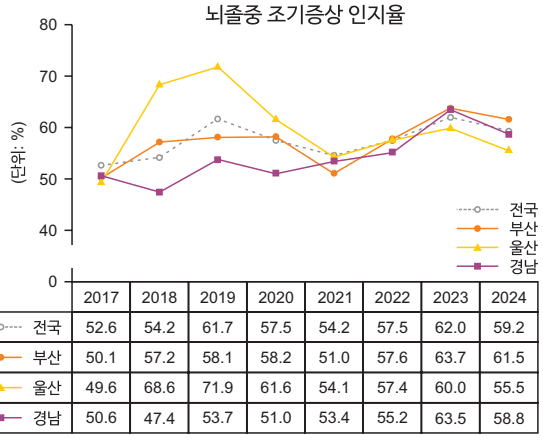
	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
전국	19.1	19.3	19.6	19.8	19.4	19.4	19.2	20.0	19.8	20.6	21.1
부산	17.8	18.3	18.0	21.5	17.7	18.2	18.0	17.9	18.5	19.0	19.5
울산	18.2	19.0	18.4	18.6	18.0	17.2	17.1	18.6	17.6	18.7	19.3
경남	16.8	17.3	17.9	17.7	17.5	17.1	17.8	18.7	18.6	18.5	18.7



	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
전국	7.7	7.8	7.8	8.1	7.9	8.0	8.3	8.8	9.1	9.1	9.4
부산	7.1	7.9	7.7	7.4	7.3	7.9	8.2	8.3	8.7	8.7	9.0
울산	8.1	7.8	8.0	7.7	8.0	8.1	8.0	8.1	8.3	7.3	8.4
경남	6.7	6.6	7.0	7.5	7.3	7.5	7.5	7.9	8.1	8.2	8.2



	2017	2018	2019	2020	2021	2022	2023	2024
전국	46.5	50.1	56.9	50.6	46.8	47.1	52.9	49.7
부산	48.0	54.8	49.7	51.2	43.9	50.9	56.3	55.1
울산	47.7	64.8	66.8	53.8	45.8	47.2	47.4	45.7
경남	42.8	43.3	49.3	46.2	45.7	44.1	55.2	50.9



	2017	2018	2019	2020	2021	2022	2023	2024
전국	52.6	54.2	61.7	57.5	54.2	57.5	62.0	59.2
부산	50.1	57.2	58.1	58.2	51.0	57.6	63.7	61.5
울산	49.6	68.6	71.9	61.6	54.1	57.4	60.0	55.5
경남	50.6	47.4	53.7	51.0	53.4	55.2	63.5	58.8

그림 2. 계속

20.5%로 모두 감소하였다(경남권 내 시 · 도간 격차 2.1%p). 전국(23.7%)과 비교해 부산 1.1%p, 울산 1.5%p, 경상남도 3.2%p로 모두 낮았다(그림 2F). 2024년 경남권 41개 시 · 군 · 구별 스트레스 인지율은 경상남도 거창군이 26.8%로 가장 높고, 경상남도 거제시는 13.3%로 가장 낮았다(경남권 내 시 · 군 · 구간 격차 13.5%p) (그림 3F).

6. 이환

경남권 시 · 도별 고혈압 진단 경험률(30세 이상)은 2014년 이후로 다소 증가추세에 있으며, 2023년 대비 부산(19.0%), 울산(18.7%), 경상남도(18.5%)에서 2024년에 각각 19.5%, 19.3%, 18.7%로 증가하였다(경남권 내 시 · 도간 격차 0.8%p). 전국(21.1%)과 비교해 경남권은 낮은 수준이었다(부산 1.6%p, 울산 1.8%p, 경상남도 2.4%p) (그림 2G). 2024년 경남권 41개 시 · 군 · 구별 고혈압 진단 경험률(30세 이상)은 부산 사하구가 23.0%로 가장 높았고, 경남 마산이 16.5%로 가장 낮았다(경남권 내 시 · 군 · 구간 격차 6.5%p) (그림 3G).

당뇨병 진단 경험률(30세 이상)은 2014년 이후로 다소 증가추세에 있으며, 2023년 대비 부산(8.7%), 울산(7.3%), 경상남도(8.2%)에서 2024년에 각각 9.0%, 8.4%, 8.2%로 경상남도를 제외하고 증가하였다(경남권 내 시 · 도간 격차 0.8%p). 전국(9.4%)과 비교해서는 3개 시 · 도 모두가 낮은 수준이었다(부산 0.4%p, 울산 1.0%p, 경상남도 1.2%p) (그림 2H). 2024년 경남권 41개 시 · 군 · 구별 당뇨병 진단 경험률(30세 이상)은 부산 사상구가 12.3%로 가장 높았고, 경상

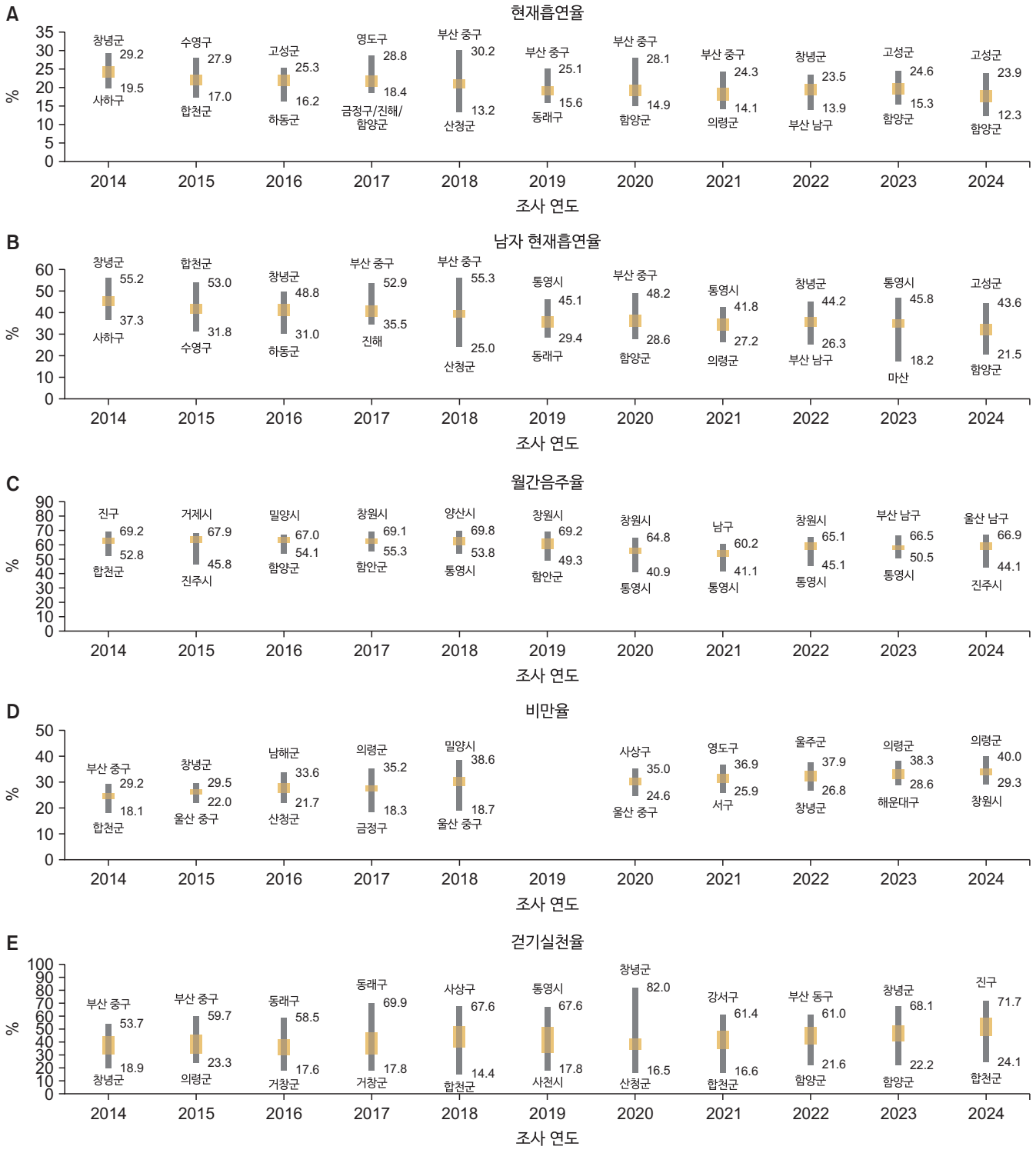


그림 3. 지난 10년간 경남권역 건강지표별 최고·최저 시·군·구(2014–2024년)

(A) 현재흡연율, (B) 남자 현재흡연율, (C) 월간음주율, (D) 비만율, (E) 걷기실천율, (F) 스트레스 인지율, (G) 고혈압 진단 경험률(30세 이상), (H) 당뇨병 진단 경험률(30세 이상), (I) 심근경색 조기증상 인지율, (J) 뇌졸중 조기증상 인지율. I와 J 지표는 2017년부터 신규도입.

