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Non facciamoli andar via

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GIORNATA MONDIALE DEI DIRITTI UMANI

Nuova governance e vecchie logiche

l'editoriale di **Teresa Rea**

Con il nuovo anno la Campania ha anche una nuova governance della Salute. Come ampiamente riportato in questa edizione del giornale, sarà lo stesso Presidente Roberto Fico, da pochi mesi neo governatore, il massimo responsabile della Sanità regionale. Un modello di gestione già visto. E che non ha portato buoni frutti. Sia sul piano delle relazioni istituzionali, ma anche sulla stessa goverance. L'elenco dei mali e dei nodi da sciogliere per portare la sanità regionale fuori dai ritardi strutturali che la rilegano a fanalino di coda in Italia su tanti parametri lo riportiamo nella lettera aperta che abbiamo già inviato al presidente Fico e di cui diamo conto sulle colonne di questo giornale. Resta il fatto che ancora una volta la Regione Campania rappresenta un'anomalia amministrativa in Italia: è l'unica a non aver istituito un assessorato alla sanità. Ancora una volta, cambia il manovratore ma la strada percorsa è la stessa. Si decide di accentrare la delicata delega alla salute direttamente nelle mani del Presidente della Giunta Regionale. Una scelta politica che, con il tempo, ha mostrato i suoi limiti nell'amministrazione De Luca, riflettendosi pesantemente sull'organizzazione e sull' efficienza del sistema sanitario regionale. Un vuoto decisionale si traduce inevitabilmente in ritardi e in disservizi. E non vorremmo che accadesse anche questa volta.

L'assenza di una figura istituzionale specifica dedicata alla sanità ha significato, nei fatti in questi ultimi dieci anni un vuoto strategico e operativo. Nessuno che possa occuparsi a tempo pieno della gestione dei rapporti con le Asl, della pianificazione dei servizi territoriali, della programmazione delle risorse umane e tecnologiche, dell'ascolto costante delle esigenze di operatori e cittadini. Questo squilibrio si riflette in maniera evidente su tre fronti fondamentali per la tutela della salute pubblica: l'aspettativa di vita, la carenza di infermieri, medici e oss nelle strutture pubbliche e sulla migrazione sanitaria. I dati parlano chiaro. Siamo ultimi in Italia per aspettativa di vita. Le stime Istat dimostrano che, a fronte di un'età media di 83,1 anni a livello nazionale (+0,5 anni rispetto al 2022), si registrano notevoli differenze regionali: dagli 84,6 anni della Provincia autonoma di Trento agli 81,4 anni della Campania, con una differenza di ben 3,2 anni. I pronto soccorso, ma anche strutture ospedaliere e reparti restano sovraccarichi e carenti di personale, con tempi di attesa incompatibili con la reale tutela della salute e una cronica assenza di posti letto. Supera, in fine, i 280 milioni di euro la voragine finanziaria causata dal continuo ricorso a cure fuori regione. Grava come un macigno sui conti della sanità campana e resta uno dei punti critici e pregiudizievoli rispetto all'uscita della Regione dal piano di rientro. I dati del ministero della Salute e di Agenas lo confermano e certificano il volume di spesa oltre 280 milioni l'anno, denaro pubblico che finisce nelle casse delle Regioni del Nord.

Serve allora un cambio di passo. La Campania non può più permettersi il lusso dell'autogestione verticistica. È tempo di restituire alla sanità la centralità che merita, anche sul piano politico. Se, come lo stesso presidente Fico ha annunciato, si vuole rispondere alle reali esigenze dei cittadini e non alle istanze della politica. Al presidente Fico ribadiamo la necessità di considerare la sanità come bene comune. Cioè, tenere al centro del processo decisionale e organizzativo della salute i nuovi e aumentati bisogni delle persone, Anche perché, dato non marginale tra gli altri, in Campania, secondo l'ultimo rapporto della Fondazione Gimbe, il settimo, sempre più cittadini rinunciano alle cure mediche, soprattutto per motivi economici. Il costo delle visite specialistiche e degli accertamenti è diventato insostenibile per molte famiglie, costringendole a rinunciare a controlli preventivi essenziali. Restano pertanto inalterate fiducia e stima verso il nuovo inquilino di Palazzo Santa Lucia, con la speranza che, viste le premesse, non vengano tradite.

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in questo numero

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In primo piano

GIURANO 600 NUOVI INFERMIERI

Non facciamoli andar via

Appello dell'Opi Napoli alle istituzioni - Alla Stazione Marittima la Sala Galatea era gremita. Molto apprezzati gli interventi del Presidente del Consiglio regionale della Campania, Massimiliano Manfredi, del Rettore della Federico II, Matteo Lorito, dell'assessore alla Salute del Comune di Napoli, Vincenzo Santagada. In collegamento da Roma il benvenuto della Presidente nazionale Fnopi, Barbara Mangiacavalli.

di **Rosario Scotto di Vetta**

Sono in tanti, più di seicento. Tutti con un solo sogno: lavorare nella terra d'origine. E Teresa Rea, presidente dell'Opi Napoli, sembra aver intercettato i loro sogni, le aspirazioni più segrete. Perché la sua relazione, più che altro un indirizzo di saluto, una dotta accoglienza per la folta platea che affolla la Sala Galatea della Stazione Marittima di Napoli, parte proprio da quel sogno.

E appellandosi ai rappresentanti delle istituzioni presenti e assenti dice chiaro: "Sono il nostro futuro. Non facciamoli andar via". La Sala è gremita, si contano circa 3000 presenze, tra nuovi infermieri, parenti, amici, giornalisti e addetti ai lavori del comparto salute. E si fanno sentire tutti, soprattutto i giovani infermieri e le loro famiglie, quando la Presidente Rea pronuncia quelle parole. Perché il problema più sentito dalle nuove generazioni d'infermieri è proprio quello: evitare di fare valige per cercare occupazione. E non è un caso se seguendo questo schema la Rea incalza soprattutto il neo Presidente della Giunta Regionale Roberto Fico, assente per altri impegni istituzionali: "Qui, caro Presidente Fico, ci sono le energie che servono al nostro sistema sanitario. Non facciamo andare via questi ragazzi. Ne abbiamo assolutamente bisogno. Ne hanno bisogno i cittadini della Campania con i quali da sempre noi infermieri abbiamo siglato un'alleanza perché la nostra professione è un insieme tra umanità e scienza. Perché anche i cittadini, come tanti nostri colleghi che lavorano in ospedale in condizioni disumane, sono stressati da un sistema sanitario che denuncia circa 18mila vuoti nelle piante organiche per carenza d'infermieri, soprattutto, ma anche di medici, e di oss". Caro presidente Fico, nutriamo molta speranza nel tuo mandato.

Ma ti vogliamo ricordare - ha detto infine la prof Teresa Rea - che la tutela del diritto alla salute non si regge senza infermieri". "Investire in infermieristica non è un costo, per cui ci aspettiamo più valorizzazione economica, carriere e competenze specialistiche fino ad ora tenute a freno, più dirigenza infermieristica ancora troppo compressa, e poi impegni precisi sul tema della sicurezza e degli organici.

Barbara Mangiacavalli - Il valore dell' accoglienza ordinistica è stato rafforzato dalla presenza in video collegamento della presidente della FNOPI, che ha dato alla giornata un segno di unità nazionale: "Entrare oggi nella professione significa far parte di una comunità che accompagna, tutela e orienta, soprattutto in una fase storica in cui l'evoluzione formativa, i percorsi di crescita e la riconoscibilità del ruolo infermieristico sono temi decisivi". È un messaggio, una promessa semplice ma sostanziale rivolta ai nuovi colleghi: non sentirsi mai soli nel cammino professionale. Olimpia Mazzarella, in rappresentanza dei direttori delle attività professionalizzanti, ha richiamato il valore del nuovo Codice deontologico e il peso della formazione continua e della ricerca. . Accanto alla dimensione accademica, è emersa quella organizzativa e di sviluppo di carriera. Aniello Lanzuise, direttore dell'UOC del Servizio Integrato delle Professioni Sanitarie dell' Azienda dei Colli e vicepresidente Opi Napoli è intervenendo anche a nome di altri dirigenti presenti, offrendo ai nuovi infermieri un messaggio netto: il traguardo non è soltanto "diventare", ma "diventare nel tempo", con possibilità reali di evoluzione, inclusa la dimensione manageriale e dirigenziale. Un invito a leggere la professione come percorso, non come ruolo statico, e a mantenere la centralità del paziente come misura della qualità, oltre ogni gesto tecnico.

Il giuramento 2026 ha scelto anche di attraversare alcuni passaggi di memoria e riconoscimento che hanno inciso profondamente sul clima emotivo della sala. Il saluto di Anna Maria Iannicelli ad Antonio Penna ha portato nel cuore della cerimonia il registro della gratitudine e dell' umanità professionale: parole che non hanno "interrotto" il rito, ma lo hanno reso più vero, ricordando quanto l'identità infermieristica si costruisca anche nella condivisione quotidiana, nelle relazioni di lavoro, nella discrezione di chi lascia un segno senza clamore.

In primo piano

Manfredi e Santagada: “Più territorio” Lorito: “Un’Academy post laurea”

Ad ascoltare l’accorato appello della Rea, in sala c'erano comunque pezzi da novanta: Il presidente del Consiglio regionale della Campania Massimiliano Manfredi, il Rettore della Federico ll Matteo Lorito, l'assessore comunale alla salute Vincenzo Santagada. E tanti altri addetti ai lavori E ciascuno per proprio conto si è sentito chiamato in causa.

Massimiliano Manfredi - “La professione infermieristica e' uno dei pilastri della nostra sanità. Gli infermieri e le infermiere sono coloro che ascoltano, assistono, curano non solo il corpo ma anche l' anima delle persone,e delle loro famiglie, e che, proprio perché in prima linea, spesso sono ingiustamente vittime di aggressioni. Siete un grande valore per la nostra sanità". "Come Istituzioni regionali – è l'impegno assunto dal Presidente – ci impegneremo per rendere questa professione più attrattiva, affinché l' impegno degli infermieri sia riconoscono e valorizzato. Sarà fondamentale rafforzare la medicina territoriale e concentrare l'attenzione sul sistema dell' emergenza che richiede anche maggiori livelli retributivi per il personale sanitario che lavora al suo servizio".

Vincenzo Santagada - Nello stesso solco si sono inserite le parole dell’assessore alla Salute del Comune di Napoli e presidente dell'Ordine dei Farmacisti, Vincenzo Santagada. “La sfida enorme che ci aspetta è ricostruire un modello di sanità che faccia perno sulla prevenzione e dia risposte sul territorio. Due strade che oltrea dare risposte sul piano della salute dei nostri cittadini possono e devono dare risposte di occupazione ai giovani infermieri”.

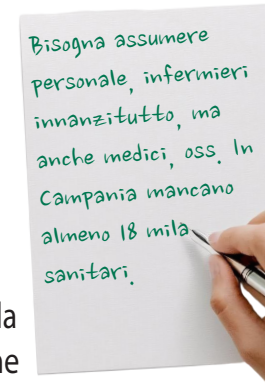
Matteo Lorito - Il rettore dell’Università degli Studi di Napoli Federico II, Matteo Lorito, sollecitato in apertura dalla presidente Rea sulla necessità di rafforzare la formazione universitaria con più docenti, coordinatori di tirocinio, tutor didattici e clinici, ha confermato una vicinanza non solo simbolica, richiamando l’importanza della formazione come investimento strategico . e sottolineando, in particolare, la necessità di rafforzare i percorsi post-base che accompagnano lo sviluppo professionale. In questa direzione va letta la sollecitazione lanciata proprio nel corso della giornata: “Sto pensando alla creazione di un'Academy post laurea. Noi come il Policlinico abbiamo un gran bisogno della vostra passione. E abbiamo sperimentato il modello positivo del Polo universitario di Scampia. Interamente dedicato alla sanità”.

Giuro Giuro Giuro Giuro Giuro

Politica sanitaria

L'OPI NAPOLI SCRIVE AL PRESIDENTE FICO

«Servono più infermieri e più attenzione al territorio»



La presidente dell'Ordine di Napoli spiega i contenuti di una lettera aperta al neo Governatore della Campania. Si tratta di una riflessione sullo stato di salute della sanità e sui bisogni dei cittadini che pubblichiamo nella integralmente nella pagina successiva. «Colmare i buchi negli organici degli ospedali, superare le liste d'attesa e più attenzione alla prevenzione».

di **Nina De Martino**

«Al presidente della Regione Roberto Fico chiediamo di lavorare per uscire al più presto dal piano di rientro della sanità, in modo da poter assumere giovani professionisti che possano alleggerire il carico di lavoro per gli infermieri che già lavorano, ma anche di operare per ridurre le liste di attesa e rafforzare la prevenzione e l'assistenza territoriale». Sintetizza in poco più di venti righe Teresa Rea, presidente dell'Ordine delle professioni infermieristiche di Napoli il senso della lettera aperta indirizzata al neo governatore Roberto Fico. La prof poi aggiunge: «Mi piace ricordare che agli infermieri, che lavorano sia in ambito ospedaliero che territoriale, è affidata la gestione della cura, quindi sono i professionisti della salute più vicini ai cittadini. Vorremmo allora che si faccia sinergia perché i problemi della sanità richiedono un approccio corale e, solo lavorando insieme, possiamo dare risposte appropriate ai cittadini.

Da dove si parte? «Innanzitutto, visti i risultati positivi raggiunti negli ultimi anni, bisogna esercitare una pressione sul governo nazionale per una rapida uscita dal piano di rientro. Questo darebbe la possibilità di assumere i professionisti che ci servono per colmare le carenze di organico, che si riverberano sia sulla qualità dell' assistenza ai cittadini che sul lavoro dei professionisti della salute, costretti a doppi turni massacranti, e addirittura a sopperire alla mancanza del personale di supporto, il che comporta una dequalificazione della professione infermieristica».

Poi? «Segnaliamo il problema delle liste d'attesa e degli screening oncologici. Riteniamo necessario investire nel rafforzamento della rete territoriale di assistenza e nella valorizzazione professionale. Da pochi giorni sono partiti i primi corsi per infermieri di famiglia e di comunità: noi li formiamo, però poi dovranno assumere il ruolo per cui hanno maturato competenze. Avere infermieri estremamente preparati nell'ambito territoriale potrebbe determinare una svolta: si potrebbe decongestionare la pressione sui pronto soccorso, favorendo la presa in carico di tanti cittadini fragili, anziani che potranno essere curati a domicilio. In questi anni gli infermieri sono cresciuti professionalmente: possono lavorare in autonomia, ma anche in collaborazione con i medici di medicina generale e i pediatri di libera scelta con dei protocolli condivisi, per cui è necessario valorizzarli».

Sanità bene comune: lettera aperta degli infermieri al neo Governatore

Abbiamo molto apprezzato le prime parole pronunciate da Lei Presidente nella veste di massima autorità regionale per la sanità. Abbiamo particolarmente gradito il passaggio ove si sottolinea la Sua volontà di "tenere la politica fuori dagli ospedali"; e poi di "dare avvio ad un nuovo piano ospedaliero" più consono alle reali esigenze dei cittadini e di "premiare il merito".
Noi infermieri siamo in perfetta sintonia con queste premesse, perché crediamo in una sanità come bene comune. Nella quale il cittadino è al centro dell'intero processo di cura e di assistenza. Nondimeno però, egregio Presidente desideriamo sottoporLe alcuni punti per noi dirimenti che riteniamo siano essenziali per risolvere alcune gravi'criticità che tutt'ora affliggono la sanità campana. Punti che, quando Lei riterrà, desideriamo illustrarLe da vicino.

1) Riteniamo sia maturo il momento per esercitare una forte azione sul Governo nazionale per una rapida uscita dal piano di rientro. Una premessa essenziale per porre rimedio alla grave carenza di personale nel Servizio sanitario regionale, che incide negativamente sulla qualità dei servizi erogati, sull'abbattimento delle liste di attesa e sul rispetto dei tempi di erogazione delle prestazioni sanitarie, oltre che sulle condizioni di lavoro del personale in servizio.
2) Accorciare liste d'attesa e screening oncologici si può dando contemporaneamente impulso ai processi di prevenzione portando la cultura di corretti stili di vita e della cura della salute anche nelle scuole. Processi educativi indispensabili per il contenimento nel prossimo futuro di patologie complesse, costose per le casse pubbliche e per le tasche dei cittadini.
3) Investire in sanità pubblica per difendere i fragili di salute e le fragilità sociali: in Italia quasi sei milioni di cittadini (fonte Gimbe) rinuncia alle cure per difficoltà nel pagare le prestazioni sanitarie. Di questi (fonte Ministero Salute) il 20 per cento è in Campania.
4) In Campania manca quasi del tutto una Rete territoriale di assistenza; vale a dire ospedali e Case di comunità, infermiere di famiglia. Una sanità di prossimità più vicina ai bisogni dei cittadini come in altre regioni già esiste. Una sanità più vicina alla gente alle persone fragili e agli anziani; anche per evitare accessi impropri ai P.S. di ospedali sempre più affollati e congestionati anche da codici bianchi e verdi risolvibili sul territorio. Per fare questo bisogna assumere personale, infermieri innanzitutto, ma anche medici, oss. In Campania mancano almeno 18 mila sanitari. Questo grande piano di assunzioni potrebbe anche dare posti di lavoro e trattenere giovani che oggi emigrano alla ricerca di posti di lavoro.
5) Infine Presidente, riteniamo non più rinviabile quella valorizzazione e crescita professionale degli infermieri che altrove è già realtà. Parliamo del riconoscimento del loro percorso formativo universitario, delle loro qualità professionali e dell'autonomia necessaria a garantire servizi e assistenza all'altezza di un Servizio sanitario universalistico ed equo. Riteniamo che il ricorso al precariato e alle soluzioni emergenziali per quanto riguarda la carenza di organici sia da ritenersi definitivamente finito. Chiediamo da Lei una nuova governance della sanità e nuovo impulso al sistema sanitario, perché cresca intorno alle persone; che tenga conto del merito e di quanto la professione infermieristica sia decisiva nel sistema salute regionale.