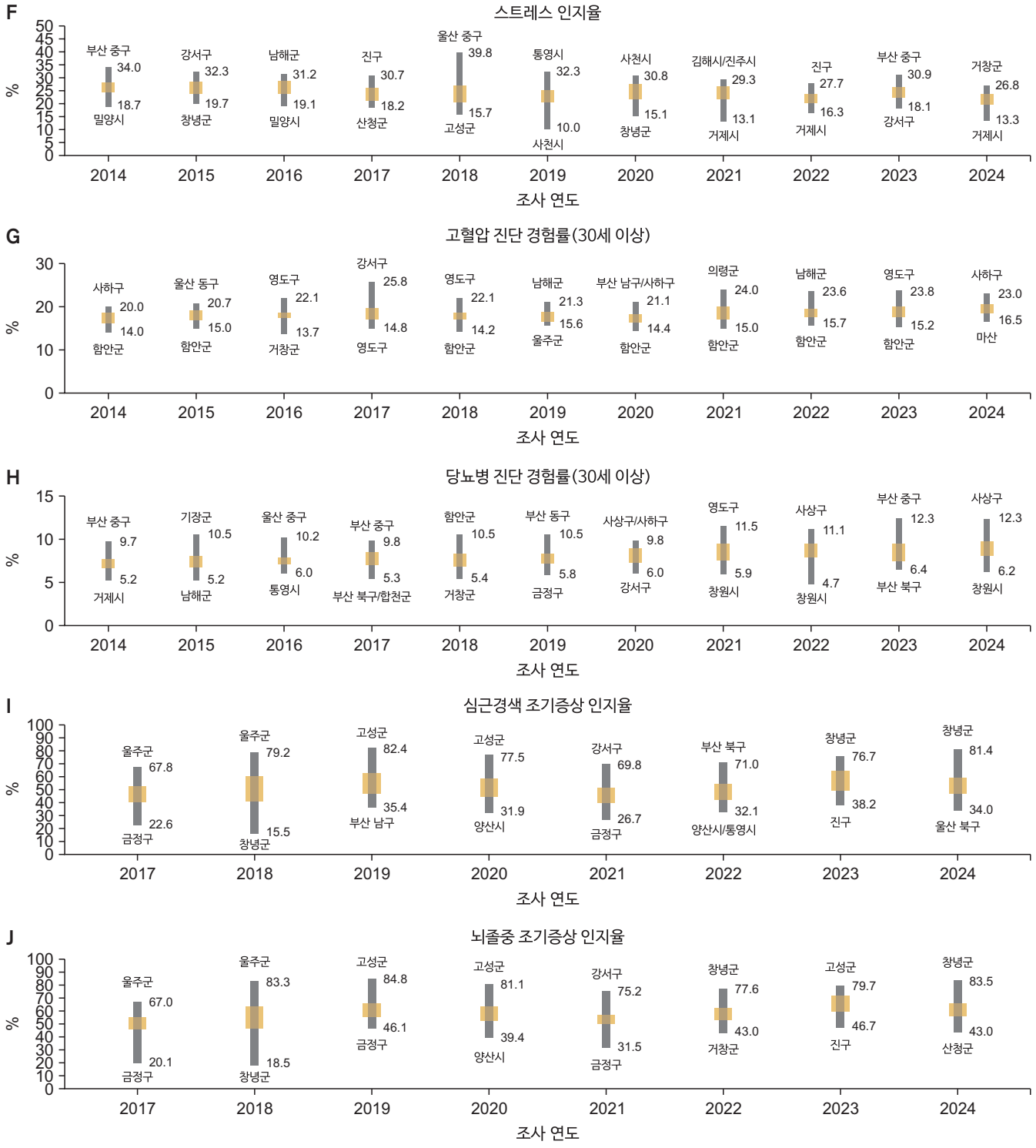


그림 3. 계속

남도 창원시가 6.2%로 가장 낮았다(경남권 내 시 · 군 · 구간 격차 6.1%p) (그림 3H).

7. 건강지식

경남권 시 · 도별 심근경색 조기증상 인지율은 2023년 대비 부산(56.3%), 울산(47.4%), 경상남도(55.2%)에서

2024년에 각각 55.1%, 45.7%, 50.9%로 감소하였고(경남권 내 시 · 도간 격차 9.4%p), 전국(49.7%)과 비교해 울산의 경우 4.0%p가 감소하였다(그림 2I). 2024년 경남권 41개 시 · 군 · 구별 심근경색 조기증상 인지율은 경남 창녕군이 81.4%로 가장 높았고, 울산 북구가 34.0%로 가장 낮은 것으로 나타났으며, 경남권 내 지자체 간 격차가 걷기실천율 다음으로 높았다(경남권 내 시 · 군 · 구간 격차 47.4%p) (그림 3I). 뇌졸중(중풍) 조기증상 인지율은 2023년 대비 부산(63.7%), 울산(60.0%), 경상남도(63.5%)에서 2024년에 각각 61.5%, 55.5%, 58.8%로 감소하였고(경남권 내 시 · 도간 격차 2.7%p), 전국(59.2%)과 비교해 울산, 경상남도가 각각 3.7%p, 0.4%p 낮은 것으로 나타났다(그림 2J).

2024년 경남권 41개 시 · 군 · 구별 뇌졸중(중풍) 조기증상 인지율은 경상남도 창녕군은 83.5%로 가장 높았고, 경상남도 산청군이 43.0%로 가장 낮았다(경남권 내 시 · 군 · 구간 격차 40.5%p) (그림 3J).

논 의

2024년 지역사회건강조사 자료를 이용하여 경남권 지역사회 건강수준을 살펴본 결과, 전년 대비 경남권의 현재흡연율, 남자 현재흡연율, 고위험음주율, 걷기실천율, 중등도 이상 신체활동실천율, 스트레스 인지율의 지표값이 개선된 것으로 나타났다. 그러나 비만율, 고혈압 진단 경험률, 당뇨병 진단 경험률, 심근경색 및 뇌졸중 인지율의 지표값은 악화되어 지역 내 보건사업, 교육 및 홍보 등의 노력들이 필요할 것으로 보여진다.

또한 경남권 지자체의 지역 간 건강격차가 가장 큰 지표는 걷기실천율(2024년 47.6%p), 심근경색 인지율(2024년 47.4%p), 뇌졸중 인지율(2024년 40.5%p)로 지자체 간 지역 격차가 커서 개선이 필요한 것으로 나타났다. 특히, 최근 4년(2021–2024년)간 지역사회건강조사 주요지표와 황금다이아몬드 분석을 통하여 살펴본 결과, '부산'의 경우 월간음주율과 혈압수지인지율, '울산' 지역은 월간음주율, 고위험음주율, 아침식사실천율, '경상남도'는 고위험음주율, 아침식사실천율, 월간음주율, 비만율이 지역의 건강개선이 필요한 지표로 확인되어 향후 각 지역별 보건사업의 우선사업으로 제안할 수 있을 것이다(보충 그림 1; available online).