Gli infermieri sono professionisti da anni in attesa di una nuova organizzazione del lavoro che riconosca l'alto livello di professionalità ormai raggiunto, cancellando le attuali difformità che non consentono spesso di far gestire nel modo più corretto e meritocratico il personale nelle aziende pubbliche e private accreditate.

Politica sanitaria

Personale, liste d'attesa e fondi. Ecco

Dal piano di rientro al riordino dei pronto soccorso e dell'assistenza territoriale: tutti i nodi che il president
tenere per sé la delega alla sanità. Con la nuova giunta entrano in funzione sedici nuove case di comunità

C'è una linea di continuità tra il vecchio e il nuovo. Fico, cosi come De luca per dieci anni, ha avocato a sé la delega della Sanità. Troppi i ritardi e le lacune da colmare per affidarla ad altri. E troppo potere da cedere per un assessorato che da solo vale l'ottanta per cento del bilancio regionale. Il neo governatore ha fin qui lasciato intravvedere solo alcune indicazioni di massima sulla sua strategia per portare la sanità campana in linea con i parametri nazionali. Vediamo punto per punto le cose principali da fare.

Il personale - Il primo scoglio è la carenza di personale: il Servizio sanitario campano viaggia da almeno dieci anni con un saldo negativo, rispetto agli standard, dalle 10 alle 18 mila unità in meno del dovuto. Circa 2mila sono medici e il resto è tra infermieri (l'80%) dirigenza sanitaria, tecnici, personale della riabilitazione, Oss ecc.). Carenze acute che impediscono la riapertura di alcuni pronto soccorso storici come il San Giovanni Bosco e rendono affannose la copertura dei turni in molte unità specialistiche e nelle prime linee. Uno scoglio reso impervio anche dai paletti del piano di rientro che limitano la dotazione a quella del 2004 meno l'1,4%. C'è da fare i conti anche con la disponibilità limitata di camici bianchi da reclutare nei concorsi nelle aree critiche - chirurgia, emergenza e urgenza, anestesiologia e rianimazione, radiologia ma anche ortopedia, ginecologia - che scontano un elevato rischio clinico e gratificazioni economiche inadeguate. A soffrire, da un paio di anni, è anche l'area della medicina di famiglia. In difficoltà soprattutto le aree interne disagiate, le isole e i quartieri periferici. Sul piano generale la dotazione di personale per 10mila abitanti (compreso il privato accreditato) è in Campania tra i più bassi del paese, quasi la metà dello standard dell'Emilia Romagna con l'incognita incombente di come popolare le strutture previste dal Pnrr (Case e Ospedali di Comunità).

Fondi - Il sottofinanziamento, rispetto alla media delle Regioni, è ancora un nodo irrisolto per la sanità campana. Nonostante i recuperi e il parziale riequilibrio ottenuto negli ultimi anni (circa 150 milioni in più) la Campania resta ultima in Italia per quota procapite. In soldoni mancano all'appello circa 180 milioni. Storicamente i criteri di riparto del fondo nazionale, basati sul solo criterio di pesatura per età anagrafica, hanno penalizzato le regioni del Sud relativamente più giovani, come appunto la Campania, che sono anche quelle a maggiore deprivazione socio-economica ed a più elevati tassi di mortalità precoce. Assegnare oggi solo lo 0,75% del fondo nazio-

la cura Fico

e deve sciogliere dopo aver deciso di
a.

nale all'indice di deprivazione sociale resta troppo poco per bilanciare le differenze. E poi resta l'uscita dal piano di rientro fin qui negata dal governo Meloni all'ex governatore De Luca. Dopo la fumata nera di inizio agosto 2025 del ministero della Salute nonostante i conti in ordine da 12 anni e l'adempienza sui Livelli di assistenza - è ancorato alle insufficienze sugli screening e il numero di ricoveri di anziani fragili nelle Rsa. Una partita cruciale per il presidente Fico: il primo effetto del superamento dei vincoli sarebbe la caduta dei tetti di spesa su personale e accreditati. «Ci sto lavorando con il ministero della Salute, - informa Fico - speriamo di ottenere questo risultato prima possibile. Ci permetterebbe di rafforzare la nostra sanità pubblica e guardare con maggiore sicurezza al futuro. Questo è solo un primo tassello ma dobbiamo ancora migliorare in tanti settori».

Aspettativa di vita – Sulla speranza di vita alla nascita (forse l'indicatore più importante per misurare il grado di salute di una comunità) si misurerà buona parte del nuovo corso della sanità campana. Rispetto ad un valore nazionale pari a 82,6 anni, il Nord Italia si colloca al di sopra di 83, mentre il Mezzogiorno registra un valore di 81,7, con il dato della Campania più basso di tutte pari a 80,9. La letteratura scientifica internazionale è uniformemente concorde nel riconoscere l'esistenza di una forte correlazione tra finanziamento dei servizi sanitari e aspettativa di vita.

Liste d'attesa - Conseguenza dei divari sono le liste di attesa eccessive (ma solo per le prestazioni programmabili in quanto su quelle urgenti e brevi la Campania è adempiente) e la dinamica dei flussi di mobilità sanitaria. Fenomeno strutturale che solo con azioni forti da assumere dal livello centrale di governo si può invertire. In termini di spesa pro-capite netta, la Campania si colloca dietro Calabria, Basilicata, Valle d'Aosta, Abruzzo e Liguria. Ma in termini assoluti è la Regione che esporta più pazienti e spende di più per questa voce anche per patologie non di alta specializzazione. «Sto raccogliendo tutta la documentazione. Ho fatto più di una riunione e ho chiesto dei report molto specifici che sto studiando».

Tetti spesa - In Campania, il privato accreditato (che opera in nome e per conto del sistema sanitario pubblico) è una risorsa per il miglioramento della Salute dei cittadini ma sottoposto a tetti di spesa invalicabili a causa del Piano di rientro sia per le strutture specialistiche (radiologia, centri analisi ecc.) con budget esauriti in pochi giorni ogni mese, sia per le strutture residenziali e ospedaliere. Queste ultime sono in tutto 64 e contano 5.651 posti letto accreditati di cui 1.316 riabilitativi post acuzie e 505 per la lungodegenza a cui vanno aggiunti 547 posti (ex neuropsichiatria) riconvertiti. Un settore che impiega 2.336 medici di cui 1.733 dipendenti e 603 consulenti, 3.505 infermieri, oltre 4 mila unità di altro personale e che nel 2024 ha assorbito 747 milioni di euro (di cui 490 per il personale) a fronte dei 5,2 miliardi assegnati al settore ospedaliero (pubblico e privato) assorbendo il 14,3% della torta erogando il 30% di tutte le prestazioni ospedaliere. Una coperta corta che ha lasciato scoperti, nel 2024, 28 milioni di euro sul budget assegnato e 57 milioni in termini di prestazioni erogate e non remunerata.

Politica sanitaria

«Fuori la politica dalla sanità, le scelte in b

Nel suo primo intervento pubblico sulla sanità il neo Governatore della Campania pronuncia parole importan
e sui criteri di selezione di manager aziendali e di ASL. Poi, a sorpresa, lancia un primo progetto: "Un nuovo p

di Nina De Martino

«Negli ospedali si curano le persone, non si fanno voti. I partiti devono uscire dalla sanità». La folta platea del salone Moriello appena rinnovato si fa subito più attenta quando Roberto Fico pronuncia parole impegnative. In molti hanno tentato prima di lui a tenere fuori la politica dalla sanità, nessuno c'è riuscito e qualche altro ha fatto il contrario, utilizzando la gestione di Asl e ospedali come bacino per costruire fortune elettorali. «L'impostazione che voglio dare – aggiunge il neo governatore - premia il merito, non chi vota qualcuno. Non ci sarà mai una mia indicazione per avanzare nei ruoli degli ospedali. Servono i curricula per andare avanti. Lavoreremo nel modo più etico possibile».

Forse sono proprio queste parole che convincono molti medici e infermieri presenti in sala a mettersi in fila per stringere la mano al neo governatore. L'occasione è la presentazione del restyling dell'edificio storico dellìospedale Cardarelli. Con tanto di busto marmorea al centro dell'androne. Con lui, tra gli altri, il sindaco di Napoli Gaetano Manfredi e il prefetto del capoluogo Michele di Bari. Anche loro, dopo essere intervenuti, ascoltano con interesse l'intervento di Fico. L'uscita dal piano di rientro, la riduzione delle liste d'attesa e il potenziamento della medicina territoriale sono le priorità che Fico elenca.

Un nuovo piano ospedaliero - Ma tra le novità c'è quella che non t'aspetti: un nuovo piano ospedaliero. «Serve un nuovo piano ospedaliero, più funzionale, razionale e cooperativo tra le strutture esistenti e le nuove», dice il governatore. Andranno avanti, quindi, gli interventi sui nuovi ospedali programmati dal predecessore Vincenzo De Luca. Ma Fico vuole rivedere l'organizzazione territoriale dei presidi ospedalieri in particolare a Napoli e con un'attenzione alla situazione dei pronto soccorso. Nella revisione del piano ospedaliero potrebbe rientrare anche la questione dell'apertura dei pronto soccorso nei policlinici universitari partenopei. Anche questo un antico nodo mai sciolto.

base al merito»

nti sull'autonomia dal potere politico
piano ospedaliero".

Il territorio - Ma la sanità immaginata da Fico non è ospedale-centrica. «L'obiettivo – dice - è sviluppare sempre di più la medicina territoriale così da non congestionare gli ospedali e i pronto soccorso». Un ruolo strategico lo avranno le case di comunità, per le quali serviranno però nuove assunzioni. E per sbloccare bisogna uscire dal piano di rientro.

Le aggressioni - Poi sulle aggressioni al personale sanitario: «Il front office va potenziato. Stiamo studiando alcuni modelli che possono essere utili per tutelare i lavoratori e dare più informazioni alle persone che aspettano e vogliono capirne il motivo».

La regione, pur adempiente secondo il nuovo sistema di garanzia, presenta ancora criticità strutturali.

Livelli di assistenza Campania 13esima

Il punteggio è di 206 a fronte di una media nazionale di 226 e distanza da Veneto, Toscana ed Emilia-Romagna.

La Campania, pur essendo una Regione "adempiente secondo il nuovo sistema di garanzia" (in Italia otto non lo sono), si trova in una posizione medio bassa (13esima su 21 regioni e province autonome prese in considerazioni) nella graduatoria del punteggio totale relativo agli adempimenti Lea (livelli essenziali di assistenza). I dati, fermi al 2023 (l'ultimo anno disponibile), è stato fornito dal presidente della Fondazione Gimbe, Nino Cartabellotta, nel corso dell'audizione presso la commissione Affari costituzionali del Senato nell' ambito dell'esame del disegno di legge delega per la determinazione dei Lep (livelli essenziali delle prestazioni).Stando ai dati in possesso di Gimbe e riferiti alla Campania, la regione presenta un punteggio totale degli adempimenti ai livelli essenziali di assistenza pari a 206, a fronte di una media nazionale di 226, ben distante dalle prime (Veneto è a 288, Toscana a 286 ed Emilia Romagna a 278) ma è avanti tra le altre a provincia autonoma di Bolzano (202), Molise (193) e Sardegna (192). La Campania ha inoltre registrato i seguenti punteggi nelle tre aree monitorate: 62 punti per l'area della prevenzione (collocandosi al sedicesimo posto, 36 punti in meno rispetto alle prime, la provincia autonoma di Trento e al Veneto); 72 punti per l'area distrettuale (13esima, 24 in meno rispetto al Veneto che è in prima posizione) e 72 punti per l'area ospedaliera (15esima, 25 punti in meno della prima, la provincia autonoma di Trento).

Politica sanitaria

Cure, la fuga di pazienti dalla Campania cos

Lo dice il report del ministero della Salute: al CentroSud la mobilità sanitaria passiva non accenna a diminuire. Un giro d'affari che sfi

di **Pino De Martino**

Supera i 280 milioni di euro a voragine finanziaria che grava come un macigno sui conti della sanità campana e che resta uno dei punti critici e pregiudizievoli rispetto all'uscita della Regione dal piano di rientro. I dati del ministero della Salute e di Agenas lo confermano e certificano il volume di spesa oltre 280 milioni l'anno, denaro pubblico che finisce nelle casse delle Regioni del Nord. Se Lombardia, Emilia-Romagna e Veneto confermano la loro attrattività, diverse regioni del Centro-Sud continuano a registrare saldi ampiamente negativi, segnale di un significativo esodo di pazienti verso territori percepiti come più efficienti o più specializzati. E intanto il giro d'affari sfiora i 5 miliardi di euro. Quanto alla tipologia delle prestazioni, resta confermata una minore mobilità (quindi, meno viaggi) per interventi ordinari mentre le scelte dei pazienti riguardano servizi ad alta specializzazione che - va da sé - prevedono un costo più elevato.

I dati - La Lombardia guida la classifica dei saldi positivi con un avanzo di 580,7 milioni di euro, risultato di ingressi per oltre 1,023 miliardi a fronte di 442 milioni in uscita. Segue l'Emilia-Romagna con 507,1 milioni e il Veneto con 189,4 milioni. Risultati positivi anche per Toscana (+54,4 milioni), Trento (+5,1 milioni) e Molise (+28,2 milioni). I peggiori saldi negativi in Campania, Calabria, Sicilia, Puglia, Lazio, Marche. I dati mostrano con chiarezza quali siano le regioni in maggiore difficoltà. Il peggior saldo in valore assoluto è quello della Calabria, che registra – 304,1 milioni. Segue la Campania con -281,6 milioni, la Sicilia con -220,9 milioni, la Puglia con –210,3 milioni, il Lazio con –170,8 milioni, Liguria (-98 mln) e Abruzzo (-86,4 milioni). Anche altre regioni mostrano squilibri: Sardegna (-79,1 mln), Basilicata (-70,1 mln), Marche con -56,9 milioni, Umbria (-37,5 milioni) e Friuli (-9,8 milioni). La distribuzione dei flussi riflette dinamiche note: la perdita di risorse segue la migrazione dei pazienti verso le strutture che offrono specializzazioni avanzate, mag-

Le farmacie come centri diagnostici

Fino al 2025 era possibile eseguire in farmacia solo test di autodiagnosi, come la glicemia o il colesterolo. Da quest'anno si trasformano in autentici laboratori con test che svariano da quelli per i tumori a quelli per il cuore. Tutte le diagnosi e come funzionano.

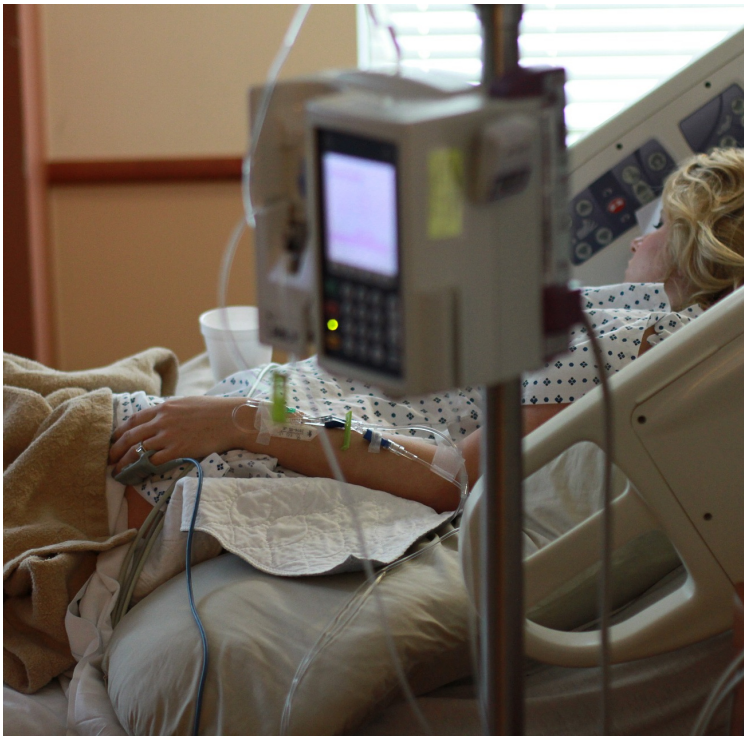
Da quest'anno le farmacie diventano, a pieno titolo, centri di prevenzione sanitaria diffusa. Con l'entrata in vigore del decreto attuativo previsto dalla riforma dei "nuovi servizi farmaceutici", i cittadini potranno effettuare una gamma sempre più ampia di esami diagnostici direttamente nel punto vendita sotto casa, senza bisogno di recarsi in laboratorio o prenotare tramite il Cup.
È una rivoluzione silenziosa ma epocale: la sanità di prossimità, di cui si parla da anni, diventa finalmente realtà. E le farmacie, oltre 19.000 in tutta Italia, si candidano a diventare il primo presidio di salute sul territorio, capace di intercettare bisogni, prevenire patologie e alleggerire la pressione su ospedali e medici di base.

Le novità - Fino al 2025 era possibile eseguire in farmacia solo test di autodiagnosi, come la glicemia o il colesterolo. Dal 2026, invece, grazie al nuovo quadro normativo, le farmacie potranno effettuare veri e propri esami di laboratorio di prima istanza, con strumenti certificati e personale formato. Saranno disponibili test ematici per ormoni, controlli della funzionalità renale ed epatica, marker cardiaci, test infiammatori e perfino screening oncologici rapidi, come quello per il tumore della prostata (Psa) o del colon retto. Una svolta resa possibile dall'introduzione dei cosiddetti "laboratori decentrati" e dall'integrazione digitale con le Asl e le piattaforme regionali: i referti saranno validi ai fini clinici e disponibili anche nel fascicolo sanitario elettronico. I farmacisti riceveranno una specifica formazione, riconosciuta dal Ministero della Salute, per garantire la corretta esecuzione delle analisi e la gestione dei dati sensibili.