이번 분석을 통해 지자체의 건강취약지표(비만율, 고혈압 진단 경험률, 당뇨병 진단 경험률, 심근경색 및 뇌졸중 인지율 등)를 개선하기 위해서는 지역의 집중적인 관리가 필요하며, 특히 경상남도는 타 지역에 비해 악성신생물(암), 심장질환, 뇌혈관질환, 알츠하이머, 당뇨병이, 울산은 뇌 · 심장질환이 가장 높은 수준을 보여[2], 이를 개선하기 위해서는 만성질환의 주요 위험이 되는 흡연, 음주, 비만율이 높은 지역을 중심으로 만성질환 예방관리 중재사업 추진이 필요할 것이다. 아울러 65세 이상 노인인구가 차지하는 비율은 부산, 경상남도(각각 21.7%. 21.5%)의 경우 전국(18.7%)보다 높고, 음주, 비만과 같은 건강행태와 관련된 주요지표들이 높아 고령층과 고위험군 대상으로 맞춤형 건강교육과 비만, 고혈압 예방을 위한 생활습관 개선 캠페인이 적극적으로 시행되어야 할 것이다. 이와 함께 경남권 내에서도 광역 시 · 도 단위 및 시 · 군 · 구의 지역 간 건강불평등 해소를 위해 지역 맞춤형 보건정책을 수립하고, 사업의 지속적인 모니터링과 보건사업을 수행한다면 주민들의 삶의 질이 향상될 수 있을 것으로 기대한다. 앞으로 경남권질병대응센터는 지자체 간 지역협력체계를 더욱 공고히 하고, 지역의 건강 취약지표 개선과 지속적인 조사분석을 통해서 지역별 특성에 맞는 맞춤형 보건정책 수립 근거를 마련하여 지원할 것이다.

Declarations

Ethics Statement: Not applicable.

Funding Source: None.

Acknowledgments: None.

Conflict of Interest: The authors have no conflicts of interest to declare.

Author Contributions: Conceptualization: YWK. Data curation: YWK. Project administration: YWK. Resource: YWK. Writing – original draft: YWK. Writing – review & editing: YWK. SJP.

Supplementary Materials

Supplementary data are available online.

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Surveillance Report

Community Health Status in the Gyeongnam Regional Based on the Korea Community Health Survey Data 2024

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ABSTRACT

Objectives: This study aimed to examine health behaviors, chronic diseases, and management status in the Gyeongnam region (Busan, Ulsan, and Gyeongsangnam-do). This investigation was conducted using data from the 2024 Community Health Survey, to identify regional disparities among cities, counties, and districts.

Methods: To analyze health behaviors, chronic disease prevalence, and management status of residents in the Gyeongnam region, we utilized the statistical data published by the Korea Disease Control and Prevention Agency in its "2024 Local Health Statistics at a Glance" report. Representative values were calculated as the medians of data collected from 41 cities, counties, and districts within the Gyeongnam region.

Results: As of 2024, key health indicators such as the overall current smoking rate (17.7%), male current smoking rate (32.3%), walking practice rate (52.6%), moderate-to-high physical activity practice rate (27.6%), annual weight control attempt rate (64.5%), and recognition rate of early symptoms of myocardial infarction and stroke (52.6% and 61.7%, respectively), were found to be favorable for the Gyeongnam region compared to national values. However, increases were observed in the monthly drinking rate (60.3%), obesity rate (34.0%), hypertension diagnosis rate (19.5% for those aged 30 and above), and diabetes diagnosis rate (9.0% for those aged 30 and above) compared to the previous year. These findings suggest the need for intervention through public health education programs and promotional efforts to improve these indicators. Additionally, health indicators that showed the greatest disparities among local governments within the Gyeongnam region were the walking practice rate (47.6 percentage points), myocardial infarction recognition rate (47.4 percentage points), and stroke recognition rate (40.5 percentage points), highlighting the necessity to reduce regional health disparities.

Conclusions: Based on these results, intervention programs should be designed with due consideration for regional characteristics, prioritizing health indicators that require improvement. These findings are expected to serve as foundational materials for developing intervention programs to facilitate chronic disease prevention and management in the Gyeongnam region.

Key words: Gyeongnam Regional Center for Disease Control and Prevention; Chronic disease; Community health survey; Health behavior

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Key messages

① What was known previously?

The Community Health Survey, conducted annually since 2008, produces local health statistics based on the Local Health Act and uses these as evidence to establish and evaluate local health care plans.

② What new information has been presented?

The results of the Community Health Survey, comparing different regions, indicate that the walking practice rate, myocardial infarction awareness rate, and stroke awareness rate show relatively large disparities among local governments within the Gyeongnam region. Therefore, efforts are needed to reduce health inequalities in these indicators.

③ What are the implications of these findings?

To enhance the health of local residents, the Gyeongnam Disease Response Center will continuously strengthen collaboration among local governments and support the establishment of public health programs tailored to the characteristics of each region.

Introduction

In 2023, chronic diseases such as malignant neoplasms (cancer), heart disease, cerebrovascular disease, Alzheimer's disease, diabetes, and hypertensive diseases accounted for approximately 78.1% of all deaths in the Republic of Korea (ROK) and ranked sixth among the top causes of death. The prevalence of chronic diseases has increased with the aging population, leading to escalating medical expenditures. Medical expenditures for chronic diseases (KRW 90 trillion) accounted for 84.5% of all medical expenditures [1]. According to the Statistics Korea in 2023 [2], Gyeongsangnam-do ranked first among 17 cities and provinces (si and do) nationwide in terms of mortality from cancer, cerebrovascular disease, Alzheimer's disease, and diabetes. On the other hand, Ulsan ranked first in ROK for brain and heart disease, indicating a high mortality rate due to chronic diseases (Figure 1) [2]. Furthermore, data from the Ministry of the Interior and Safety in 2024 indicate that the elderly population aged ≥65 years in the Gyeongnam region (Busan, Ulsan, and Gyeongsangnam-do) constituted 21.7% of the total population, which is higher than the national rate of 19.7% [3]. This underscores the need for effective health management strategies, particularly in addressing chronic diseases and health risks, among the elderly population in the region. The prevention and management of chronic diseases necessitate the early recognition, control, and management of precursor diseases, in addition to the improvement of health

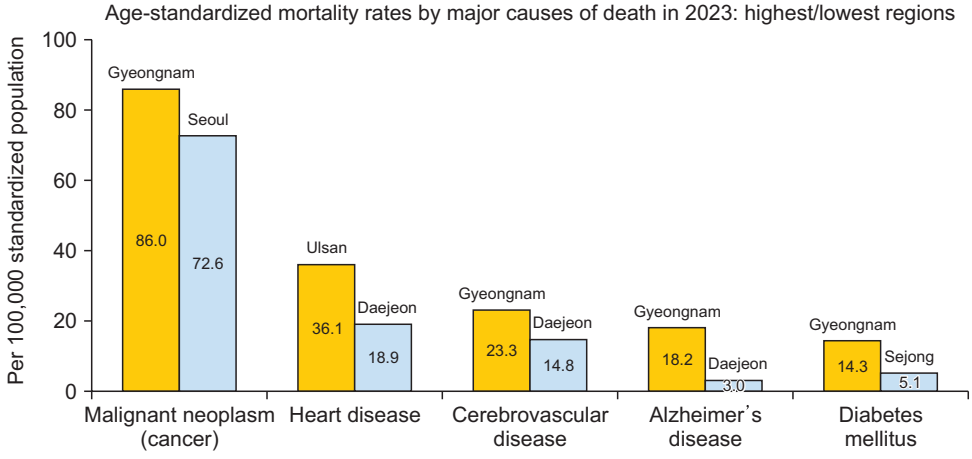


Figure 1. Age-standardized mortality rates by major causes of death in 2023 highest lowest regions
Reused from Statistics Korea (https://kostat.go.kr/board.es?mid=a10301060200&bid=218&act=view&list_no=433106) [2].

risk factors, requiring both individual efforts and integrated linkages at the community and national levels. Therefore, it is necessary to identify the health behaviors and chronic disease management status in the region and promote effective prevention and management interventions tailored to the region. Since 2008, the Korea Disease Control and Prevention Agency has been conducting the Korea Community Health Survey (KCHS) annually to produce health statistics on the health behaviors, chronic disease morbidity, and management levels of local residents. Local governments use the results of the KCHS as evidence for local healthcare planning and evaluation. This study aims to investigate health behaviors, chronic disease morbidity, and management in the Gyeongnam region (Busan, Ulsan, and Gyeongsangnam-do) using the statistical results of the "Local Health Statistics at a Glance" published based on the 2024 KCHS data and to identify trends in the gaps between cities, counties, and districts (si, gun, and gu) in the Gyeongnam region to provide the basic data for the development of chronic disease prevention and management intervention projects.

Methods

In order to identify the health behavior, chronic disease morbidity, and management status of local residents in the Gyeongnam region, the "2024 Local Health Statistics at a Glance" report and statistics were published by the KDCA [4].