Il risparmio - L'obiettivo è duplice: rendere più accessibili i controlli di routine e ridurre i tempi d'attesa per gli esami di laboratorio. Secondo le stime di Federfarma, ogni anno in Italia vengono eseguiti circa 500 milioni di analisi di laboratorio. Di questi, almeno il 15%

sta 280 milioni l'anno

ora i cinque miliardi di euro e che arricchisce le regioni del Nord.



giore dotazione tecnologica, minori tempi di attesa e una più consolidata reputazione clinica. Il Centro-Sud continua a scontare carenze organizzative, ritardi nelle infrastrutture, difficoltà nel trattenere professionisti e criticità storiche nei livelli di assistenza.

Le pagelle - «Non assegniamo pagelle», fanno sapere da Agenas, l'agenzia del ministero della Salute per i servizi sanitari regionali. Il commissario Americo Cicchetti ha sottolineato che «i dati rappresentano il risultato di analisi e monitoraggi continui il cui obiettivo è migliorare l'efficienza e la qualità del servizio». Il tema resta oggi particolarmente delicato dal momento che - almeno per tutto il 2025 - anche le cosiddette Regioni «virtuose», quelle cioè che attraggono nelle loro strutture sanitarie pazienti provenienti dal Mezzogiorno, hanno dovuto fronteggiare le difficoltà relative all'intasamento delle liste di attesa nei presidi pubblici.

potrebbe essere spostato sulle farmacie. Un risparmio di tempo enorme per i cittadini, che spesso attendono settimane per un prelievo e altrettante per il referto. "Con la farmacia dei servizi portiamo l'assistenza a pochi metri da casa - ha spiegato il presidente di Federfarma, Marco Cossolo - ed è una nuova frontiera della prevenzione e della presa in carico del cittadino. Significa evitare che piccoli disturbi diventino malattie croniche e alleggerire le strutture ospedaliere".

Come funziona - Per i pazienti cronici, il cambiamento sarà ancora più rilevante: chi soffre di diabete, ipertensione o dislipidemie potrà monitorare i propri parametri in modo continuativo, con risultati immediati e un dialogo più stretto tra farmacista, medico e struttura sanitaria. Il provvedimento è parte del percorso avviato con il Piano nazionale di ripresa e resilienza che punta a rafforzare la medicina territoriale. Le Regioni avranno un ruolo chiave: spetterà a loro definire l'elenco degli esami consentiti e le modalità di rimborso o compartecipazione dei costi. Le farmacie dovranno dotarsi di spazi riservati e apparecchiature conformi agli standard di sicurezza e qualità previsti. Non mancano, tuttavia, le criticità. Alcuni medici temono che la diffusione degli esami in farmacia possa creare sovrapposizioni con la medicina generale e generare una diagnostica "fai da te". Ma le Associazioni dei farmacisti insistono: non vogliamo sostituirci ai medici ma collaborare per una sanità più efficiente, incentrata sulla persona e basata sulla prevenzione. Nei prossimi mesi, si prevede l'avvio dei primi progetti pilota in Lombardia, Emilia-Romagna e Lazio: qui, le farmacie che aderiranno potranno già offrire i nuovi esami e trasmettere i risultati direttamente ai medici curanti. Una piccola rivoluzione logistica e culturale che promette grandi effetti. Perché rendere la prevenzione semplice, veloce e accessibile potrebbe davvero cambiare - in meglio - il futuro della salute pubblica in Italia.

Politica sanitaria

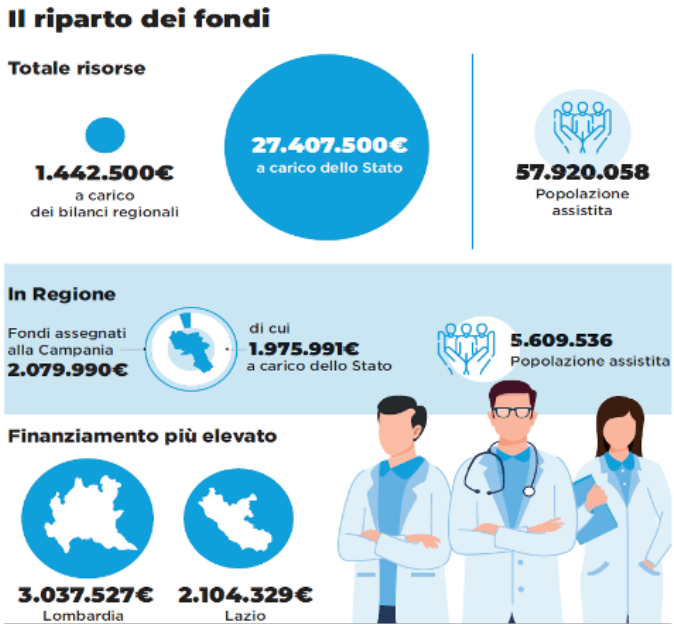
Liste di attesa, pronti 2 milioni per la Campania

Con la pubblicazione sulla Gazzetta Ufficiale, l'intesa sancita nell'ultima Conferenza tra Stato ed enti locali è ufficialmente sancita. Nel decreto la ripartizione dei 28,85 milioni tra le Regioni: finanziato il fabbisogno locale e implementata la piattaforma nazionale per gestire al meglio i tempi delle prestazioni.

di **Pino De Martino**

È stato pubblicato in Gazzetta ufficiale il decreto del Ministero della Salute che autorizza il contributo a carico dello Stato, 27,4 milioni di euro, per la realizzazione della Piattaforma nazionale delle liste di attesa. La spesa complessiva di 28,85 milioni di euro include il 5% a carico delle Regioni, poco più di 1,4 milioni, secondo il riparto a cui la Conferenza Stato-Regioni ha dato il via libera a fine novembre. A ciascuna Regione (escluse le Province autonome di Trento e Bolzano, per le quali le quote sono rese indisponibili dalla normativa vigente), secondo la tabella inclusa nel decreto del 9 dicembre, spetta una quota fissa di 850mila euro e una variabile, per importi complessivi (incluso il 5% a carico regionale) che vanno dai 3 milioni della Lombardia ai 913.727 euro del Molise. Questi gli altri importi totali: 1,78 milioni al Piemonte, 876.998 euro alla Valle d'Aosta, 1,91 milioni al Veneto, 1,1 milioni dl Friuli Venezia Giulia, 1,18 milioni alla Liguria, 1,882 milioni all'Emilia Romagna, 1,65 milioni alla Toscana, poco più di un milione all' Umbria, 1,17 milioni alle Marche, 2,1 milioni al Lazio, 1,12 milioni all'Abruzzo, poco più di 2 milioni alla Campania, 1,9 milioni alla Sicilia, 1,25 milioni alla Calabria, 1,7 milioni alla Puglia, 967.873 euro alla Basilicata, 1,19 milioni alla Sardegna. Il decreto inoltre disciplina modalità e tempi per l'accesso ai finanziamenti. Entro 30 giorni dall'approvazione del progetto operativo da parte di Agenas, per procedere all'utilizzo delle risorse, la Regione deve presentare il progetto stesso al Ministero della salute, indicando il fabbisogno complessivo, gli interventi ritenuti prioritari, raggruppati per stazione appaltante, nonché breve relazione tecnica degli interventi che si intendono realizzare.

La Campania ha ottenuto un finanziamento statale di 2 milioni: è la terza regione in Italia per entità del finanziamento dopo Lombardia e Lazio. La riserva finanziaria è attinta a una piccola frazione dei fondi non spesi per l'edilizia sanitaria e dovrà essere impiegata per rendere compiuto il progetto nell'ambito del Piano nazionale di gestione delle code in ambulatori e ospedali. Le risorse attese sono necessarie per predisporre gli adeguamenti tecnici in tutte le Regioni e per conferire con web services ogni giorno tutti i dati del Cup (Centro di prenotazione unico) regionale, alla piattaforma nazionale liste di attesa di Agenas per la realizzazione dell'interoperabilità tra le piattaforme regionali e quella nazionale che permetteranno alle amministrazioni regionali di completare gli investimenti tecnologici e gli adeguamenti dei sistemi sanitari.



Gimbe: Al Sud l'aspettativa di vita più bassa d'Italia

Secondo l'ultimo rapporto della Fondazione Gimbe, il settimo, sempre più cittadini campani rinunciano alle cure mediche, circa il 7%, soprattutto per motivi economici. Il costo delle visite specialistiche e degli accertamenti è diventato insostenibile per molte famiglie, costringendole a rinunciare a controlli preventivi essenziali. Questa situazione è particolarmente grave al Sud, dove la percentuale di persone che limitano la spesa per la salute è nettamente superiore alla media nazionale. Le conseguenze di queste scelte infatti si ripercuotono direttamente sulla salute dei cittadini. La rinuncia alle cure porta a un peggioramento dello stato di salute e a un aumento dei costi per il sistema sanitario nel lungo periodo. Inoltre, la Campania è la regione con l'aspettativa di vita più bassa d'Italia, un dato allarmante che riflette le carenze del sistema sanitario locale. Le stime Istat dimostrano che, a fronte di un'età media di 83,1 anni a livello nazionale (+0,5 anni rispetto al 2022), si registrano notevoli differenze regionali: dagli 84,6 anni della Provincia autonoma di Trento agli 81,4 anni della Campania, con una differenza di ben 3,2 anni.
Più in generale, in tutte le 8 Regioni del Mezzogiorno l'aspettativa di vita è inferiore alla media nazionale, spia indiretta sia delle criticità dei servizi sanitari regionali, sia dell'incidenza della povertà assoluta. Uno dei principali problemi della sanità campana è ancora la carenza di personale sanitario. Medici e infermieri sono pochi e spesso sottopagati, con il risultato di un'assistenza di scarsa qualità e lunghe liste d'attesa. La fuga dei professionisti sanitari verso le regioni del Nord, dove le retribuzioni sono più alte e le condizioni di lavoro migliori, aggrava ulteriormente la situazione. L'analisi della mobilità sanitaria conferma la forte capacità attrattiva delle Regioni del Nord e la fuga da quelle del Sud: nel decennio 2012-2021 14 Regioni, quasi tutte del Centro Sud, hanno accumulato un saldo negativo complessivo di 14,5 miliardi, mentre Lombardia, e Veneto sono ai primi posti per saldo attivo insieme all'Emilia-Romagna. Nel 2021 su € 4,25 miliardi di valore della mobilità sanitaria, il 93,3% di quella attiva si concentra in Lombardia e Veneto oltre che in Emilia-Romagna, mentre il 76,9% del saldo passivo grava su Calabria, Campania, Sicilia, Lazio, Puglia e Abruzzo. Questo fenomeno, noto come "mobilità sanitaria", è la dimostrazione evidente delle carenze del sistema sanitario regionale e rappresenta un enorme spreco di risorse.

PIANO DI RILANCIO DEL SERVIZIO SANITARIO NAZIONALE

SALUTE IN TUTTE LE POLITICHE
Mettere la salute e il benessere delle persone al centro di tutte le decisioni politiche: non solo sanitarie, ma anche ambientali, industriali, sociali, economiche e fiscali, oltre che di istruzione, formazione e ricerca *(Health in All Policies)*

GOVERNANCE STATO-REGIONI
Potenziare le capacità di indirizzo e verifica dello Stato sulle Regioni, nel rispetto dei loro poteri, per ridurre diseguaglianze, iniquità e sprechi e garantire il diritto costituzionale alla tutela della salute

FINANZIAMENTO PUBBLICO
Aumentare in maniera progressiva e consistente il finanziamento pubblico per la sanità per allinearlo alla media dei paesi europei, al fine di garantire il rilancio delle politiche del personale sanitario, l'erogazione uniforme dei LEA e l'equità di accesso alle innovazioni

LIVELLI ESSENZIALI DI ASSISTENZA
Garantire l'aggiornamento continuo dei LEA per rendere rapidamente accessibili le vere innovazioni escludendo le prestazioni sanitarie obsolete e ridurre le diseguaglianze regionali nell'esigibilità dei LEA

PREVENZIONE E PROMOZIONE DELLA SALUTE
Diffondere la cultura e aumentare gli investimenti in prevenzione e promozione della salute e attuare l'approccio integrato *One Health*, perché la salute di persone, animali, piante e ambiente sono strettamente interdipendenti

RAPPORTO PUBBLICO-PRIVATO
Favorire una sana integrazione pubblico-privato al fine di ridurre le diseguaglianze d'accesso ai servizi sanitari e arginare l'espansione incontrollata della sanità privata

GIMBE
EVIDENCE FOR HEALTH

PERSONALE SANITARIO
Rilanciare le politiche sul capitale umano per valorizzare la colonna portante della sanità pubblica e rendere nuovamente attrattiva la carriera nel SSN, innovando i processi di formazione e valutazione delle competenze professionali

RICERCA INDIPENDENTE
Potenziare la ricerca clinica e organizzativa integrandole in un programma nazionale di ricerca e sviluppo, al fine di produrre evidenze scientifiche per informare scelte e investimenti del SSN

SPRECHI E INEFFICIENZE
Ridurre inappropriatezze e inefficienze, contrastare frodi e abusi e riallocare le risorse recuperate in servizi essenziali e innovazioni, aumentando il valore della spesa sanitaria

SERVIZI SANITARI E SOCIO-SANITARI
Programmare l'offerta di servizi sanitari secondo i reali bisogni di salute della popolazione e renderla disponibile tramite reti integrate multiprofessionali, al fine di ridurre la frammentazione tra assistenza sanitaria e sociale e tra ospedale e territorio

INFORMAZIONE ALLA POPOLAZIONE
Aumentare la consapevolezza civica del valore del SSN, potenziare l'informazione istituzionale basata sulle evidenze scientifiche e migliorare l'alfabetizzazione sanitaria, al fine di favorire decisioni informate sulla salute, ridurre il consumismo sanitario e contrastare le fake news

TRASFORMAZIONE DIGITALE
Promuovere cultura e competenze digitali della popolazione, in particolare di professionisti sanitari, pazienti, familiari e caregiver, e rimuovere gli ostacoli alla digitalizzazione, al fine di ridurre le diseguaglianze e migliorare l'accessibilità ai servizi sanitari e l'efficienza del SSN

SANITÀ INTEGRATIVA
Rendere i fondi sanitari realmente integrativi rispetto alle prestazioni già incluse nei LEA, al fine di arginare diseguaglianze, privatizzazione, erosione di risorse pubbliche e derive consumistiche

Politica sanitaria

Il Sistema sanitario nazionale “con la coperta corta”

Il 26° Rapporto Oasi fotografa lo stato dell'arte della sanità in Italia: “Non sempre più risorse uguale più e migliori cure”. “La sostenibilità dell’universalismo passa necessariamente da una riallocazione della spesa, valorizzazione del personale e identificazione delle priorità”. Poi traccia la via per valorizzare gli infermieri.

di Pino De Martino

Il Rapporto dell’Osservatorio sulle Aziende e sul Sistema sanitario Italiano (OASI), presentato dal Centro di ricerche sulla gestione dell’assistenza sanitaria e sociale (Cergas) della SDA Bocconi School of Management, fotografa un Servizio sanitario nazionale con la «coperta corta, tra bisogni crescenti e risorse limitate». Lo studio smonta tre “narrazioni consolatorie” che dominano il dibattito pubblico – più risorse, più efficienza, meno liste d’attesa – evidenziando come queste soluzioni offrano risposte parziali ed evitino il nodo centrale: in un contesto di risorse limitate e domanda non governata, il SSN deve individuare priorità chiare. La sostenibilità dell’universalismo passa necessariamente da un percorso di profonda riallocazione delle risorse, valorizzazione del personale e dall’ identificazione delle priorità di intervento.

La carenza infermieristica - Uno dei focus principali del Rapporto è dedicato agli infermieri, figure ritenute essenziali per la sostenibilità del sistema, e alle criticità affrontate dalla professione. Il Cergas documenta nel dettaglio lo squilibrio delle professioni sanitarie. Tra il 2019 e il 2023, il personale infermieristico e ostetrico è aumentato del 7,8%, raggiungendo le 289.545 unità, ma questa crescita risulta del tutto insufficiente rispetto ai bisogni. Con 6,5 infermieri ogni 1.000 abitanti, l’Italia si colloca ben al di sotto della media dell’Unione Europea di 8,4. Ancora più significativo è il rapporto tra medici e infermieri: solo 1,3 infermieri per medico, contro valori compresi tra 2,6 e 2,9 in Paesi come Francia, Germania e Regno Unito.

Le nuove sfide organizzative - Il tema dell’infermieristica nel Rapporto si intreccia con la questione della prossimità dei servizi. Con 9.000 ambulatori e 2.400 Case della Comunità previste dal PNRR, il rischio è aumentare la frammentazione anziché razionalizzare l’offerta. I nuovi setting finanziati dal PNRR (Case della Comunità, Ospedali di Comunità, ADI potenziata, ruolo di IFeC, PUA, 116117, COT) aprono un’ulteriore finestra di opportunità strategiche ma pongono anche una sfida: nessuna azienda sanitaria disporrà del numero sufficiente di personale infermieristico per popolare con pari saturazione tutti questi servizi. Di conseguenza, occorre definire a quale setting dare priorità nei singoli contesti distrettuali, potendo diversificare anche all’interno della singola azienda.

Frammentazione professionale - Il Rapporto OASI evidenzia inoltre come la frammentazione delle 22 professioni sanitarie riconosciute in Italia generi rigidità organizzative che ostacolano la flessibilità necessaria ad affrontare le sfide attuali. La ricomposizione delle frammentazioni professionali garantirebbe risparmi e maggiore flessibilità, rendendo possibili nuovi modelli di lavoro professionale: équipe itineranti, uso estensivo di servizi da remoto, reti hub and spoke che coniughino interessi professionali ed esigenze delle comunità nelle aree interne. Occorre superare la narrazione secondo cui “mancano semplicemente gli infermieri” e affrontare il tema con una diversa agenda di lavoro che includa la ricomposizione delle frammentazioni professionali, nuovi modelli organizzativi che valorizzino la distribuzione territoriale delle competenze, la digitalizzazione dei servizi che liberi tempo per l’assistenza diretta, la definizione di priorità chiare nell’ allocazione delle risorse umane tra i diversi setting assistenziali.

LA PRESIDENTE FN

“Inserire

“Riconoscere all'in
ziali di assistenz
gico delle attiv
introdurre il linguaggio infern
sono passi indispensabili per
cure eque e adeguate”. Si è co
proposte l'intervento di Barb
sidente della Federazione naz
fessioni infermieristiche
dell'audizione nella prima co
sulla 'Delega al Governo per
Lep, livelli essenziali delle

OPI BARBARA MANGIACAVALLI

e prestazioni infermierische in Lea e Lep”

terno dei Livelli essenza (Lea) il ruolo strategico vità infermieristiche e nieristico standardizzato r assicurare al cittadino oncentrato su queste due ara Mangiacavalli, presidente nazionale Ordini delle professioni (Fnopi), nel corso ommissione del Senato r la determinazione dei prestazioni'. “L'inserimento delle prestazioni infermieristiche nei Lea e conseguentemente nei Lep, non rappresenta solo un adeguamento tecnico, ma una scelta di civiltà e di equità - ha spiegato Mangiacavalli - Includere le attività infermieristiche nei Lea significa riconoscere il valore della presa in carico globale, della prevenzione e della gestione delle cronicità: elementi fondamentali per un sistema sanitario moderno e sostenibile per assicurare che ogni cittadino, indipendentemente dal luogo in cui vive, possa beneficiare di prestazioni qualificate e integrate”.

1955 - 2025 || 70° ANNIVERSARIO DELL'ISTITUZIONE DELL'ORDINE DELLE PROFESSIONI

Settant'anni di cure, di competenze e c

Tra storia, identità e futuro si è celebrato presso l'Aula Magna "Matilde Serao" dell0Università degli Studi di Napoli Parthenope il 70° Annive di Napoli. In Sala vecchi e nuovi dirigenti. Targa e aula dedicata al past president Ciro Carbone. Gli interventi super applauditi di Suor

di **Rosario Scotto di Vetta**

Nel segno della memoria, dell'identità professionale e delle sfide che attendono la sanità contemporanea, l'Ordine delle Professioni Infermieristiche di Napoli ha celebrato il 70° anniversario della sua istituzione. L'Aula Magna "Matilde Serao" dell'Università Parthenope era stracolma, istituzioni, mondo accademico e comunità infermieristica si sono ritrovati per rileggere un percorso iniziato nel 1955 e interrogarsi sul ruolo che la professione infermieristica è chiamata a svolgere oggi e nei prossimi anni, tra formazione, riconoscimento professionale e nuova organizzazione dell'assistenza. Settant'anni non come semplice ricorrenza, dunque, ma come occasione per guardare al lavoro svolto e alle responsabilità che attendono la professione.

I saluti - Il legame tra Ordine e Università è stato al centro dei saluti accademici. È toccato per prima alla prof Giuliana Valerio, direttrice del Corso di Laurea in Infermieristica dell'Università Parthenope. Importanti riconoscimenti sono arrivati alla professione dai rappresentanti degli altri atenei campani, che hanno sottolineato il ruolo insostituibile degli infermieri non solo nell'assistenza, ma anche nei percorsi formativi e universitari, evidenziando il progresso compiuto negli anni in termini di competenze e responsabilità.

Filosofia e scienza - Gli interventi sapienti e di altissimo respiro filosofico di Angela Basile e di Edoardo Manzoni hanno aperto la mente e l'anima ad una platea attenta e emozionata. Prima ancora che la testimonianza di Suor Odilia D'Avella, figura storica dell'infermieristica italiana e napoletana scaldasse i cuori e i ricordi le riflessioni di Angela Basile ed Edoardo Manzoni hanno offerto una lettura culturale e filosofica della cura decisamente interessante. Fuori dagli schemi e originale come sempre, Angela Basile ha richiamato il valore della parola e della relazione, capaci di incidere sulla paura e sul dolore, invitando a "non ridurre la cura a una semplificazione tecnica" ma dando significato e senso alla vicinanza, all'aspetto umano dell'assistenza. Manzoni ha invece intrecciato memoria e identità, distinguendo tra il ricordo come ritorno al cuore e la nostalgia come occasione per riscoprire radici capaci di generare futuro. In un contesto segnato da complessità e cambiamento, ha osservato, la cura infermieristica resta una forma specializzata della cura umana, sostenuta da competenze scientifiche e da una promessa quotidiana verso le persone assistite.

Targhe e riconoscimenti - Molte le targhe e i riconoscimenti che l'Opi Napoli ha voluto offrire ai tanti professionisti, consulenti e collaboratori che in questi settanta anni hanno fatto grande quest'organizzazione, diventata oggi un Ente sussidiario dello stato, con 22 mila iscritti e tante eccellenze tutte presenti in sala. Dal Past President Ciro Carbone, ai vertici dell'ente per oltre un vent'ennio, fino al team amministrativo che ogni giorno manda avanti la Casa degli infermieri. Al limite della commozione la prof Teresa Rea, presidente dell'Opi Napoli che ha subito richiamando il valore centrale che come un sottile filo rosso lega passato, presente e futuro: "Allora come ora, la nostra è una professione che è scienza e umanità insieme". "Sono fiera, orgogliosa e molto emozionata – ha poi aggiunto - nel sentire di rappresentare oggi da presidente tutto

Suora e infermiera insieme: un

Suor Odilia D'Avella - Prima presidente degli infermieri di Napoli, quando l'Opi non era ancora un ordine ma un collegio che riuniva le province di Napoli, Caserta, Benevento e Campobasso. Poi dal 1982 al 1994 presidente della Federazione Nazionale. La lucida intelligenza, il pragmatismo e le parole che escono fluide senza troppe mediazioni sono rimaste uguali. Lo dice lei stessa, Suor Odilia D'Avella, decana degli infermieri: "Gli anni mi hanno un poco ammaccata, ma per il resto sono rimasta lucida e attenta". E' stata una lezione di vita, prima ancora che professionale, quella offerta dalla ex presidente nazionale dei collegi Ipasvi. "Vale la pena fare l'infermiere – ha detto rivolgendosi alle nuove generazioni - ma bisogna essere motivati, perché la motivazione, quando si intraprende una professione come questa, è fondamentale. Se non c'è la motivazione o si fa solo minata h sione: "P può coni per farlo essere co fermiera lungo ca fosse im noscere

di valori universali

rsario dell'Istituzione dell'Ordine delle Professioni Infermieristiche
Odilia D'Avella, Angela Basile, Edoardo Manzoni.

questo cammino e tante storie importanti. Dobbiamo portare ai cittadini, ma soprattutto ai nostri giovani colleghi la carica emotiva che oggi ci hanno regalato quanti hanno rappresentato al meglio questa professione. Devono essere consapevoli di quanta grandezza professionale, ma soprattutto di quanta ricchezza umana e sociale essi sono portatori. Solo così faremo in modo che questi fulgidi esempi di vita possano diventare valori universali".

Mangiacavalli si collega - Barbara Mangiacavalli, in collegamento video, ha ricordato come "la storia dell'infermieristica sia parte integrante della storia civile del Paese, mentre Valentina Vanzi ha posto l'accento sulla specificità dell'infermieristica pediatrica e sulla continuità della presa in carico, dall'infanzia all'età adulta, come nodo ancora aperto. Non sono mancati i momenti emozionanti. L'intitolazione dell'aula di formazione dell'OPI Napoli a Ciro Carbone ha rappresentato un gesto di riconoscimento verso chi ha contribuito in modo determinante alla crescita istituzionale e culturale della comunità professionale.

Il confronto - Il settantesimo anniversario dell'Ordine delle Professioni Infermieristiche di Napoli si è poi trasformato in un confronto a più voci, un'occasione di riflessione in cui il passato non è stato celebrato come nostalgia, ma assunto come responsabilità. Una giornata che ha ribadito come la cura, per essere autentica, nasca dall'incontro tra competenza, consapevolezza e umanità, e come questa promessa continui a rinnovarsi ogni giorno nel lavoro degli infermieri.

na solenne lezione di vita

o per il guadagno non la si può svolgere bene". Forte, combattiva e determa fatto della sua vocazione per la cura dei più fragili e deboli una profes-Essere suora per me è stata una marcia in più, essere suora e infermiera si ugare bene, perché la suora si dona agli altri ma deve avere le competenze . È stato un buon connubio. Gli infermieri devono aiutare chi curano ad onsiderate come persone. È questo che ho cercato di fare come suora e in- e questo che ho cercato d'insegnare e di tenere sempre presente nel mio mmino". Quando ero presidente ho sempre ritenuto che la comunicazione portante per far conoscere la professione in tutti i suoi aspetti e per far coai cittadini l'importanza della professione infermieristica".

OpiNapoli informa

L'Opi Napoli alle Giornat

Rea: Un'altra sanità è possibile umanizzando le cure e avvicinandosi ai citt e di benessere. Una spinta a fare sempre meglio"

di **Gaetano**

"Oggi noi infermieri siamo in piazza perché crediamo che un'altra sanità è possibile. Una sanità più vicina ai fragili, agli ultimi, a tutti quelli che l'attuale servizio sanitario non riesce a raggiungere, nonostante sia nella sua vocazione pubblica, universale e solidale. Ma dobbiamo riempire di contenuti e di concretezza queste parole che altrimenti restano vuoti presupposti". Ha accolto così la prof Teresa Rea i cittadini accorsi agli stand dell'Opi Napoli al Villaggio della Salute allestito anche quest'anno in piazza del Plebiscito a Napoli. L'occasione è la quarta edizione della rassegna voluta dal Comune di Napoli e realizzate con i contributi degli ordini professionali, delle Asl, delle Università e dele più importanti aziende ospedaliere napoletane. "Un'altra sanità è possibile", dice ancora la Rea. "Insieme con tutte le altre professioni sanitarie, con le istituzioni per umanizzare le cure, renderle concretamente accessibili a tutti, fino a casa, grazie alla territorialità dell'assistenza, alla prevenzione, all'infermiere di famiglia, alle farmacie come primo presidio sanitario. Un'altra sanità è possibile se mettiamo il cittadino al centro del processo, dalla diagnosi alle cure. Chi ci amministra deve guardare alla sanità come bene comune, come un investimento sul futuro, p remo come professionisti dell'assis ospedali, ma soprattutto sul territor cientemente attrezzato".

Oltre 50 mila visitatori – Qu 30 mila registrati nella scorsa edizio agli sportelli di stand, gazebo e pos e dagli Ospedali di Napoli e provi ambulatoriali e consulenze profess informative, laboratori, questionar tante le iniziative che hanno cataliz Salute. «C'è una grande fame di commenta Vincenzo Santagada, a del Comune di Napoli - questa forn lestito in piazza, giunta alla quarta registrato di anno in anno, conferm in grado di avvicinare la prevenzion testimonianza di una difficoltà, per quotidiano e nei territori i control

e Napoletane della Salute

adini. Superate le 50mila presenze. Santagada: "Si avverte fame di salute

o Artiola

piuttosto che una spesa. Chiede-stenza più giovani e donne negli rio oggi purtroppo ancora insuffi-

est'anno sono quasi il doppio dei one. Folla e lunghe file di cittadini stazioni mobili allestite dalle Asl incia. Screening gratuiti, attività sionali, visite e controlli, attività ri, tavoli di discussione tematici: zzato l'afflusso al villaggio della i salute da parte dei cittadini – assessore al Verde e alla Salute nula, del villaggio della Salute al- edizione nel crescente successo a l'utilità e necessità di iniziative ne alla popolazione ma è anche la r cittadini e utenti, ad esigere nel li di cui hanno bisogno per non ammalarsi o per diagnosticare precocemente una malattia. Questo successo di presenze e partecipazione deve spingerci a fare di più per avvicinare la popolazione a sani stili di vita, ad aderire agli screening, a rendere costanti i controlli e le visite specialistiche quando ci sono segni di sofferenza».

Le Asl – Oltre al Comune erano presenti in Piazza gli stand della Asl Napoli 1, del Santobono-Pausilipon, del Cardarelli, delle Asl Napoli 2 nord e Napoli 3 sud, dell'Azienda dei Colli, quest'ultima con diversi ambiti di specialistica e oltre quaranta diverse tipologie di check-up, screening e test: dalla prevenzione cardiovascolare alla diagnosi precoce di patologie oncologiche, dagli esami diabetologici alle visite odontoiatriche. Dopo i controlli otorino, le consulenza di terapia antalgica, nefrologia e cardiologia e delle visite di ortopedia, endocrinologia/diabetologia, pneumologia e cardiologia, e anche psicologica, di oculistica, pneumologia, neurologia e cardiologia e gastroenterologia, pneumologia e reumatologia. Uno stand è infine dedicato ai medici di medicina generale della Fimmg che offrono consulenze gratuite, controlli di prevenzione, elettrocardiogrammi, spirometrie e informazioni sulle vaccinazioni.

OpiNapoli informa

"TIENIMI A MENTE" CALENDARIO DELLA SALUTE 2026

No al pregiudizio e più cura della salute m

di **Pino De Martino**

Ogni anno un tema nuovo. Tutti di estremo interesse culturale, sociale e sanitario e con un claim e una grafica decisamente unici e accattivanti. "Tienimi a mente" titola quest'anno il Calendario della Salute giunto alla XXIesima edizione. Un momento di riflessione e un'occasione di confronto sulla salute mentale voluto fortemente dalla dottoressa Isabella Continisio, da sempre coordinatrice instancabile dell'iniziativa, che ha visto la collaborazione dei tanti ordini professionali e di alcuni studenti dell'area infermieristica del CdL Magistrale delle Professioni Sanitarie della Federico II. "Un lavoro d'insieme, un'unica visione su un tema oggi d'eccezionale attualità", ha spiegato la dottoressa Continisio, illustrando ai tantissimi presenti nell'Aula Magna del Policlinico Universitario della Federico ll. Promosso dalla Scuola di Medicina e Chirurgia dell'Ateneo federiciano, dall'Azienda Ospedaliera Universitaria Federico II e dall'Unicef Campania, il Calendario è realizzato con il patrocinio dell'Ordine delle Professioni Infermieristiche di Napoli. dell'Ordine dei Medici Chirurghi e degli Odontoiatri di Napoli, dell'Ordine degli Psicologi della Regione Campania, dell'Ordine dei Farmacisti di Napoli. "La salute non riguarda soltanto il corpo: vive nei pensieri, nelle emozioni, nelle relazioni. È in questo spazio delicato, quanto fondamentale, che si gioca una partita decisiva per il benessere individuale e collettivo. Un campo gli infermieri giocano un ruolo importante, soprattutto in termini di prevenzione", ha detto la prof Teresa Rea, presidente dell'Opi Napoli, intervenendo alla presentazione del calendario.

L'iniziativa nasce dall'idea del compianto professore Alfredo Pisacane, ordinario di Pediatria, che ha guidato per anni l'Ufficio Formazione Unico Scuola-Azienda. Il calendario della salute 2026 raccoglie dodici messaggi, uno per ogni mese, che invitano alla prevenzione, a superare ogni forma di stigma legato al disagio psicologico e a prendersi cura di sé. Un "promemoria gentile" per ricordare che il benessere mentale è un diritto non c'è vera salute senza equili la salute mentale è divenuta una sanitarie. Il costante aumento d chiatrici incide profondamente sulla salute pubblica. È fondam condiviso tra istituzioni, professi consapevolezza e diffondere la c

Teresa Rea Presidente Coordinamento Regionale Opi C

È stata eletta all'unanimità la prof Teresa Rea quale Presidente della Federazione regionale Opi Campania. Nella stessa seduta sono stati eletti sempre all'unanimità, il Vice presidente con delega alla Tesoreria il dott. Rocco Cusano (presidente Opi Avellino) e Segretario la d.ssa Francesca Olivieri (Presidente Opi Benevento). Alla riunione d'insediamento hanno preso parte il dott. Gennaro Mona (Presidente Opi Caserta) e il dott Cosimo Cicia ((Presidente Opi Salerno) anche in qualità Presidente Anziano. Nel corso dell'incontro si è sottolineata l'importanza del coordinamento tra le cinque province della Campania per dare maggiore peso alle politiche professionali in ambito regionale. Tra i temi principali individuati dai cinque presidenti quello della valorizzazione delle competenze infermieristiche, dell'occupazione e della maggiore partecipazione degli infermieri alla definizione e programmazione delle politiche sanitarie regionali.