For analysis, 10 indicators related to health behaviors and 6 indicators related to morbidity were selected (Table 1). Out of the 16 indicators, 10 were finally selected as they were deemed to be the most salient for local governments to utilize in the execution of health projects. The results for each health indicator were sex- and age-standardized, and the representative value was calculated as the median of 41 cities, counties, and districts in the Gyeongnam region. The trend of the highest (%p) and lowest (%p) values for each of the 3 cities and provinces and 41 cities, counties, and districts in the Gyeongnam region over the last 10 years (2014–2024) was presented in a graph by year, as well as the year-on-year increase (city) and decrease (province) and regional gap (city, county, and district). Furthermore, the Golden Diamond method was employed to prioritize regional health projects by comparing the national indicator value (2024) with the indicator value of the Gyeongnam region for the last 3 years (2021–2023) [5], which was then presented for each region (Busan, Ulsan, and Gyeongsangnam-do).

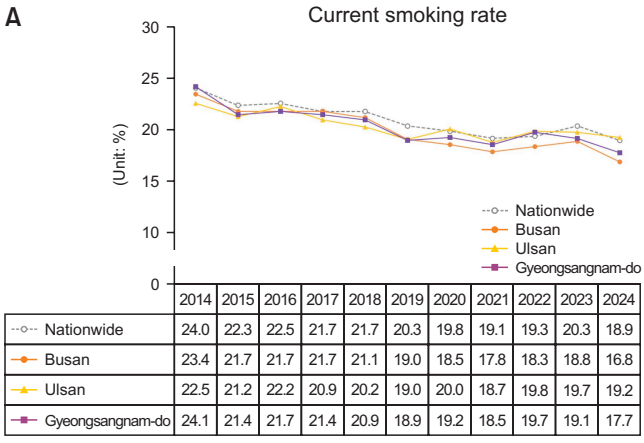
Results

An analysis of 10 key health indicators within the Gyeongnam region (Busan, Ulsan, and Gyeongsangnam-do) revealed that the current smoking rate and the current smoking rate for male in 2024 stood at 17.7% and 32.3%, respectively. This decline represented a 1.6%p decrease and a 3.3%p decrease, respectively, compared to the previous year. The monthly alcohol consumption rate was 60.3%, walking practice rate was 52.6%, moderate physical activity practice rate was 27.6%, and obesity rate was 34.0%, which increased by 2.4%p, 4.1%p, 3.7%p, and 0.9%p, respectively, from the previous year. The hypertension diagnosis rate was 19.5%, and the diabetes diagnosis rate was 9.0%, which increased by 0.5%p and 0.7%p, respectively, from the previous year. In particular, the gap between the local governments in the Gyeongnam region was 47.6%p for the walking practice rate, which represents the largest gap among health indicators in

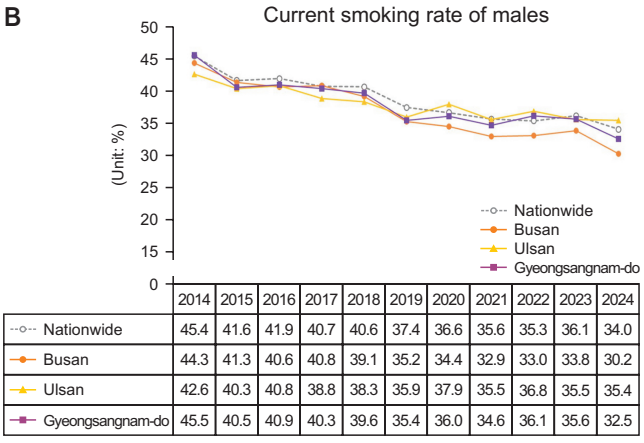
Table 1. Status of health indicators in the Gyeongnam region (2014, 2023, 2024)

Category	Indicators	Busan			Increase/ decrease (2024–2023)	Ulsan			Increase/ decrease (2024–2023)	Gyeongsangnam-do			Increase/ decrease (2024–2023)	Gyeongnam region			Increase/ decrease (2024–2023)	Nationwide[a]			Increase/ decrease (2024–2023)
		2014	2023	2024		2014	2023	2024		2014	2023	2024		2014	2023	2024		2014	2023	2024	
Health behavior	Current smoking rate	23.4	18.8	16.8	▼	22.5	19.7	19.2	▼	24.1	19.1	17.7	▼	23.7	19.3	17.7	▼[b] (-1.6)	24.0	20.3	18.9	▼
	Current smoking rate of male	44.3	33.8	30.2	▼	42.6	35.5	35.4	▼	45.5	35.6	32.5	▼	45.2	35.6	32.3	▼ (-3.3)	45.2	36.1	34.0	▼
	Monthly drinking rate	64.1	59.6	61.4	▲	43.3	61.0	62.4	▲	64.1	57.8	60.0	▲	62.6	57.9	60.3	▲[b] (2.4)	60.9	58.0	58.3	▲
	High-risk drinking rate	15.1	12.6	12.3	▼	14.6	13.6	13.8	▲	16.78	13.9	13.8	▼	14.8	13.6	13.0	▼ (-0.6)	14.6	13.2	12.6	▼
	Walking practice rate	43.7	53.2	60.3	▲	40.7	52.5	54.5	▲	31.2	43.3	48.0	▲	36.1	48.5	52.6	▲ (4.1)	37.5	47.9	49.7	▲
	Moderate-to-vigorous physical activity rate	21.7	24.4	25.8	▲	21.5	27.1	29.2	▲	23.2	25.9	31.8	▲	20.9	23.9	27.6	▲ (3.7)	21.7	25.1	26.6	▲
	Obesity rate (self-reported)	24.5	32.1	33.2	▲	23.5	33.2	34.7	▲	24.0	32.4	33.5	▲	24.3	33.1	34.0	▲ (0.9)	25.4	33.7	34.4	▲
	Annual weight control attempt rate	61.1	69.3	64.3	▼	58.0	70.1	68.3	▼	54.3	65.4	66.6	▲	56.2	67.5	64.5	▼ (-3.0)	57.0	66.9	65.0	▼
	Depression experience rate	5.8	7.7	6.3	▼	5.3	8.6	7.2	▼	4.2	7.6	5.6	▼	5.1	6.6	6.6	- (-)	6.4	7.3	6.2	▼
	Stress awareness rate	26.9	23.9	22.6	▼	25.2	25.8	22.2	▼	25.6	24.5	20.5	▼	26.7	23.9	21.7	▼ (-2.2)	28.0	25.7	23.7	▼
Disease and medical use	Hypertension diagnosis experience rate (≥30 yr)	17.8	19.0	19.5	▲	18.2	18.7	19.3	▲	16.8	18.5	18.7	▲	17.1	19.0	19.5	▲ (0.5)	19.1	20.6	21.1	▲
	Treatment rate for people diagnosed with hypertension (≥30 yr)	87.5	92.9	93.0	▲	87.0	92.8	93.7	▲	88.8	95.0	94.5	▼	87.9	93.9	93.6	▼ (-0.3)	88.1	93.6	93.5	▼
	Diabetes diagnosis experience rate (≥30 yr)	7.1	8.7	9.0	▲	8.1	7.3	8.4	▲	6.7	8.2	8.2	-	7.1	8.3	9.0	▲ (0.7)	7.7	9.1	9.4	▲
	Treatment rate for people diagnosed with diabetes (≥30 yr)	84.8	92.5	94.6	▲	79.5	91.1	93.9	▲	85.9	95.8	95.6	▼	85.4	93.9	94.7	▲ (0.8)	84.5	92.8	93.4	▲
	Awareness early symptoms of myocardial infarction	-	56.3	55.1	▼	-	47.4	45.7	▼	-	55.2	50.9	▼	-	56.5	52.6	▼ (-3.9)	-	52.9	49.7	▼
	Awareness early symptoms of stroke	-	63.7	61.5	▼	-	60.0	55.5	▼	-	63.5	58.8	▼	-	64.9	61.7	▼ (-3.2)	-	62.0	59.2	▼

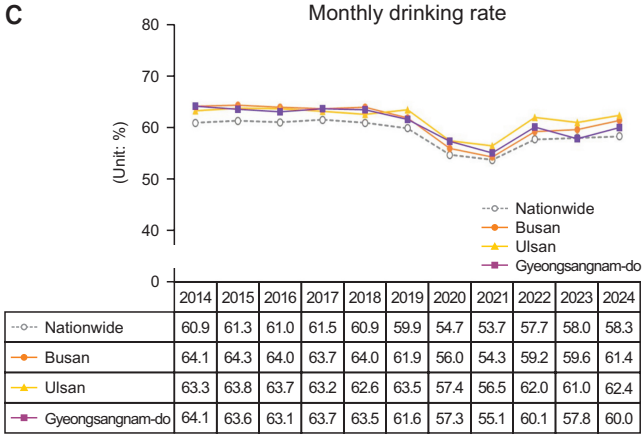
[a] Median among 258 cities, counties, and district. [b] ▼=decrease; ▲=increase.