"Accolgo con molto entusiasmo, ma anche con il necessario senso di responsabilità, questo prestigiosa carica". Ha detto la presidente Opi Napoli e neo coordinatrice regionale Teres leghi presidenti per la fiduc giunto - e condivido con loro con il varo della Federazione guato riconoscimento della pr ai tavoli della programmazi Tutti noi insieme a livelli re forza di circa 45mila iscritti. anche in Campania non pott pubblica equa, universale, pe

mentale

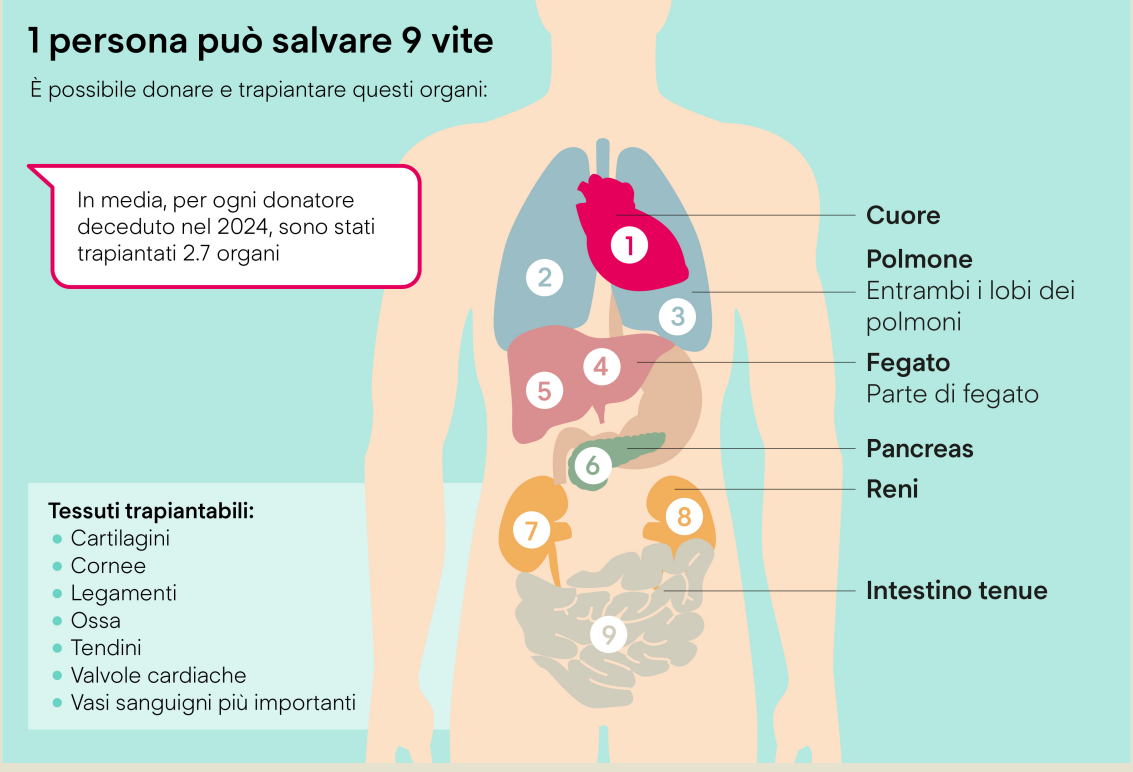
e una responsabilità e che
brio interiore. D'altra parte,
a delle principali emergenze
ei disturbi psicologici e psi-
sul benessere individuale e
nentale, quindi, un impegno
ionisti e cittadini per favorire
cultura della prevenzione.

Campania

sa Rea. "Ringrazio i col-
ia accordatami – ha ag-
l'opportunità da cogliere
regionale per un più ade-
rofessione infermieristica
ione sanitaria regionale.
egionale costituiamo una
Ovvero, senza infermieri
rebbe esistere una sanità
er tutti".

Donazioni d'organi e trapianti. Intesa Opi Napoli e Crt Campania

È stata firmata una importante convenzione tra l'Opi Napoli e il Centro regionale trapianti (Crt) L'intesa ha per oggetto l'attivazione di una collaborazione tra l'Ordine delle professioni infermieristiche di Napoli e il CRT finalizzata a promuovere la cultura della donazione d'organi e la formazione dei professionisti impegnati nel delicato lavoro dei trapianti d'organi. "C'è bisogno di tanta, tanta generosità e sensibilità da parte dei cittadini, di una maggiore informazione e di una sempre più accurata formazione degli operatori sanitari che si dedicano alle donazioni e ai trapianti. Attività che salvano vite e danno speranza a chi è in attesa". Così la prof Teresa Rea, Presidente Opi Napoli e Pierino Di Silverio coordinatore del Crt Campania, in una dichiarazione congiunta dopo la firma dell'accordo. La Convenzione prevede infatti l'organizzazione di eventi formativi accreditati Ecm e non, destinati ai professionisti sanitari iscritti all'OPI di Napoli, per approfondire tematiche legate alla donazione e al trapianto. L'intesa si propone di integrare moduli formativi all'interno dei Corsi di Laurea in Infermieristica (in collaborazione con le Università), con l'obiettivo di sensibilizzare e formare precocemente gli studenti sul tema della donazione. E poi: promuovere attività di sensibilizzazione nelle scuole e nella comunità, anche mediante la partecipazione congiunta a progetti educativi regionali; promuovere l'informazione alla cittadinanza sulla donazione di organi e tessuti attraverso campagne, eventi, incontri pubblici e materiale informativo; favorire la presenza dell'Opi e dei professionisti Infermieri a eventi, manifestazioni e iniziative pubbliche organizzate dai Coordinamenti Territoriali Trapianti delle ASL e delle Aziende Ospedaliere della Campania e altri organismi.



Ospedali & territorio

Record di donazioni e trapianti in Campania

Il 2025 segna per la Campania un cambio di passo netto nella cultura della donazione. Secondo il rapporto CNT, le segnalazioni di potenziali donatori crescono del 36,9% (media nazionali +3,3%), le donazioni effettive aumentano del 36% (sono 68; media nazionale +1,5%), facendo della Campania la regione prima in Italia per incremento percentuale. Anche sul fronte trapianti la curva è positiva: cuore +20% (media nazionale +9,6%), fegato +62,9% (media nazionale +1,3%), rene +25% (a fronte di una media nazionale -6,5%). E ottobre 2025 si consacra come mese record per le segnalazioni dalla nascita del CRT Campania. Alla spinta dei numeri si affianca un'evidenza di partecipazione civica: 432 dei 1.384 "sì" alla donazione raccolta in Italia fino a settembre provengono dalla Campania, quasi un terzo del totale nazionale. Durante le Giornate Napoletane della Salute in Piazza del Plebiscito si è registrato un ulteriore traguardo: 425 dichiarazioni di testimonianza raccolte dai Coordinamenti Territoriali Trapianti presenti in piazza (ASL Napoli 2 Nord, Cardarelli, AO dei Colli, Pascale, Santobono e Vanvitelli). È il segno di una rete che funziona quando ospedali, ASL, professionisti e cittadini dialogano nello stesso spazio. "Questi risultati non sono un caso - dice Pierino Di Silverio, Coordinatore Regionale Trapianti Campania - sono il frutto di un lavoro di rete che ha rimesso al centro organizzazione, formazione e dialogo con i cittadini. La crescita della Campania dice che quando la comunità si fida, la donazione diventa un gesto naturale. Ora investiamo sui giovani: portiamo la verità della donazione nelle aule, perché la scelta informata a 18 anni nasca da conoscenza e responsabilità. È così che si stima le liste d'attesa e si vedono vita a chi aspetta". Su questo terreno "fertile" il Centro Regionale Trapianti ha lanciato il percorso con le scuole, pensato sia come Formazione scuola-lavoro (ex PCTO) sia come giornata di orientamento. Non una lezione frontale, ma un'esperienza: fornire ai ragazzi informazioni corrette per arrivare ai 18 anni capacità di una scelta consapevole; allenarli a diventare "moltiplicatori" di cultura della donazione tra coetanei e adulti; farli entrare in contatto con le storie di chi il trapianto lo attende o lo ha ricevuto.

Santobono Pausilipon, nuovo presidio Cavallino

Sarà presto operativo il nuovo Presidio Cavallino dell'AORN Santobono Pausilipon, realizzato nella rinnovata ex Clinica Villa Bianca, in via Bernardo Cavallino 102 (Napoli). La struttura ha 37 posti letto di cui da segnalazioni 8 di riabilitazione funzionale e 9 di neuropsichiatria infantile. Al suo interno, inoltre, un CUP dedicato, ambulatori di neuropsichiatria infantile, malattie del metabolismo e riabilitazione. Presente un blocco operatorio per le attività chirurgiche e una palestra riabilitativa robotica dotata di apparecchiature innovative per la riabilitazione funzionale di alterazioni motorie ortopediche e neurologiche.

Nel frattempo l'ospedale pediatrico napoletano sale in cima al podio per impianti cocleari con robot. Strumenti di precisione, che uniscono chirurgia robotica e bioingegneria, per affrontare la sordità infantile. È così che l'Unità operativa complessa di Otorinolaringoiatria, diretta da Antonio Della Volpe, primo otochirurgo italiano ad effettuare impianti cocleari con robot su piccoli pazienti pediatrici affetti da sordità profonda, è diventata il centro italiano con il più alto numero di impianti cocleari pediatrici effettuati con robotica chirurgia. A supporto della robotica, la struttura, che è Centro regionale di riferimento per gli impianti cocleari pediatrici della Campania, si avvale della stampante 3D che, nella fase preoperatoria, grazie a una integrazione con le immagini radiologiche, permette di ricostruire le strutture anatomiche dell'osso temporale e della coclea per uno studio preoperatorio dell'anatomia del paziente che consente di valutare il corretto posizionamento del braccio robotico, con l'inclinazione migliore per consentire l'inserimento dell' elettrodo. Questa tecnologia va ad affiancare l'utilizzo dei più innovativi sistemi robotici per la chirurgia dell'impianto cocleare. Da circa due anni, infatti, la struttura, grazie ai Fondi del PNRR, si avvale del sistema robotico in grado di sostituire la mano umana in gesti delicati richiesti nella chirurgia protesica dell'orecchio, superando le limitazioni dei micromovimenti involontari del braccio umano e degli angoli di visibilità limitati nelle zone più complesse dell'orecchio: più di 50 gli interventi effettuati fino ad ora con questa innovativa tecnologia. Oltre a migliorare la chirurgia protesica, questa tecnologia permetterà anche di ampliare l'uso della chirurgia endoscopica "a due mani", una pratica ancora poco diffusa in Europa a causa della sua complessità di esecuzione. "Investire nell'utilizzo delle tecnologie più all'avanguardia e promuovere l'integrazione tra chirurgia e bioingegneria - commenta Rodolfo Conenna, direttore generale dell'Aorn Santobono Pausilipon - significa investire nella medicina del futuro. Siamo un centro di riferimento per la cura della sordità infantile e, grazie a una offerta di cure sempre più specialistiche e personalizzate riusciamo a trattare casi estremamente complessi e ad attrarre pazienti non solo dalla Campania ma anche da fuori regione".

Televisita per pazienti oncologici

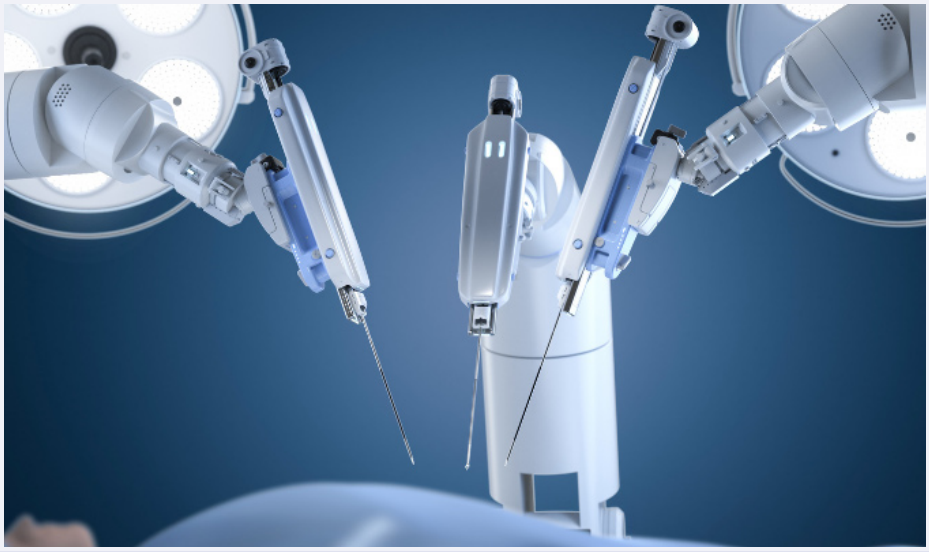
L'Asl Napoli 3 Sud ha attivato il nuovo servizio di televisita dedicato ai rinnovi dei piani terapeutici per i pazienti già in carico presso la struttura aziendale di oncologia. Ad annunciarlo, attraverso un comunicato diretto dal suo ufficio stampa, è la stessa azienda sanitaria. Nella nota viene specificato che "l'obiettivo è quello di semplificare l'accesso alle cure e migliorare la qualità dell'assistenza, offrendo una modalità più comoda e sicura per proseguire i trattamenti". I pazienti potranno ricevere conferma e prosecuzione delle terapie direttamente da casa, evitando spostamenti non necessari e riducendo i tempi di attesa. Come viene specificato dall'Asl, "il servizio è pensato per le sole visite di controllo. Un'evoluzione concreta verso una sanità moderna, accessibile e centrata sulla persona". "L'azienda - afferma il direttore generale Giuseppe Russo - conferma il proprio impegno nell'adozione di strumenti digitali che migliorano l'efficienza dei servizi e favoriscono l'umanizzazione delle cure". La televisita è riservata ai pazienti oncologici già seguiti dalle strutture di riferimento per i rinnovi dei piani terapeutici per le sole visite di controllo. Durante la consultazione da remoto, il medico può valutare lo stato generale del paziente, controllare gli esami clinici aggiornati, procedere al rinnovo della terapia in corso che consiste nella conferma di cura già impostata, senza modifiche al dosaggio, alla tipologia di farmaci. Una modalità che consente di garantire continuità assistenziale, nel rispetto delle esigenze cliniche e personali. Per la modalità di accesso si parte dalla richiesta. Lo specialista oncologo effettua la pre-prenotazione tramite il Cup regionale, verificando l'arruolamento del paziente. Al termine della visita lo stesso paziente riceve referto e stampa della pre-prenotazione. Successivamente, arrivano la prescrizione da parte del medico di famiglia e la prenotazione dal portale del cittadino Sinfonia.

All'Ospedale del Mare nuova Pet digitale

È già in funzione presso l'Unità operativa complessa di Medicina nucleare dell'Ospedale del Mare una nuova Tac Pet digitale. L'apertura è avvenuta in presenza della direzione strategica aziendale, della direzione ospedaliera, dell' equipe della Unità Operativa di Medicina Nucleare e della Unità Operativa di Ingegneria Clinica. Il nuovo tomografo Pet digitale di ultima generazione risulta essere unico per caratteristiche tecnologiche in tutto il Centro-Sud Italia. Si tratta di un traguardo di grande rilievo per la struttura ospedaliera e per l'intera rete sanitaria regionale, che potrà ora contare su un sistema diagnostico di altissima precisione, in grado di migliorare significativamente l'efficacia clinica e la cura del paziente. La nuova tecnologia digitale consente di ottenere immagini ad altissima risoluzione, con una sensibile riduzione dei tempi di acquisizione e della dose di radioattività somministrata, a beneficio della sicurezza e del comfort degli utenti. L'innovazione permetterà inoltre di potenziare le capacità diagnostiche soprattutto in ambito oncologico e neurologico, rendendo la Medicina Nucleare dell'Ospedale del Mare, un punto di riferimento per la sanità ad alta specializzazione in Campania.

Al Pascale la mastectomia robotica con Robot Single Port

Il nuovo blocco operatorio inaugurato quest'estate all'Ospedale di Caserta. rappresenta un importante ammodernamento della dotazione tecnologica sanitaria in Campania. Le nuove sale operatorie sono infatti progettate per accogliere tecnologie di ultima generazione, rendendo l'ospedale di Caserta sempre più efficiente e all'avanguardia. Questo potenziamento infrastrutturale si inserisce nel percorso di consolidamento del ruolo del nosocomio come Dea di secondo livello, riferimento fondamentale per un bacino di utenza che sfiora il milione di abitanti.



Ruggi (SA) attivata la Car-t Cell Therapy

Una nuova e importante opzione terapeutica si aggiunge a quelle già disponibili all'Azienda Ospedaliero Universitaria San Giovanni di Dio e Ruggi d'Aragona di Salerno. È di oggi, infatti, l'annuncio dell'avvio delle attività cliniche di CAR-T Cell Therapy presso l'UOC di Ematologia e Centro Trapianti di Midollo Osseo, diretta dal professor Carmine Selleri. Si tratta, spiega l'Aazienda ospedaliera, "di un passo rilevante per l'oncologia ematologica del Mezzogiorno, che consente di offrire ai pazienti terapie innovative e ad alto impatto clinico direttamente sul territorio. Il programma CAR-T è stato avviato a seguito dell'accreditamento JACIE (Joint Accreditation Committee ISCT-Europe & EBMT), riconoscimento internazionale che certifica l'aderenza a rigorosi standard di qualità e sicurezza nei percorsi di terapia e terapia cellulare. L'Unità Operativa di Ematologia e Centro Trapianti di Midollo Osseo ha inoltre completato i processi di qualifica per la somministrazione delle terapie prodotte dalle principali aziende impegnate nello sviluppo delle CAR-T. Queste terapie di ultima generazione potranno essere utilizzate contro i linfomi non-Hodgkin, la leucemia linfoblastica acuta dell'adulto e il mieloma multiplo nei pazienti che non alle terapie standard". "L'attivazione del programma - sottolinea il direttore generale Ciro Verdoliva - rafforza il ruolo della nostra Azienda Ospedaliero Universitaria quale centro di riferimento regionale e interregionale". I pazienti candidabili potranno essere indirizzati al Centro di Salerno attraverso un percorso condiviso con la Rete Ematologica Campana, che garantirà omogeneità di trattamento, equità di accesso e prossimità delle cure. "In questo modo - conclude Verdoliva - sarà possibile diminuire i trasferimenti extraregionali, offrendo ai pazienti del Sud Italia terapie avanzate in un contesto clinico qualificato e certificato". La terapia CAR-T È una delle più recenti e innovative strategie di immunoterapia contro alcuni tumori, soprattutto ematologici. Consistono nel prelevare i linfociti T del paziente (cellule del sistema immunitario), che in laboratorio vengono ingegnerizzati per esprimere un recettore artificiale capace di riconoscere un bersaglio specifico presente sulle cellule tumorali. Una volta "armati", i linfociti CAR-T vengono reinfusi nel paziente, diventando veri e propri "cacciatori" in grado di distruggere selettivamente le cellule malate. Si tratta di una terapia personalizzata e considerata rivoluzionaria perché, in un numero significativo di casi, ha portato a remissioni complete anche in pazienti refrattari ad altre cure.