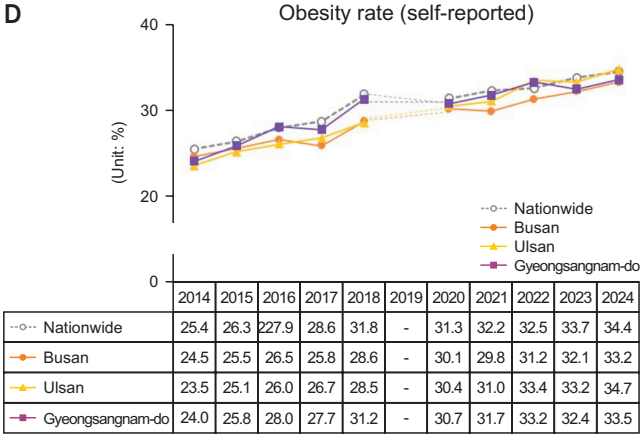
	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Nationwide	24.0	22.3	22.5	21.7	21.7	20.3	19.8	19.1	19.3	20.3	18.9
Busan	23.4	21.7	21.7	21.7	21.1	19.0	18.5	17.8	18.3	18.8	16.8
Ulsan	22.5	21.2	22.2	20.9	20.2	19.0	20.0	18.7	19.8	19.7	19.2
Gyeongsangnam-do	24.1	21.4	21.7	21.4	20.9	18.9	19.2	18.5	19.7	19.1	17.7



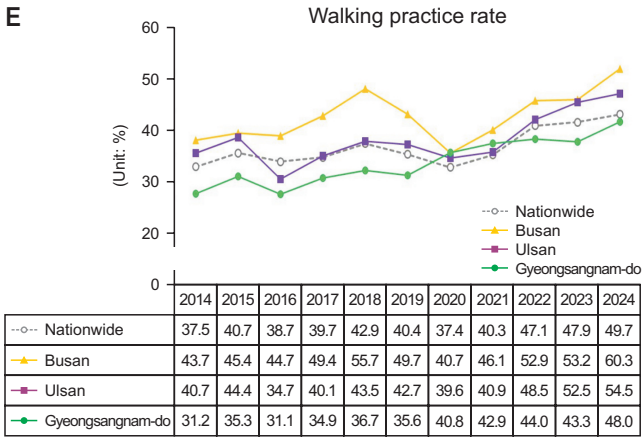
	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Nationwide	45.4	41.6	41.9	40.7	40.6	37.4	36.6	35.6	35.3	36.1	34.0
Busan	44.3	41.3	40.6	40.8	39.1	35.2	34.4	32.9	33.0	33.8	30.2
Ulsan	42.6	40.3	40.8	38.8	38.3	35.9	37.9	35.5	36.8	35.5	35.4
Gyeongsangnam-do	45.5	40.5	40.9	40.3	39.6	35.4	36.0	34.6	36.1	35.6	32.5



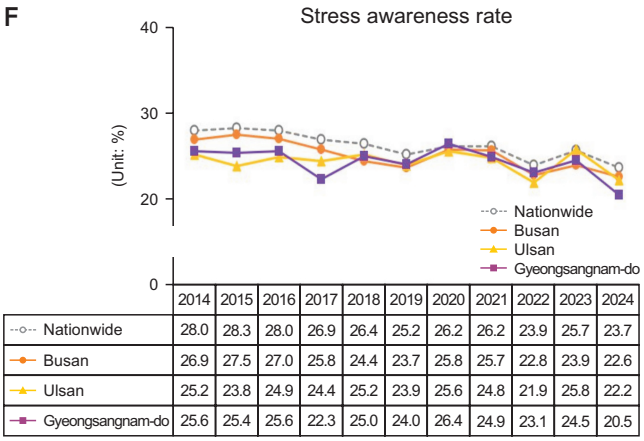
	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Nationwide	60.9	61.3	61.0	61.5	60.9	59.9	54.7	53.7	57.7	58.0	58.3
Busan	64.1	64.3	64.0	63.7	64.0	61.9	56.0	54.3	59.2	59.6	61.4
Ulsan	63.3	63.8	63.7	63.2	62.6	63.5	57.4	56.5	62.0	61.0	62.4
Gyeongsangnam-do	64.1	63.6	63.1	63.7	63.5	61.6	57.3	55.1	60.1	57.8	60.0



	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Nationwide	25.4	26.3	227.9	28.6	31.8	-	31.3	32.2	32.5	33.7	34.4
Busan	24.5	25.5	26.5	25.8	28.6	-	30.1	29.8	31.2	32.1	33.2
Ulsan	23.5	25.1	26.0	26.7	28.5	-	30.4	31.0	33.4	33.2	34.7
Gyeongsangnam-do	24.0	25.8	28.0	27.7	31.2	-	30.7	31.7	33.2	32.4	33.5



	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Nationwide	37.5	40.7	38.7	39.7	42.9	40.4	37.4	40.3	47.1	47.9	49.7
Busan	43.7	45.4	44.7	49.4	55.7	49.7	40.7	46.1	52.9	53.2	60.3
Ulsan	40.7	44.4	34.7	40.1	43.5	42.7	39.6	40.9	48.5	52.5	54.5
Gyeongsangnam-do	31.2	35.3	31.1	34.9	36.7	35.6	40.8	42.9	44.0	43.3	48.0



	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Nationwide	28.0	28.3	28.0	26.9	26.4	25.2	26.2	26.2	23.9	25.7	23.7
Busan	26.9	27.5	27.0	25.8	24.4	23.7	25.8	25.7	22.8	23.9	22.6
Ulsan	25.2	23.8	24.9	24.4	25.2	23.9	25.6	24.8	21.9	25.8	22.2
Gyeongsangnam-do	25.6	25.4	25.6	22.3	25.0	24.0	26.4	24.9	23.1	24.5	20.5

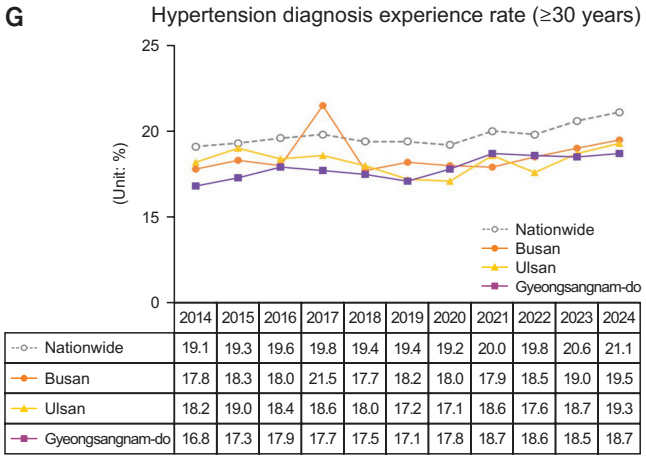
Figure 2. Trend of health indicators in the Gyeongnam region (2014–2024)
(A) Current smoking rate, (B) current smoking rate of males, (C) monthly drinking rate, (D) obesity rate (self-reported), (E) walking practice rate, (F) stress awareness rate, (G) hypertension diagnosis experience rate (≥30 years), (H) diabetes diagnosis experience rate (≥30 years), (I) awareness early symptoms of stroke, (J) awareness early symptoms of myocardial infarction. Indicators I and J have been included since 2017.

the region (Figure 2E).

1. Smoking Rate

Table 1 presents a summary of the key health indicators by city and province (Busan, Ulsan, and Gyeongsangnam-do) in

G



	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Nationwide	19.1	19.3	19.6	19.8	19.4	19.4	19.2	20.0	19.8	20.6	21.1
Busan	17.8	18.3	18.0	21.5	17.7	18.2	18.0	17.9	18.5	19.0	19.5
Ulsan	18.2	19.0	18.4	18.6	18.0	17.2	17.1	18.6	17.6	18.7	19.3
Gyeongsangnam-do	16.8	17.3	17.9	17.7	17.5	17.1	17.8	18.7	18.6	18.5	18.7

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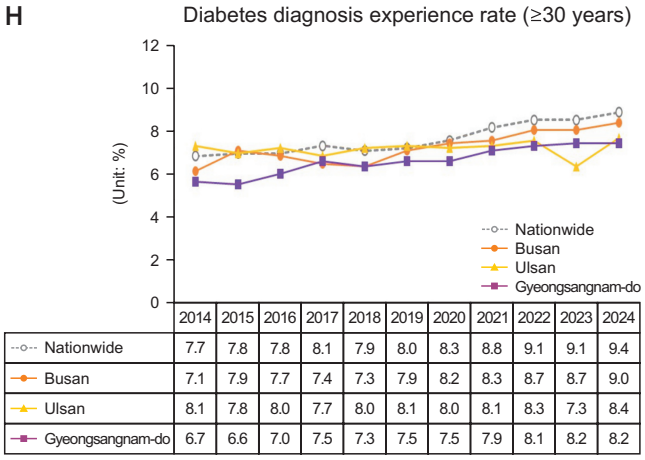
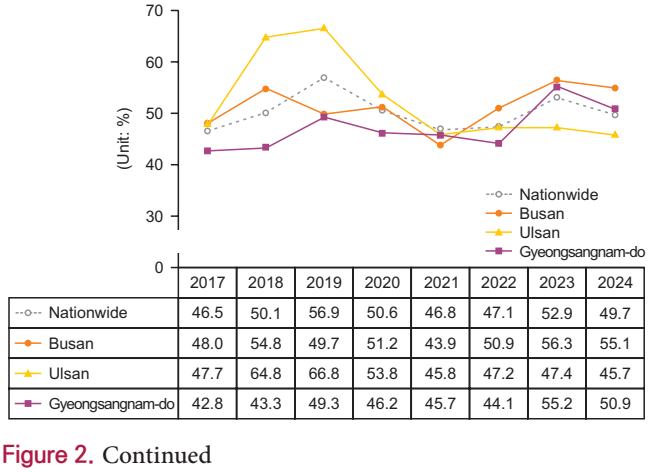


	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Nationwide	7.7	7.8	7.8	8.1	7.9	8.0	8.3	8.8	9.1	9.1	9.4
Busan	7.1	7.9	7.7	7.4	7.3	7.9	8.2	8.3	8.7	8.7	9.0
Ulsan	8.1	7.8	8.0	7.7	8.0	8.1	8.0	8.1	8.3	7.3	8.4
Gyeongsangnam-do	6.7	6.6	7.0	7.5	7.3	7.5	7.5	7.9	8.1	8.2	8.2

I



	2017	2018	2019	2020	2021	2022	2023	2024
Nationwide	46.5	50.1	56.9	50.6	46.8	47.1	52.9	49.7
Busan	48.0	54.8	49.7	51.2	43.9	50.9	56.3	55.1
Ulsan	47.7	64.8	66.8	53.8	45.8	47.2	47.4	45.7
Gyeongsangnam-do	42.8	43.3	49.3	46.2	45.7	44.1	55.2	50.9

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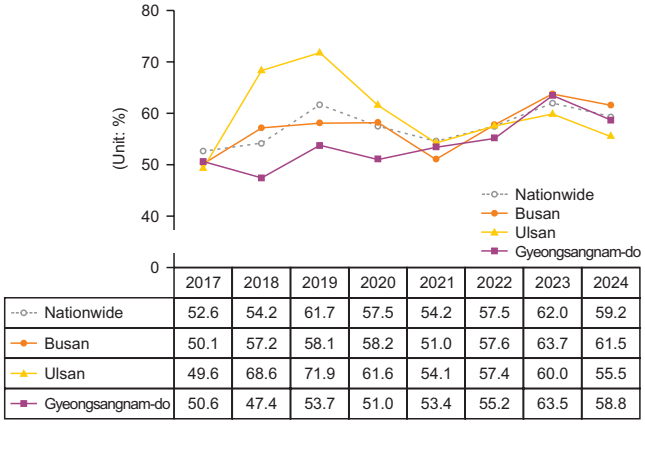

	2017	2018	2019	2020	2021	2022	2023	2024
Nationwide	52.6	54.2	61.7	57.5	54.2	57.5	62.0	59.2
Busan	50.1	57.2	58.1	58.2	51.0	57.6	63.7	61.5
Ulsan	49.6	68.6	71.9	61.6	54.1	57.4	60.0	55.5
Gyeongsangnam-do	50.6	47.4	53.7	51.0	53.4	55.2	63.5	58.8

Figure 2. Continued

the Gyeongnam region. The current smoking rate has been decreasing since 2014, and it has decreased from 18.8% to 16.8% in Busan, from 19.7% to 19.2% in Ulsan, and from 19.1% to 17.7% in Gyeongsangnam-do from 2023 to 2024 (a gap of 2.4%p among cities and provinces in the Gyeongnam region). Compared to the national rate (18.9%), it was 2.1%p and 1.2%p lower in Busan and Gyeongsangnam-do, respectively.

The current smoking rate for male has been decreasing since 2014, and it has decreased from 33.8% to 30.2% in Busan, from 35.5% to 35.4% in Ulsan, and from 35.6% to 32.5% in Gyeongsangnam-do from 2023 to 2024 (a gap of 5.2%p among cities and provinces in the Gyeongnam region). Compared to the national rate (34.0%), it was 3.8%p and 1.5%p lower in Busan and Gyeongsangnam-do, respectively.

In 2024, the current smoking rate and current smoking rate for male in each of the 41 cities, counties, and districts in the Gyeongnam region were the highest in Goseong-gun, Gyeongsangnam-do, at 23.9% and 43.6%, respectively, and the lowest in Hamyang-gun, Gyeongsangnam-do, at 12.3% and 21.5%, respectively (a gap of 22.1%p among cities, counties, and districts in the Gyeongnam region; Figure 3A, B).

2. Alcohol Consumption Rate

The alcohol consumption rate by city and province (Busan, Ulsan, Gyeongsangnam-do) has been decreasing to some extent since 2014. It has increased from 59.6% to 61.4% in