Al Cardarelli prima angiosuite in Italia dedicata a emergenza

L'ospedale Cardarelli di Napoli è la prima struttura sanitaria pubblica italiana a dotarsi di una sala con "angiosuite" che potrà gestire sia l'emergenza che le attività in elezione. L'altra macchina dello stesso genere è presente in Italia solo all'Io di Milano - ospedale privato - ed è usata solo per le procedure in elezione. L'investimento per la nuova tecnologia del Cardarelli è stato di circa 3 milioni di euro ed è stato effettuato attingendo a fondi ministeriali per l'innovazione tecnologica in ambito sanitario. La nuova sala consentirà di effettuare in un unico ambiente le procedure che prima si realizzavano in Sala operatoria e nei reparti di Radiologia e Radiologia Interventistica, evitando di spostare il paziente e riducendo così i tempi di intervento. L'integrazione tra le diverse tecnologie, inoltre, permette di avere delle immagini di altissimo dettaglio, aumentando la precisione di intervento del Radiologo interventista. L'angiosuite, infatti, permette di acquisire le immagini dei vasi sanguigni attraverso l'angiografo e le immagini degli organi e delle ossa attraverso la tac; le informazioni raccolte dai due sistemi vengono integrate da un software di modellazione 3d che restituisce una visione estremamente affidabile e dettagliata al medico. Questa tecnologia apre nuove possibilità di intervento anche nell'ambito dei trattamenti percutanei in oncologia, evidenziando al Radiologo una mappa puntuale dei vasi danneggiati, consentendo biopsie estremamente precise e garantendo tempi di recupero rapido al paziente. La Radiologia interventistica dell'ospedale Cardarelli, diretta da Raffaella Niola, è l'unico reparto in Italia in cui i medici sono presenti, in guardia attiva, h24, permettendo un'estrema velocità di intervento per la gestione dei pazienti in emergenza e una riduzione dei tempi di ospedalizzazione. Soltanto nel 2024 sono stati effettuati ben 11.185 procedure, di cui 4mila urgenti (il 40% circa), 8.465 a beneficio di pazienti interni e 1.290 per l'utenza esterna, provenienti cioè da ospedali ed altre strutture del territorio (seconde cure) o da aziende in convenzione. L'Unità operativa complessa di Radiologia interventistica può contare oggi su 53 unità in totale (10 medici, 22 Tecnici di Radiologia, 18 Infermieri e 3 OSS) ed è sede di formazione nazionale ed internazionale accreditati dalla Società europea di Radiologia cardiovascolare e interventistica.

Santobono, innovativo robot per calcolosi nei bimbi

L'Unità Operativa Complessa di Urologia Pediatrica del Santobono è il primo centro pediatrico ad adottare un innovativo robot per il trattamento della calcolosi nei bambini, una particolare tecnologia resa possibile grazie al sostegno dell'ETS (Ente del Terzo Settore) "SOS Santobono". Lo rende noto un comunicato dell'ospedale pediatrico partenopeo. endoscopico flessibile fino a localizzare il calcolo. Una volta raggiunta, possiamo procedere alla sua polverizzazione grazie a un innovativo laser ibrido al tullio". "Negli ultimi anni - aggiunge - l'incidenza della calcolosi renoureterale in età pediatrica è aumentata di circa il 20%, probabilmente per le mutate abitudini alimentari e per l'aumento dell'obesità infantile". Per Rodolfo Conenna, direttore generale dell'Aorn Santobono Pausilipon, "l'ospedale Santobono si conferma all'avanguardia grazie alle sinergie tra la Nefrologia Pediatrica, diretta da Gabriele Malgieri, e la Chirurgia Urologica Pediatrica, diretta da Giovanni Di Iorio. Negli ultimi anni questa collaborazione ha permesso di offrire ai piccoli pazienti tecniche sempre più moderne e mininvasive, fondamentali per chi deve affrontare trattamenti ripetuti nel corso della vita". "La combinazione tra competenze specialistiche e tecnologie d'avanguardia assicura ai bambini cure sempre più efficaci e sicure, rafforzando il ruolo dell'AORN Santobono Pausilipon come polo pediatrico di riferimento nazionale", conclude il direttore generale dell'Aorn Santobono Pausilipon.

Nola, Risonanza magnetica d'eccellenza

Una nuova risonanza magnetica che utilizza una tecnologia avanzatissima e che è il fiore all'occhiello della diagnostica per immagini nell'intera Campania. È questa l'ultima tappa del processo di ammodernamento tecnologico e strutturale che si sta realizzando nell'ospedale Santa Maria della Pietà. Come quella appena dotata all'ospedale di Nola ce ne sono solo altre pochissime in Italia e soprattutto è l'unica in Campania. L'occasione giusta per parlare anche del raddoppio del nosocomio e dell'investimento di 20 milioni di euro per migliorare l'efficienza di un presidio che è riferimento per oltre 500mila cittadini. Poi a Casamarciano c'è una decisa accelerata per la casa di comunità. Si tratta di una struttura dove saranno collocate le tecnologie necessarie, dove ci saranno medici di base, infermieri e psicologi. Ci sarà anche la possibilità di una piccola chirurgia per trattare piccole ferite». Infine l'auspicio: Fine lavori, giugno 2026.

Pacemaker senza fili: l'Umberto I eccellenza italiana

È un primato tricolore. Per la prima volta in Italia è stata applicata una tecnica che rappresenta una vera rivoluzione nel campo dell'elettrostimolazione cardiaca. Nel reparto di cardiologia dell' ospedale Umberto I di Nocera inferiore è stato impiantato su una donna un pacemaker senza fili. Dopo due ore la paziente era già a casa. «Ed è proprio la riduzione dei tempi di permanenza in ospedale uno dei vantaggi di questa innovativa tecnica ha spiegato il primario Antonello D'Andrea - nello stesso tempo si riducono le liste di attesa per carenza di posti letto». Cambia anche l'approccio di come impiantare il pacemaker "leadless".

«Lo si fa ha precisato il dottore Gianluca Manzo, coordinatore dell'equipe di elettrostimolazione attraverso la vena giugulare. L'impianto eseguito in maniera tradizionale, invece, avviene attraverso la vena femorale destra, approccio che presuppone comunque un periodo minimo di immobilizzazione del paziente in ospedale». Il pacemaker senza fili è un sistema di stimolazione cardiaca miniaturizzato e senza elettrocateteri. «La procedura di impianto dei pacemaker senza fili ha sottolineato Manzo - è meno invasiva rispetto ai dispositivi tradizionali. Non ci sono cateteri e non c'è bisogno di una tasca sottocutanea per il dispositivo. Tutto questo riduce il rischio di infezioni». Questa nuova tipologia di accesso, per via giugulare, senza l'uso di elettrocateteri consente il posizionamento dell'apparecchio direttamente nel cuore.

«Tutto ciò ha sottolineato D'Andrea - permette di ridurre ulteriormente le complicanze se comparato con un impianto convenzionale, ma soprattutto consente al paziente di alzarsi subito dopo l'intervento stesso». Il pacemaker tradizionale, presidio salvavita per i pazienti con bradiaritmie, richiede normalmente l'impianto di un elettrocatetere attraverso una vena succlavia che, successivamente, viene collegato al generatore di impulsi posizionato in regione sottoclaveare, in una tasca sotto pelle creata chirurgicamente, e può esporre il paziente a complicanze, soprattutto di sanguinamento locale ed infezioni. Soddisfazione è stata espressa dal direttore generale dell'Asl Salerno. «È un primato che ci inorgoglisce ha sottolineato Gennaro Sosto - premia l'azione costante di questa Asl volta all'implementazione di nuove tecniche e tecnologie, ed all'acquisizione di professionalità sempre più qualificate». L'ospedale di Nocera ora fa scuola. L'azienda ha annunciato che questo modello gestionale sarà esteso a tutte le altre cardiologie dell'Asl Salerno dotate di servizio di elettrostimolazione.

Malattia oculare tiroidea nuove cure alla Federico II

«Esistono oggi nuove terapie che aprono prospettive di cura più efficaci per la TED – ha spiegato Diego Strianese, docente di Oftalmologia e direttore della Scuola di Specializzazione alla Federico II di Napoli – parliamo di una patologia di difficile diagnosi su cui diventa centrale l'integrazione di competenze specialistiche diverse all'interno di reti assistenziali strutturate e coordinate. Le nuove terapie permettono di antagonizzare gli effetti locali di ormoni associati a crescita e proliferazione cellulare del tessuto retroorbitario ma occorrono linee guida e percorsi di accesso standardizzati». «La malattia oculare in corso di patologia autoimmune endocrina è una complicanza molto severa, anche se piuttosto rara, che oggi può avere un approccio mirato ed efficace grazie ai nuovi farmaci antagonisti IGF-1 – aggiunge Anna Maria Colao, ordinario di Endocrinologia, Cattedra Unesco, della Federico II - la patologia dà luogo a un progressivo esoftalmo, retrazione palpebrale, proptosi oculare e altri sintomi. Diagnosi precoce e trattamento adeguato, medico prima che chirurgico, sono oggi possibili nell'ambito di percorsi integrati di diagnosi e presa in carico dei malati». Il tasso di prevalenza? È di 8,97 casi ogni 10 mila abitanti: in Campania corrispondono a circa 5 mila pazienti, non pochi considerando che la modifica dello sguardo e della visione possono compromettere vita di relazione e lavorativa. «È necessario garantire l'accesso appropriato a queste nuove cure - ha aggiunto Francesca Simonelli, ordinario di oftalmologia della Vanvitelli - integrando le attività di diagnosi e cura di oculisti, endocrinologi, psicologi, chirurghi puntando alla definizione di percorsi e linee guida nazionali e regionali». Sulla stessa lunghezza d'onda gli interventi di Vincenzo Nuzzo, direttore del dipartimento di Medicina e post acuzie della Asl Napoli 1, Giuseppe Bellastella ordinario di Endocrinologia e Malattie del metabolismo della Federico II (che ha ricordato l'importanza, di smettere di fumare, assumere selenio e usare le statine contro il colesterolo) possono aiutare le pazienti a ridurre l'incidenza dei sintomi più gravi), e Francesco Scavezzo, direttore della Endocrinologia del Cardarelli che ha sottolineato il ruolo guida di centri di riferimento come i grandi ospedali sede di percorsi multispecialistici già collaudati.

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EFFECTIVENESS OF TAPPING AND MASSAGE TECHNIQUE IN PROMOTING VENOUS DILATION FOR PERIPHERAL INTRAVENOUS CATHETER INSERTION: A SYSTEMATIC REVIEW

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Review article

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ABSTRACT

Introduction: Peripheral intravenous catheter (PIVC) insertion is a common clinical procedure, yet achieving successful venous access, particularly at the first attempt, remains a significant challenge. Techniques such as tapping and massage have been proposed to enhance venous dilation and facilitate cannulation.

Objective: This study aims to evaluate and compare the effectiveness of tapping and massage each compared to tourniquet-only application, in promoting peripheral venous dilation.

Materials and Methods: This study is a systematic review conducted following the PRISMA 2020 guidelines. A systematic search was conducted in PubMed, Scopus, MEDLINE, and CINAHL. All databases were accessed in April 2025 to retrieve studies published between January 2015 and April 2025. Studies were eligible if they involved adult participants, compared tapping and/or massage with standard tourniquet application or control, and reported outcomes related to vein diameter, cross-sectional area, or palpability. Quality assessment was performed using the NIH Quality Assessment Tool and for the risk of bias was used the ROBINS-I.

Results: Tapping was associated with modest improvements in vein diameter and palpability in some studies, but not in others. Massage showed improvements in palpability, yet no clear advantage over tapping was consistently demonstrated. No clear clinical advantage of one technique over the other was consistently demonstrated, and no study assessed outcomes such as first-attempt success rate. Methodological limitations included small sample sizes, and lack of randomization.

Conclusions: Both tapping and massage may promote venous dilation in young, healthy adults, but the evidence is limited. The generalizability of these findings to broader clinical populations, including elderly patients and those with difficult venous access, is uncertain. High-quality studies involving diverse populations and standardized outcome measures are needed to establish the effectiveness of these techniques in routine clinical practice.

Keywords: tapping technique, massage technique, venous dilation, peripheral intravenous catheter, phlebotomy, venipuncture.

INTRODUCTION

Peripheral intravenous catheter (PIVC) placement is a common procedure performed in approximately 80% of hospitalized patients to administer infusion solutions and antibiotics [1]. It is one of the most commonly recommended vascular access methods for short-term infusion therapy (≤7 days) and administration of low-osmolarity or low-irritation drugs [2,3]. It is also approved for emergency situations, regardless of the drugs administered [4]. The demand for PIVC in older adults is increase due to the rapid growth of the aging population [5]. However, several studies have reported higher initial failure rates of PIVC insertion in older adults up to 39% compared to younger adults, where rates range from 12% to 30% [6]. PIVC failure not only leads to complications and delayed treatments but also affects patient's quality of life and increases healthcare costs [7].

For safe and successful PIVC insertion, it is crucial to select an appropriate vein. Traditionally, vein selection is based on visual inspection, palpation, or imaging techniques such as infrared or ultrasound devices. Larger veins are generally recommended for easier cannulation [8], and achieving adequate venous dilation is essential for the procedure's success. Current guidelines recommend inserting the PIVC into the forearm cutaneous veins rather than the median cubital vein, due to considerations of daily activities and lower complication risks [9,10]. However, the forearm veins are thinner, branch more peripherally, and are often more difficult to access compared to the median cubital vein [11]. As a result, between 12% and 26% of patients require multiple attempts for successful PIVC insertion following an initial failure [12]. Repeated PIVC punctures increase the risk of complications such as pain, nerve damage, and accidental arterial puncture [13]. Furthermore, these multiple attempts result in additional time and staffing costs associated with the procedure [14]. Difficulty in establishing peripheral intravenous access is a common clinical challenge, particularly in patients with fragile

veins, obesity, dehydration, or chronic illnesses [15]. Failed first-attempt cannulation can delay treatment, increase patient discomfort, and raise healthcare costs. Nurses are primarily responsible for PIVC placement in most clinical settings [16]. Therefore, identifying and applying effective, evidence-based techniques to facilitate venous dilation is a key component of nursing practice, with direct implications for patient safety and quality of care [17]. Understanding which technique whether tapping, massaging, or other methods is the most effective in promoting venous dilation is essential for optimizing clinical practice. Evidence-based recommendations are needed to guide nurses in selecting the best approach, ensuring both procedural success and patient comfort [18]. PIVC insertion relies on palpation to identify a vein's Therefore, it is essential to ensure adequate venous dilation and to carefully select an appropriate vein for PIVC insertion through palpation. The most commonly used technique for promoting venous dilation involves applying a tourniquet to induce venous stasis [19]. However, relying solely on a tourniquet may not always provide sufficient dilation. To enhance the effect of the tourniquet, nurses often instruct patients to open and close their fist or maintain a clenched fist. Additionally, they may massage the forearm, tap over the vein [20], or apply warmth to the forearm [21].

Among these methods, tapping and massaging are proactive techniques in which the nurse provides direct stimulation to the vein. These techniques do not require the patient's active participation or the use of additional equipment, and they can be implemented quickly and easily in various clinical situations [22]. Tapping is recommended when the target vein is not prominent and/or needs to be made more prominent for venipuncture [23] and is an effective method of vasodilation [24]. The following factors are reported to be involved in vasodilation mechanisms by tapping: the production of nitric oxide (NO) and other vasoactive substances from the endothelium by mechanical stress, such as shear stress, and the axon reflex associated with pain stimulation [25]. Despite the widespread use of techniques such as tapping and massaging in clinical practice, current international guidelines lack specific recommendations regarding their effectiveness in promoting venous dilation [26]. Limited

studies have investigated the physiological mechanisms and clinical efficacy of these manual stimulation techniques, highlighting the need for further research to establish evidence-based best practices.

Purpose

This systematic review aims to evaluate and compare the effectiveness of tapping and massage each compared to tourniquet-only application, in promoting peripheral venous dilation.

MATERIALS AND METHODS

We conducted a systematic review following the preferred reporting items for systematic reviews and meta-analyses, the PRISMA statement version 2020 [26]. We used the PICO (Table 1) framework.

POPOLATION	Patients undergoing peripheral intravenous catheter (PIVC) insertion
INTERVENTION	Tapping or massage as techniques for venous dilation
COMPARISON	Tourniquet
OUTCOME	Efficacy of techniques in promoting venous dilation, measured by changes in vein diameter, cross-sectional area and vein palpability.

Table 1. *PICO framework*

Eligibility Criteria

We included both observational and experimental studies that: involved patients undergoing peripheral intravenous catheter (PIVC) insertion; compared tapping and/or massage with tourniquet-only or control techniques; reported outcomes related to venous dilation, such as vein diameter, cross-sectional area, or palpability; were published in English in peer-reviewed journals from January 2015 to April 2025. We excluded: studies on pediatric or animal populations; systematic reviews, commentaries, letters, and abstracts; studies involving non-manual techniques (ultrasound-guided cannulation or pharmacologic interventions). We excluded pediatric patients, elderly individuals, and those with chronic conditions because the available literature on this topic primarily involved healthy

adult participants. This choice reflects the current scope of published evidence rather than a methodological preference.

Search Strategy

We performed a comprehensive literature search in PubMed, Scopus, MEDLINE (via EBSCOhost), and CINAHL. The literature search covered the period from January to April 2025. All databases were accessed in April 2025. We used relevant MeSH terms and Boolean operators. A full list of search strings is reported in Table 2.