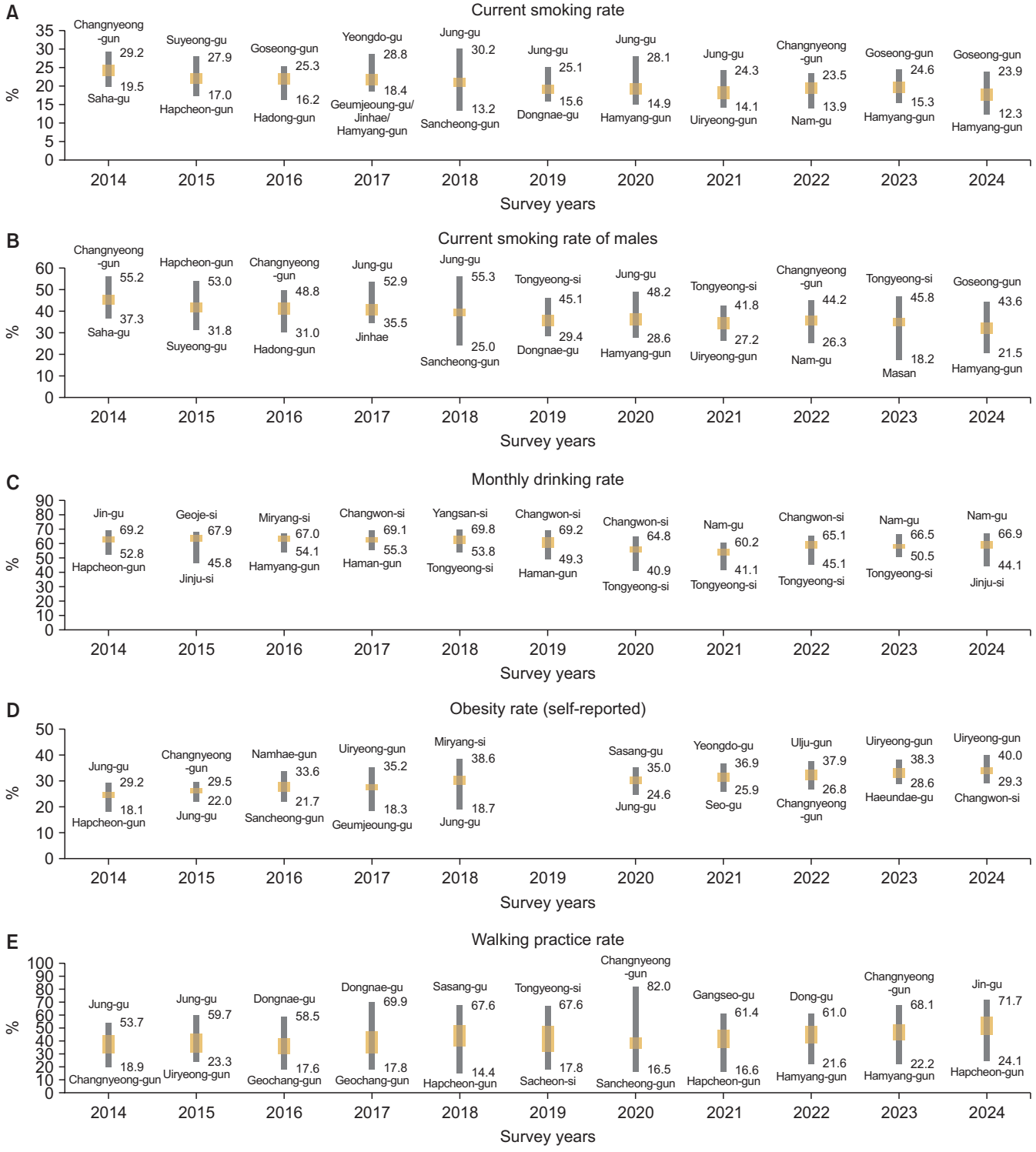

Figure 3. Highest lowest si/gun/gu in the Gyeongnam by health indicators over the past 10 years (2014–2024)

(A) Current smoking rate, (B) current smoking rate of males, (C) monthly drinking rate, (D) obesity rate (self-reported), (E) walking practice rate, (F) stress awareness rate, (G) hypertension diagnosis experience rate (≥30 years), (H) diabetes diagnosis experience rate (≥30 years), (I) awareness early symptoms of stroke, (J) awareness early symptoms of myocardial infarction. Indicators I and J have been included since 2017.

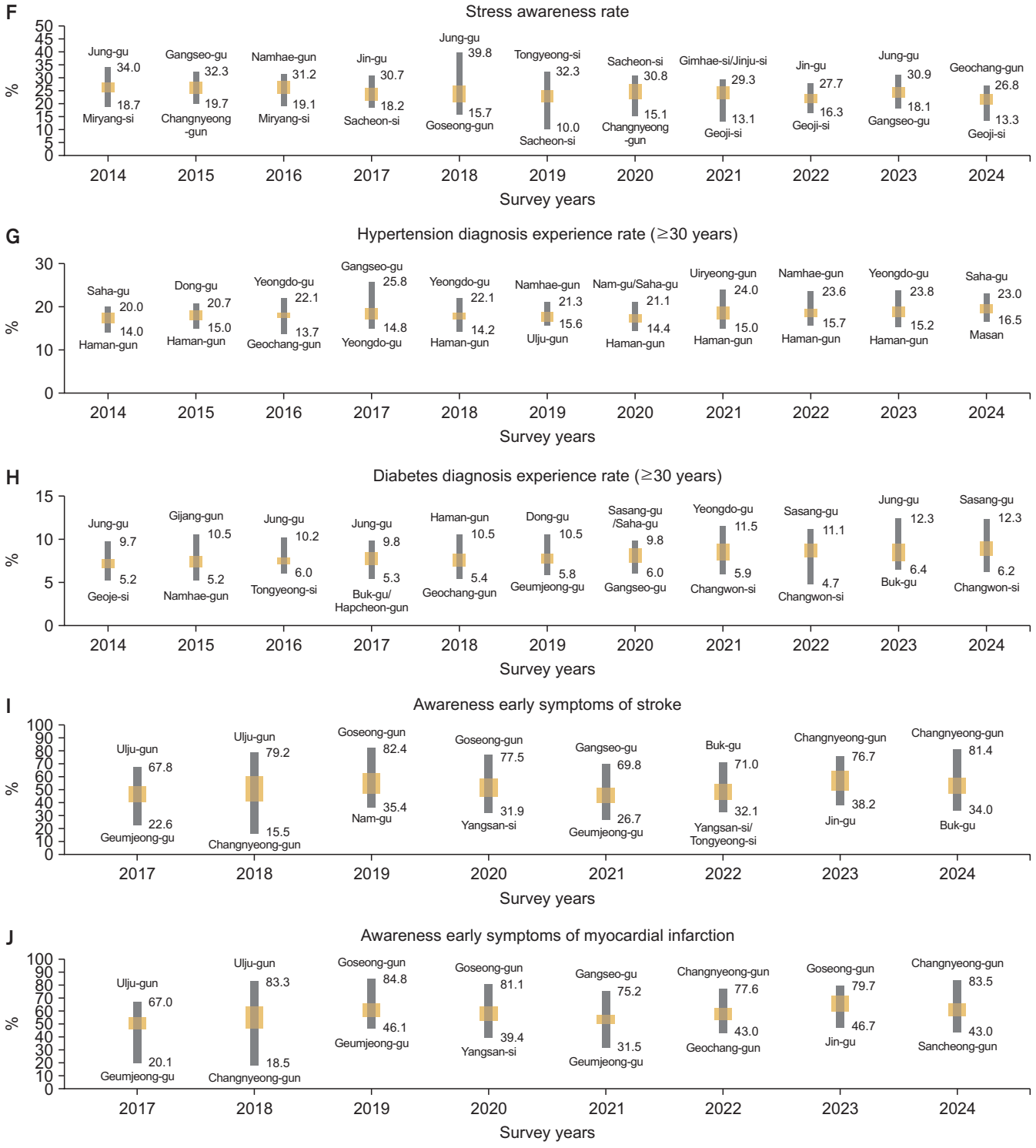

Figure 3. Continued

Busan, from 61.0% to 62.4% in Ulsan, and from 57.8% to 60.0% in Gyeongsangnam-do from 2023 to 2024 (a gap of 2.4%p among cities and provinces in the Gyeongnam region). Compared to the national rate (58.3%), it was 3.1%p, 4.1%p, and 1.7%p lower in Busan, Ulsan, and Gyeongsangnam-do, respectively. In 2024, the monthly alcohol consumption rate

for male, in each of the 41 cities, counties, and districts in the Gyeongnam region was the highest in Nam-gu, Ulsan, at 66.9%, and the lowest in Jinju, Gyeongsangnam-do, at 44.1% (a gap of 22.8%p among cities, counties, and districts in the Gyeongnam region; Figure 3C).

3. Obesity Rate

The obesity rate by city and province (Busan, Ulsan, and Gyeongsangnam-do) has been increasing since 2014. It increased from 32.1% to 33.2% in Busan, from 33.2% to 34.7% in Ulsan, and from 32.4% to 33.5% in Gyeongsangnam-do from 2023 to 2024, resulting in a 1.5%p gap among cities and provinces in the Gyeongnam region. Compared to the national rate (34.4%), it was lower in Busan and Gyeongsangnam-do, and 0.3%p higher in Ulsan (Figure 2D). In 2024, the obesity rate (self-report) in each of the 41 cities, counties, and districts in the Gyeongnam region was the highest in Uiryeong-gun, Gyeongsangnam-do, at 40.0%, and the lowest in Changwon-si, Gyeongsangnam-do, at 29.3% (a gap of 10.7%p among cities, counties, and districts in the Gyeongnam region; Figure 3D).

4. Physical Activity

The walking practice rate by city and province (Busan, Ulsan, and Gyeongsangnam-do) has been increasing since 2014. It has increased from 53.2% to 60.3% in Busan, from 52.5% to 54.5% in Ulsan, and from 43.3% to 48.0% in Gyeongsangnam-do from 2023 to 2024 (a gap of 12.3%p among cities and provinces in the Gyeongnam region). Compared to the national rate (49.7%), it was 10.6%p and 4.8%p higher in Busan and Ulsan, respectively, and 1.7%p lower in Gyeongsangnam-do (Figure 2E). In 2024, the walking practice rate in each of the 41 cities, counties, and districts in the Gyeongnam region was the highest in Jin-gu, Busan, at 71.7%, and the lowest in Hapcheon-gun, Gyeongsangnam-do, at 24.1%, showing the highest gap among local governments in the Gyeongnam region (a gap of 47.6%p among cities, counties, and districts in the Gyeongnam region; Figure 3E).