DATABASE	SEARCH STRING
PubMed	("phlebotomy"[MeSH Terms] OR "phlebotomy"[All Fields] OR "venipuncture"[All Fields] OR "venipunctures"[All Fields] OR ("phlebotomy"[MeSH Terms] OR "phlebotomy"[All Fields] OR "phlebotomies"[All Fields]) OR (("cutaneous"[All Fields] OR "cutaneously"[All Fields] OR "cutanous"[All Fields]) AND ("vein s"[All Fields] OR "veins"[MeSH Terms] OR "veins"[All Fields]))) AND ("mechanical"[All Fields] OR "mechanically"[All Fields] OR "mechanicals"[All Fields] OR "mechanics"[MeSH Terms] OR "mechanics"[All Fields] OR "mechanic"[All Fields] OR ("tapped"[All Fields] OR "tapping"[All Fields] OR "tappings"[All Fields]) OR ("massage"[MeSH Terms] OR "massage"[All Fields] OR "massages"[All Fields] OR "massaged"[All Fields] OR "massager"[All Fields] OR "massagers"[All Fields] OR "massaging"[All Fields]) OR ("palpate"[All Fields] OR "palpated"[All Fields] 24/04/2025 120 9 OR "palpates"[All Fields] OR "palpating"[All Fields] OR "palpation"[MeSH Terms] OR "palpation"[All Fields] OR "palpations"[All Fields] OR "palpator"[All Fields] OR "palpators"[All Fields])) AND ((("veins"[MeSH Terms] OR "veins"[All Fields] OR "vein"[All Fields]) AND ("visibilities"[All Fields] OR "visibility"[All Fields] OR "visible"[All Fields] OR "visibles"[All Fields])) OR ("veins"[MeSH Terms] OR "veins"[All Fields] OR "venous"[All Fields]) OR ("venodilating"[All Fields] OR "venodilation"[All Fields] OR "venodilator"[All Fields] OR "venodilators"[All Fields]) OR ("vasodilate"[All Fields] OR "vasodilated"[All Fields] OR "vasodilates"[All Fields] OR "vasodilating"[All Fields] OR "vasodilation"[MeSH Terms] OR "vasodilation"[All Fields] OR "vasodilations"[All Fields] OR "vasodilative"[All Fields] OR "vasodilator agents"[Pharmacological Action] OR "vasodilator agents"[Supplementary Concept] OR "vasodilator agents"[All Fields] OR "vasodilator"[All Fields] OR "vasodilator agents"[MeSH Terms] OR ("vasodilator"[All Fields] AND "agents"[All Fields]) OR "vasodilators"[All Fields]))
SCOPUS	(INDEXTERMS (phlebotomy) OR ALL (phlebotomy) OR ALL (venipuncture) OR ALL (venipunctures) OR (INDEXTERMS (phlebotomy) OR ALL (phlebotomy) OR ALL (phlebotomies)) OR ((ALL (cutaneous) OR ALL (cutaneously) OR ALL (cutanous)) AND (ALL ("vein s") OR INDEXTERMS (veins) OR ALL (veins)))) AND (ALL (mechanical) OR ALL (mechanically) OR ALL (mechanicals) OR INDEXTERMS (mechanics) OR ALL (mechanics) OR ALL (mechanic) OR (ALL (tapped) OR ALL (tapping) OR ALL (tappings)) OR (INDEXTERMS (massage) OR ALL (massage) OR ALL (massages) OR ALL

	(massaged) OR ALL (massager) OR ALL (massagers) OR ALL (massaging)) OR (ALL (palpate) OR ALL (palpated) OR ALL (palpates) OR ALL (palpating) OR INDEXTERMS (palpation) OR ALL (palpation) OR ALL (palpations) OR ALL (palpator) OR ALL (palpators))) AND (((INDEXTERMS (veins) OR ALL (veins) OR ALL (vein)) AND (ALL (visibilities) 24/04/2025 282 52 OR ALL (visibility) OR ALL (visible) OR ALL (visibles))) OR (INDEXTERMS (veins) OR ALL (veins) OR ALL (venous)) OR (ALL (venodilating) OR ALL (venodilation) OR ALL (venodilator) OR ALL (venodilators)) OR (ALL (vasodilate) OR ALL (vasodilated) OR ALL (vasodilates) OR ALL (vasodilating) OR INDEXTERMS (vasodilation) OR ALL (vasodilation) OR ALL (vasodilations) OR ALL (vasodilative) OR ALL ("vasodilator agents") OR CHEM (term) OR ALL ("vasodilator agents") OR ALL (vasodilator) OR INDEXTERMS ("vasodilator agents") OR (ALL (vasodilator) AND ALL (agents)) OR ALL (vasodilators))) AND (LIMIT-TO (SUBJAREA , "NURS"))
MEDLINE	((MH phlebotomy+) OR phlebotomy OR venipuncture OR venipunctures OR ((MH phlebotomy+) OR phlebotomy OR phlebotomies) OR ((cutaneous OR cutaneously OR cutanous) AND ("vein s" OR (MH veins+) OR veins))) AND (mechanical OR mechanically OR mechanicals OR (MH mechanics+) OR mechanics OR mechanic OR (tapped 24/04/2025 143 OR tapping OR tappings) OR ((MH massage+) OR massage OR massages OR massaged OR massager OR massagers OR massaging) OR (palpate OR palpated OR palpates OR palpating OR (MH palpation+) OR palpation OR palpations OR palpator OR palpators)) AND ((((MH veins+) OR veins OR vein) AND (visibilities OR visibility OR visible OR visibles)) OR ((MH veins+) OR veins OR venous) OR (venodilating OR venodilation OR venodilator OR venodilators) OR (vasodilate OR vasodilated OR vasodilates OR vasodilating OR (MH vasodilation+) OR vasodilation OR vasodilations OR vasodilative OR "vasodilator agents" OR (MW "vasodilator agents") OR "vasodilator agents" OR vasodilator OR (MH "vasodilator agents+") OR (vasodilator AND agents) OR vasodilators))
CINAHL	((MH phlebotomy+) OR phlebotomy OR venipuncture OR venipunctures OR ((MH phlebotomy+) OR phlebotomy OR phlebotomies) OR ((cutaneous OR cutaneously OR cutanous) AND ("vein s" OR (MH veins+) OR 24/04/2025 40 veins))) AND (mechanical OR mechanically OR mechanicals OR (MH mechanics+) OR mechanics OR mechanic OR (tapped OR tapping OR tappings) OR ((MH massage+) OR massage OR massages OR massaged OR massager OR massagers OR massaging) OR (palpate OR palpated OR palpates OR palpating OR (MH palpation+) OR palpation OR palpations OR palpator OR palpators)) AND ((((MH veins+) OR veins OR vein) AND (visibilities OR visibility OR visible OR visibles)) OR ((MH veins+) OR veins OR venous) OR (venodilating OR venodilation OR venodilator OR venodilators) OR (vasodilate OR vasodilated OR vasodilates OR vasodilating OR (MH vasodilation+) OR vasodilation OR vasodilations OR vasodilative OR "vasodilator agents" OR (MW "vasodilator agents") OR "vasodilator agents" OR vasodilator OR (MH "vasodilator agents+") OR (vasodilator AND agents) OR vasodilators))

Table 2. *Search String*

Study Selection

After removing duplicates, two authors (RC and MA) independently screened titles and abstracts. Full texts were retrieved when eligibility was unclear. Discrepancies were resolved through discussion. The selection process followed PRISMA 2020 recommendations and was supported by Rayyan software [27], while to organize and manage the references we used Zootero.

Data Extraction

Two authors independently extracted data using a predefined form. Extracted information included author, year, country, study design, sample size, participant characteristics, intervention, and main outcomes. Final verification was conducted by RC and MA.

Quality Assessment and Risk of Bias

Methodologically, two authors (RC, MA) independently assessed the quality of the included articles using tools from the National Institutes of Health (NIH) [28] for observational and controlled intervention studies. The first author (RC) was the final decider of the overall quality assessment. The quality assessment criteria included the following items:

Q1. Clear statement of objectives

Q2. Adequacy of sample size

Q3. Clear description of participant characteristics

Q4. Description of intervention techniques (tapping, massage, or control)

Q5. Description of outcome measures (venous diameter, cross-sectional area, palpability)

Q6. Appropriateness of data analysis methods

Q7. Use of validated outcome measures

Q8. Blinding of outcome assessors

Q9. Randomization process described

Q10. Allocation concealment

Q11. Reporting of dropout, or missing data

Q12. Reporting of study limitations

Q13. Ethical approval and consent

The summary of the study quality assessment is shown in Table 3.

Authors	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13
Ichimura et al., 2015 [30]	Y	N	Y	Y	Y	Y	Y	N	N	N	Y	Y	Y
Yasuda et al., 2019 [31]	Y	N	Y	Y	Y	Y	Y	N	N	N	Y	Y	Y
Yasuda et al., 2020 [32]	Y	N	Y	Y	Y	Y	Y	N	N	N	Y	Y	Y
Yasuda et al., 2023 [33]	Y	N	Y	Y	Y	Y	Y	N	N	N	Y	Y	Y

Legend: Y: YES (the study met the criterion); N: NO (the study did not meet the criterion).

Table 3. *Quality assessment table Summary of studies quality assessment based on NIH*

From the table, we can deduce that all studies responded positively (Y) to most of the criteria related to the description of interventions, outcomes, statistical analyses, participants, and ethical approval (Q1, Q3–Q7, Q11–Q13). However, common limitations were identified in the criteria related to randomization procedures (Q2, Q9), blinding of outcome assessors (Q8), and allocation concealment (Q10), where all studies showed an "N". This indicates that, while the studies provided a clear description of interventions and outcomes, they lacked critical information about how participants were allocated to groups (randomization), how blinding was implemented, and how selection bias was avoided (allocation concealment). Furthermore, all included studies were conducted exclusively on young and healthy adult populations (ages 20–29 years), limiting the generalizability of findings to broader clinical contexts.

The risk of bias in the included studies was assessed using the ROBINS-I (Risk Of Bias In Non-randomized Studies - of Interventions) tool [29]. This tool evaluates the risk of bias across seven domains using three judgements (serious, moderate and low): confounding (D1), selection of participants (D2), classification of interventions (D3), deviations from intended interventions(D4), missing data (D5), measurement of outcomes (D6), and selection of reported results. This system allowed a clear visualization of potential sources of bias across the studies.

The final judgment was based on a consensus between two independent authors, with the first two authors (RC, MA) acting as the final decision-maker in case of disagreements. Given the quasi-

experimental nature of the included studies, ROBINS-I [29] was considered the most appropriate method for evaluating bias in this systematic review. (Figure 1)

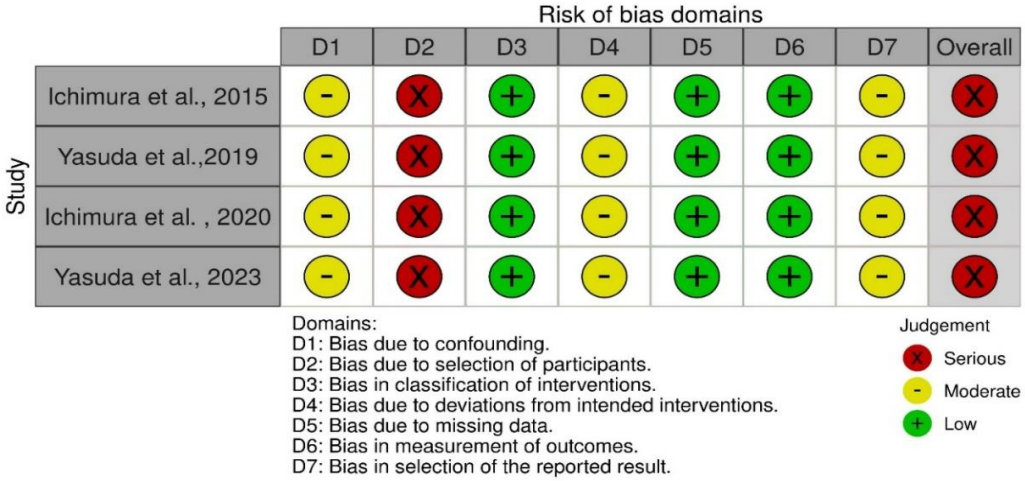

Figure 1. *Risk of bias assessment in the selected articles according to ROBINS-I tool.*

In summary, all four studies showed moderate to serious concerns across several domains, particularly due to lack of randomization details, blinding, potential confounding factors, and small sample sizes. These methodological limitations, combined with the exclusive inclusion of young healthy adult participants, should be taken into account when interpreting the findings.

RESULTS

A total of 585 records were identified through database searches (PubMed: 120; Scopus: 282; MEDLINE: 143; CINAHL: 40). After removing 120 duplicates, 465 records remained for title and abstract screening. Of these, 442 were excluded based on inclusion criteria. Twenty-three full-text articles were assessed, and 4 studies met all eligibility criteria and were included in the final synthesis (see PRISMA flow diagram, Figure 2).

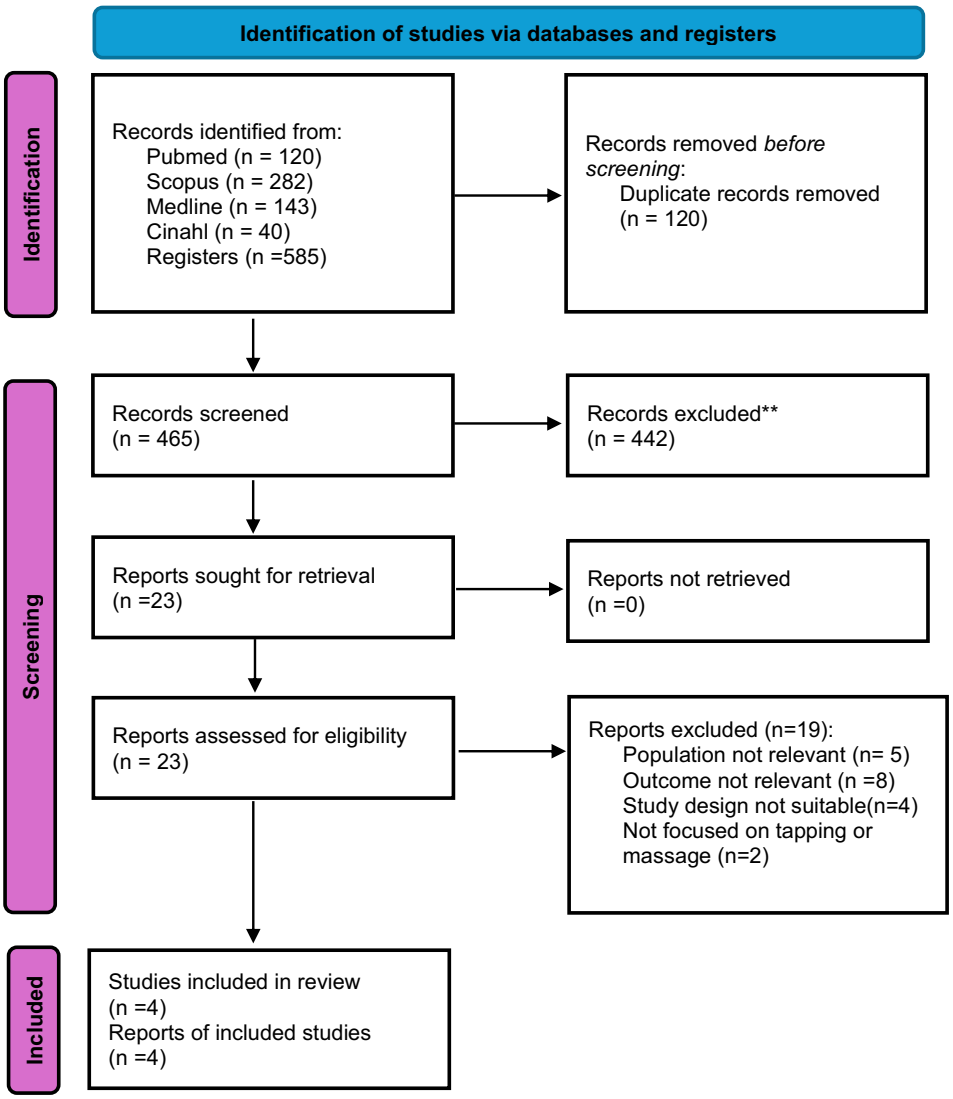

Figure 2. *Prisma flowchart for literature search*

All included studies were conducted in Japan between 2015 and 2023 and involved a total of 120 healthy adult participants, mostly nursing students with a mean age between 20 and 29 years. The designs were either quasi-experimental or observational. The interventions evaluated included tapping, massage, and tourniquet-only techniques, aimed at enhancing venous dilation prior to PIVC insertion. A total of four studies met the inclusion criteria. This limited number reflects the current scarcity of primary research focused on the use of tapping and massage techniques for peripheral

venous access.

The primary outcomes of interest were vein diameter (mm), vein cross-sectional area (mm^2), and vein palpability (score). The vein diameter and cross-sectional area were measured using ultrasound in experimental designs, while the vein palpability were assessed through palpation scores in quasi-experimental or observational studies. For quantitative studies that reported statistical comparisons, we collected available data such as means, standard deviations, and, where applicable, p-values, odds ratios (OR), and 95% confidence intervals (CI) (Table 4). No studies reported clinical endpoints such as first-attempt success rate.

Study	Intervention	Outcome measure	Tapping (mean ± SD)	Massage (mean ± SD)	Control (mean ±SD)	p-value	OR	95% CI
Ichimura et al., 2015 [30]	Tapping, Control	Vein diameter (mm)	2.98± 0.45	-	2.51±0.38	<0.01	1.75	1.15-2.35
Yasuda et al., 2019 [31]	Tapping, Massage	Vein palpability (score)	4.5±0.6	3.8±0.7	3.2±0.5	<0.01	2.1	1.40-2.80
Ichimuda et al., 2020 [32]	Tapping, Massage	Cross-sectional area (mm^2)	6.45±1.32	5.87±1.20	5.32±1.15	<0.05	1.65	1.05-2.25
Yasuda et al., 2023 [33]	Tapping, Massage	Vein diameter (mm)	3.12 ± 0.54	2.85±0.49	2.72±0.44	<0.01	1.85	1.20-2.50

SD: standard deviation

Table 4. *Interventions, outcomes and available data of the selected studies*

General Characteristics

The studies were conducted in laboratory settings, maintaining a controlled environment similar to clinical conditions (temperature 22-24℃, humidity 45-65%) consistent with summer hospital standards. Participants were seated with their arms on a shape [30-32] or supine keeping their forearms on the bed during the intervention [33]. The populations studied were exclusively composed of healthy young adults aged approximately 20-29 years, without clinical comorbidities or indications

of difficult venous access (DVA). It is important to note that the inclusion of young, healthy volunteers was a limitation dictated by the available literature, as no studies involving older adults, hospitalized patients, or individuals with comorbidities were found in the literature search. Therefore, the generalizability of the findings to broader patient populations remains limited. All studies compared tapping (a light, repetitive mechanical stimulation applied to the skin) and/or massage (manual pressure and friction techniques) with a control group where only a tourniquet was used. The primary outcomes measured were:

- Venous diameter (mm): assessed using ultrasound, representing the width of the vein (n=4; 100%)
- Cross-sectional area (mm^2): a two-dimensional measure of the vein's size, assessed using ultrasound (n=3; 75%)
- Vein palpability (score): a qualitative measure of how easily the vein could be felt during palpation (n=3; 75%)

No studies assessed the first-attempt success rate of peripheral intravenous catheter (PIVC) insertion or reported clinical outcomes related to successful cannulation. (Table 5).