5. Mental Health

The perceived stress rate by city and province (Busan, Ulsan, and Gyeongsangnam-do) has been decreasing to a certain extent since 2014. It has decreased from 23.9% to 22.6% in Busan, from 25.8% to 22.2% in Ulsan, and from 24.5% to 20.5% in Gyeongsangnam-do from 2023 to 2024 (a gap of 2.1%p among cities and provinces in the Gyeongnam region). Compared to the national rate (25.7%), it was 1.1%p, 1.5%p, and 3.2%p higher in Busan, Ulsan, and Gyeongsangnam-do, respectively (Figure 2F). In 2024, the perceived stress rate in each of the 41 cities, counties, and districts in the Gyeongnam region was the highest in Geochang-gun, Gyeongsangnam-do, at 26.8%, and the lowest in Geoje-si, Gyeongsangnam-do, at 13.3% (a gap of 13.5%p among cities, counties, and districts in the Gyeongnam region; Figure 3F).

6. Morbidity

The hypertension diagnosis rate by city and province (Busan, Ulsan, and Gyeongsangnam-do) has been increasing in some measure since 2014. It has increased from 19.0% to 19.5% in Busan, from 18.7% to 19.3% in Ulsan, and from 18.5% to 18.7% in Gyeongsangnam-do from 2023 to 2024 (a gap of 0.8%p among the cities and provinces in the Gyeongnam region). Compared to the national rate (21.1%), it was lower in the Gyeongnam region (by 1.6%p in Busan, 1.8%p in Ulsan, and 2.4%p in Gyeongsangnam-do; Figure

2G). In 2024, the hypertension diagnosis rate (among those aged ≥30 years) in each of the 41 cities, counties, and districts in the Gyeongnam region was the highest in Sahagu, Busan, at 23.0%, and the lowest in Masan, Gyeongnam region at 16.5% (a gap of 6.5%p among the cities, counties, and districts in the Gyeongnam region; Figure 3G).

The diabetes diagnosis rate by city and province (Busan, Ulsan, and Gyeongsangnam-do) has been increasing to some extent since 2014. It has changed from 8.7% to 9.0% in Busan, from 7.3% to 8.4% in Ulsan, and from 8.2% to 8.2% in Gyeongsangnam-do from 2023 to 2024, increasing except in Gyeongsangnam-do (a gap of 0.8%p among cities and provinces in the Gyeongnam region). Compared to the national rate (9.4%), it was lower in the Gyeongnam region (by 0.4%p in Busan, 1.0%p in Ulsan, and 1.2%p in Gyeongsangnam-do; Figure 2H). In 2024, the diabetes diagnosis rate (among those aged ≥30 years) in each of the 41 cities, counties, and districts in the Gyeongnam region was the highest in Sasang-gu, Busan, at 12.3%, and the lowest in Changwon-si, Gyeongsangnam-do, at 6.2% (a gap of 6.1%p among cities, counties, and districts in the Gyeongnam region; Figure 3H).

7. Health Knowledge

The recognition rate for the early symptoms of myocardial infarction by city and province (Busan, Ulsan, and Gyeongsangnam-do) has been decreasing to a certain extent since 2014. It has decreased from 56.3% to 55.1% in Busan, from 47.4% to 45.7% in Ulsan, and from 55.2% to 50.9% in Gyeongsangnam-do from 2023 to 2024 (a gap of 9.4%p among cities and provinces in the Gyeongnam region). Compared to the national rate (49.7%), it decreased in Ulsan by 4.0%p (Figure 2I). In 2024, the recognition rate for the early symptoms of myocardial infarction in each of the 41 cities, counties, and districts in the Gyeongnam region was the highest in Changnyeong-gun, Gyeongsangnam-do, at 81.4%, and the lowest in Buk-gu, Ulsan, at 34.0%, showing the highest gap among local governments in the Gyeongnam region after the walking practice rate (a gap of 47.4%p among cities, counties, and districts in the Gyeongnam region; Figure 3I). The recognition rate for early symptoms of stroke (cerebrovascular accident; CVA) has decreased from 63.7% to 61.5% in Busan, from 60.0% to 55.5% in Ulsan, and from 63.5% to 58.8% in Gyeongsangnam-do from 2023 to 2024 (a gap of 2.7%p among cities and provinces in the Gyeongnam region). Compared to the national rate (59.2%), it was lower in Ulsan and Gyeongsangnam-do by 3.7%p and 0.4%p, respectively (Figure 2J).

In 2024, the recognition rate for the early symptoms of stroke (CVA) in each of the 41 cities, counties, and districts in the Changnyeong-gun, Gyeongsangnam-do, was at 83.5%, and the lowest rate was in Sancheong-gun, Gyeongsangnam-do, at 43.0% (a gap of 40.5%p among the cities, counties, and districts in the Gyeongnam region; Figure 3J).

Discussion

An examination of the community health level in the Gyeongnam region, as indicated by the 2024 KCHS data, revealed year-on-year improvements in several key indicators, such as the current smoking rate, current smoking rate for male, high-risk alcohol consumption rate, walking practice rate, moderate physical activity rate, and perceived stress rate. However, indicators, such as obesity rate, hypertension diagnosis rate, diabetes diagnosis rate, and recognition rates of

myocardial infarction and stroke have deteriorated, suggesting the need for local health projects, education, and outreach efforts.

Furthermore, the indicators with the largest health gap among local governments in the Gyeongnam region were the walking practice rate (47.6%p in 2024), recognition rate for myocardial infarction (47.4%p in 2024), and recognition rate for stroke (40.5%p in 2024), requiring improvement due to the large regional gap among local governments. In particular, an analysis using the key indicators of KCHS and the Golden Diamond method for the last 4 years (from 2021 to 2024) showed that the monthly alcohol consumption rate and blood pressure recognition rate were identified as the indicators requiring improvement in Busan, along with the monthly alcohol consumption rate, high-risk alcohol consumption rate, and breakfast consumption rate in Ulsan, and the high-risk alcohol consumption rate, breakfast consumption rate, monthly alcohol consumption rate, and obesity rate in Gyeongsangnam-do. Such findings may help inform the selection of priority tasks for local health projects (Supplementary Figure 1; available online).

The analysis indicates that intensive local management is necessary to enhance the health vulnerability indicators of the local governments (e.g., obesity rate, hypertension diagnosis rate, diabetes diagnosis rate, and recognition rates for myocardial infarction and stroke). In particular, Gyeongsangnam-do, with the highest levels of cancer, heart disease, cerebrovascular disease, Alzheimer's disease, and diabetes, and Ulsan with the highest levels of brain and heart disease compared to other regions [2], may require the promotion of chronic disease prevention and management intervention projects centered on areas with high smoking, drinking, and obesity rates, which are major risks for chronic diseases. The proportion of the elderly population aged ≥65 years is higher in Busan and Gyeongsangnam-do (21.7% and 21.5%, respectively) than the national average (18.7%); additionally, the key indicators related to health behaviors, such as alcohol consumption and obesity are high, suggesting the need to actively implement tailored health education and lifestyle improvement campaigns to prevent obesity and hypertension in the elderly and high-risk groups. The establishment of health policies tailored to the region and continuous monitoring and implementation of health projects to reduce the health gap among cities and provinces, as well as cities, counties, and districts in the Gyeongnam region, is expected to contribute to the improvement in the quality of life of local residents. In the future, the Gyeongnam Regional Center for Disease Control and Prevention will further strengthen the regional cooperation system between local governments, improve local health vulnerability indicators, and support the establishment of health policies tailored to regional characteristics through continuous surveys and analyses.

Declarations

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Conflict of Interest: The authors have no conflicts of interest to declare.

Author Contributions: Conceptualization: YWK. Data curation: YWK. Project administration: YWK. Resource: YWK. Writing − original draft: YWK. Writing − review & editing: YWK. SJP.

Supplementary Materials

Supplementary data are available online.

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