Author(s) (year)	Aim	Study design	Participants	Evaluation methods	Effect of tapping	Effect of massage
Ichimira et al., 2015 [30]	To compare tapping and control groups for vein diameter	Experimental study	40 ha (20 yrs)	Ultrasound	Increased diameter	Not assessed
Yasuda et al.,2019 [31]	To assess vein palpability under different stimulation techniques	Quasi Experimental study	30 ha (20-29 yrs)	Palpation score	Higher palpability	Moderate palpability)
Ichimura et al., 2020 [32]	To evaluate cross-sectional area increase through tap	Experimental study	20 ha (19-22 yrs)	Ultrasound	Higher increase	Moderate increase
Yasuda et al., 2023 [33]	To evaluate the effect of tap and mas on -vein diameter	Quasi Experimental study	40 ha (20-29 yrs)	Ultrasound	Greater increase in vein diameter	Moderate increase in vein diameter

Tap= tapping; Mas= massage; healthy adult= ha; yrs= years. Tapping showed higher numerical values compared to massage, but differences were not consistently statistically significant across all studies.

Table 5. *Characteristics of studies included.*

DISCUSSION

This systematic review aimed to evaluate the effects of tapping and massage techniques on venous dilation during peripheral intravenous catheter (PIVC) placement, compared to the standard use of a tourniquet alone. The findings suggest that both interventions may help improve vein visibility and diameter, offering a potential advantage in clinical practice, especially in settings where vascular access is challenging. Physiologically, gentle cutaneous stimulation is believed to enhance local blood flow through neurovascular mechanisms, including sympathetic reflexes and activation of mechanoreceptors [24,25]. While the included studies employed different approaches to measurement such as ultrasound imaging [30,32,33] and palpation [31,33], they all reported improvements in vein dilation following tapping or massage, supporting the hypothesis that these techniques promote local vasodilation. Although all included studies reported positive effects of tapping or massage on vein dilation, the magnitude and consistency of these effects varied. Two studies [30,32] measured outcomes using ultrasound, reporting significant increases in vein diameter and cross-sectional area following intervention. One study [31] assessed palpability scores through subjective evaluation, while another [33] used a combination of both methods. These methodological differences likely contributed to the variation in outcomes observed.

Importantly, the effectiveness of tapping and massage techniques may vary based on patient characteristics. All included studies were conducted on healthy young adults aged between 20 to 29 years. This homogeneous population limits the generalizability of findings to broader clinical contexts, such as elderly patients or those with chronic conditions (e.g., diabetes, obesity), who may present different venous characteristics or an increased risk of difficult venous access (DVA). None of the studies stratified results by specific comorbidities or clinical variables, making it difficult to assess the potential differential effects of the interventions in diverse patient populations. The modifiable factors analyzed in the included studies were related to the application of tapping or massage techniques before peripheral intravenous catheter (PIVC) insertion. [Table 4] Tapping

showed a greater impact on vein diameter (OR range 1.75 – 2.10), vein cross-sectional area (OR range 1.65 – 1.85), and vein palpability (OR range 1.85 – 2.10) compared to control conditions. However, the differences between tapping and massage were not statistically significant, suggesting that both techniques may have comparable effects. The studies consistently demonstrated that both tapping and massage significantly increase venous dilation compared to control, likely due to the mechanical stimulation triggering the release of nitric oxide and other vasodilators. Massage was also associated with improved vein diameter and palpability, although the effects were generally less pronounced than tapping. No studies reported adverse events associated with either tapping or massage. Regarding non-modifiable factors, none of the studies explicitly analyzed demographic variables such as age or gender in relation to venous dilation outcomes. These findings suggest that both tapping and massage are simple, effective, and low-cost interventions for improving venous dilation prior to PIVC insertion, particularly in patients with difficult venous access. Most existing guidelines continue to focus primarily on tourniquet use and warming techniques, while both tapping and massage remain underutilized in clinical practice. This review highlights the need to consider incorporating tapping and massage into standard protocols, as these techniques have shown comparable efficacy in promoting venous dilation. Although none of the included studies specifically investigated patients with difficult venous access (DIVA), it is reasonable to hypothesize that such techniques could offer clinical benefits in this population, where failed attempts can lead to delays, discomfort, and increased resource utilization. However, further research is required to confirm their effectiveness in more complex clinical scenarios. Comparison with existing literature, also, highlights an underutilization of these techniques in clinical guidelines. Most vascular access protocols continue to emphasize traditional methods such as tourniquet application, fist clenching, or local warming [2,21,26], while manual techniques like tapping and massage are seldom formally recommended despite their frequent use in practice [20,22]. This disconnect may stem from the lack of high-quality studies evaluating these methods. However, tapping has shown a clear physiological rationale through its stimulation of

nitric oxide release and vasodilatory reflexes [24,25,32], reinforcing its potential value in pre-cannulation practice. Importantly, none of the reviewed studies reported adverse effects associated with these interventions [30-33]. Despite their promise, the current evidence base is limited by several methodological shortcomings. This review has several limitations. First, all included studies were conducted on small, homogeneous samples of young, healthy adults, and were conducted in Japan which limits the external validity of the findings. None of the studies used randomization or blinding, increasing the risk of selection and performance bias. Sample sizes were generally small, and no power analyses were reported. Additionally, outcome assessment methods varied widely (e.g., ultrasound vs. subjective palpation), which hindered direct comparison across studies. The studies included standardized outcome measures (vein diameter, cross-sectional area, palpability), ensuring comparability of results. However, limitations include the small number of studies (n = 4), limited geographical representation, and the absence of data on pediatric, oncology, or chronic disease populations. These factors limit the ability to draw broad clinical recommendations. Finally, the overall methodological quality of the included studies was moderate, and the risk of bias was found to be moderate to serious, particularly in relation to confounding variables and outcome measurement. Despite these limitations, the results are promising. The consistency of findings suggests a potential benefit that warrants further investigation in patients with greater vascular access difficulty. Tapping and massage are simple, non-invasive, and cost-effective techniques that could be integrated into standard practice to facilitate vascular access, particularly in emergency departments, outpatient clinics, or in cases where veins are difficult to locate. These findings provide a preliminary but meaningful foundation for future clinical trials with more rigorous design, broader populations, and standardized outcome measures. Rather than representing a limitation of our review process, the small number of eligible studies highlights a significant gap in literature.

This review contributes to mapping and critically analyzing the available evidence on this underexplored topic.

Strengths

A key strength of this review is the focused synthesis of experimental [28, 30] o quasi experimental [29,31] evidence on a specific intervention (tapping and massage) for a well-defined outcome (venous dilation prior to PIVC). By focusing on a specific, yet clinically relevant topic, this review addresses a clear gap in the literature and offers practical insights for improving pre-cannulation practices. The methodology followed PRISMA 2020 guidelines, with a robust search strategy across multiple databases and a transparent risk of bias assessment using the ROBINS-I tool [29], ensuring a rigorous and reproducible approach. The inclusion of objective outcome measures such as vein diameter, cross-sectional area, and palpability adds further strength to the review. The review aims to spark interest in future research and contribute to the development of evidence-based guidelines for vascular access optimization. Furthermore, this review highlights the need for a paradigm shift in vascular access practices. While guidelines traditionally emphasize tourniquet application and warming techniques, simple, hands-on interventions like tapping and massage remain largely overlooked in clinical protocols. By shedding light on these low-cost, non-invasive strategies, this review advocates for their potential role in standard vascular access preparation, especially in resource-limited settings where advanced technologies may not be readily available.

CONCLUSIONS

This review suggests that tapping and massage techniques, when used in conjunction with a tourniquet, may improve peripheral vein dilation and palpability in healthy adults. Although the evidence is preliminary and limited by the methodological quality of the studies, the results point to simple, low-cost strategies that could support more effective intravenous access—particularly in clinical situations where veins are difficult to locate. From a practical perspective, these interventions may offer nurses a non-invasive tool to enhance vascular access success, potentially reducing patient discomfort and the need for repeated attempts. Future research should aim to confirm these effects

through randomized controlled trials involving larger and more diverse populations. Standardized outcome measures and long-term follow-up will be essential to validate the efficacy and safety of these techniques in real-world clinical settings. Further high-quality primary research is urgently needed to strengthen the evidence base and support future systematic reviews with greater methodological robustness.

Registration

This work has been archived in Prospero with ID CRD420251066139.

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Conflict of interest

The authors report no conflict of interest.

Authors' contributions

RC and MA were the major contributors in writing the manuscript. VM, and AL performed the data collection and interpreted the patient data. All authors read and approved the final manuscript.

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EXPLORING SELF-EFFICACY, FAMILY SUPPORT, AND POSTPARTUM DEPRESSION IN MOTHERS AFTER CRYPTIC PREGNANCY: A CROSS-SECTIONAL STUDY

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ABSTRACT

Introduction: Cryptic pregnancy, or the delayed recognition of pregnancy until late gestation, poses unique psychological challenges for mothers due to the lack of prenatal preparation and sudden transition to motherhood. These circumstances may increase the risk of postpartum depression. Protective factors such as maternal self-efficacy and family support are believed to play an important role in reducing depressive symptoms after childbirth.

Objective: The purpose of this study is (1) to analyze the relationship between maternal self-efficacy and postpartum depression among mothers with a history of cryptic pregnancy, (2) to analyze the relationship between family support and postpartum depression, and (3) to assess the extent to which maternal self-efficacy and family support predict postpartum depression levels.

Materials and Methods: A cross-sectional study was conducted in Jombang Regency, East Java, Indonesia, from May to August 2025, involving 104 mothers with a history of cryptic pregnancy recruited by non-probability snowball sampling. Maternal self-efficacy was assessed using the 15-item questionnaire developed by Witungga et al. (2024; $\alpha = 0.916$), family support with the 14-item questionnaire by the same authors ($\alpha = 0.836$), and postpartum depression with the Edinburgh Postnatal Depression Scale (EPDS; Adli, 2022). Data were analyzed using Spearman's rank correlation and ordinal logistic regression.

Results: Most respondents had moderate self-efficacy (72.1%), fair family support (65.4%), and no signs of postpartum depression (68.3%). Spearman's correlation showed significant negative associations between self-efficacy ($\rho = –0.426$, $p = 0.001$) and family support ($\rho = –0.398$, $p = 0.002$) with postpartum depression. Multivariate ordinal logistic regression indicated that both self-efficacy ($B = –0.462$, $p = 0.014$, OR = 0.63, 95% CI = 0.44–0.91) and family support ($B = –0.518$, $p = 0.012$, OR = 0.60, 95% CI = 0.40–0.89) were significant protective factors, jointly explaining 28.9% of variance in postpartum depression (Nagelkerke $R^2 = 0.289$).

Conclusion: Maternal self-efficacy and family support are significant protective factors against

postpartum depression in mothers with cryptic pregnancy. Strengthening maternal confidence and empowering family support systems are essential strategies to mitigate depressive symptoms in this vulnerable group.

Keywords: cryptic pregnancy, family support, maternal self-efficacy, postpartum depression

INTRODUCTION

Postpartum depression (PPD) is a major public health concern, affecting approximately 10–20% of mothers worldwide, with higher prevalence reported in low- and middle-income countries (LMICs) compared to high-income settings [1,2]. In Indonesia, national surveys have shown increasing rates of postpartum depressive symptoms, with prevalence reaching 11.2% in East Java in 2023, indicating a substantial and growing burden [3]. Despite these numbers, many cases remain undetected due to limited screening and strong sociocultural norms that discourage disclosure of psychological distress. One critical factor influencing maternal adaptation is the level of social and family support. Numerous studies demonstrate that family support functions as a protective buffer against PPD, with inadequate support consistently linked to more severe depressive symptoms [4]. In particular, emotional responsiveness from partners and close relatives helps reduce maternal stress, facilitates the adjustment process to motherhood, and strengthens the bond between mother and infant. On the other hand, rejection, blame, or neglect from family members can worsen emotional instability and increase the risk of depressive outcomes.

Another important determinant of maternal well-being is maternal self-efficacy, defined as a mother's belief in her ability to successfully care for her infant. Evidence indicates that higher maternal self-efficacy is associated with reduced depressive symptoms, more effective coping strategies, and better overall postpartum adjustment [5,6]. Mothers with low self-efficacy often report feelings of helplessness, decreased motivation to provide infant care, and heightened vulnerability to depression.

Strengthening maternal confidence is therefore essential to preventive and therapeutic interventions in postpartum mental health.

Cryptic or denied pregnancy represents a unique context that has received little empirical attention. In this condition, pregnancy remains unrecognized until late gestation or even the onset of labor. Although traditionally considered rare, recent reviews suggest cryptic pregnancies may occur more frequently than previously assumed, and they present distinct psychosocial challenges for both mothers and families [7]. The lack of preparedness, combined with social stigma and disrupted family dynamics, places these mothers at particular risk of postpartum psychological distress. Yet, systematic research on PPD in women with cryptic pregnancies remains extremely limited.

Nurses play a central role in maternal and child health by conducting early screening, providing psychosocial education, and strengthening family-centered care systems. Understanding how maternal self-efficacy and family support influence postpartum depressive symptoms among mothers with cryptic pregnancies is therefore critical for nursing practice and policy.

Objective: This study aims to (1) analyze the relationship between maternal self-efficacy and postpartum depression among mothers with a history of cryptic pregnancy, (2) to analyze the relationship between family support and postpartum depression among mothers with a history of cryptic pregnancy, and (3) to assess the extent to which maternal self-efficacy and family support predict postpartum depression levels among mothers with a history of cryptic pregnancy.

MATERIALS AND METHODS

Study Population

This study was conducted in Jombang Regency, East Java, Indonesia, from April to July 2025. The target population included women who had experienced a cryptic pregnancy within the last one to two years. Due to the rarity and sensitive nature of cryptic pregnancy, a non-probability snowball

sampling technique was employed. An initial group of participants (seed respondents) identified through community health centers and local networks served as starting points, and they referred other eligible women who had undergone similar experiences. A total of 104 respondents were successfully recruited.

The study protocol adhered to the ethical principles outlined in the Declaration of Helsinki and was approved by the Scientific and Ethics Committee of the Institute for Learning Development and Quality Assurance, Institute of Science and Health Technology Insan Cendekia Medika Jombang (Ref: LP3M/ICME/ETIK/0425/2025). All participants were fully informed about the study's objectives and procedures and provided written informed consent prior to participation.

Inclusion Criteria

Participants were eligible for inclusion if they were women aged 18–40 years who had experienced a cryptic pregnancy that resulted in a live birth within the previous 12 months. They were required to be able to read and write in Indonesian, possess adequate cognitive capacity to complete the questionnaire independently, and provide informed consent voluntarily. These criteria were established to ensure that participants could fully understand and respond to the study instruments with accuracy and autonomy.

Exclusion Criteria

Women were excluded from the study if they had a current diagnosis or documented history of major psychiatric disorders such as schizophrenia, bipolar disorder, or major depressive disorder prior to the pregnancy. Additionally, individuals who had experienced fetal loss (miscarriage or stillbirth), or who were undergoing psychiatric treatment unrelated to postpartum depression at the time of data collection, were also excluded. These exclusion criteria aimed to minimize potential confounding effects on the assessment of postpartum depression symptoms.

Instruments

Three validated instruments were used in this study. Maternal self-efficacy was measured using a 15-item Likert-scale questionnaire developed by Witungga et al. (2024), with a Cronbach's alpha of 0.916; responses ranged from 1 (strongly disagree) to 4 (strongly agree), and scores were categorized as low, moderate, or high. Family support was assessed using a 14-item questionnaire also developed by Witungga et al. (2024), with a Cronbach's alpha of 0.836; each item was scored dichotomously (yes = 2, no = 1), and total scores were classified into poor, sufficient, or good support [8]. Postpartum depression was evaluated using the Edinburgh Postnatal Depression Scale (EPDS), originally developed by Cox, Holden, and Sagovsky (1987) and adapted into Indonesian by Adli (2022); this 10-item scale assesses maternal mood in the past week, with each item scored from 0 to 3 for a total range of 0–30, where higher scores indicate greater depressive severity. The EPDS has consistently demonstrated robust psychometric properties across international studies, with Cronbach's alpha values ranging from 0.80 to 0.88 and sensitivity above 85% in detecting postpartum depression [9].

Variables

The independent variables in this study were maternal self-efficacy (categorized into low, moderate, and high) and family support (categorized into poor, fair, and good). The dependent variable was postpartum depression, measured by the Edinburgh Postnatal Depression Scale (EPDS) and categorized into three levels: no signs of depression, depression may be present, and clear signs of depression. Sociodemographic characteristics were included as control variables, consisting of age, last educational attainment, marital status, occupation, family income, place of residence, number of children (including the child from the cryptic pregnancy), gestational age at the time the pregnancy was discovered, previous pregnancy history, access to healthcare, mode of delivery, presence of a birth companion, complications during pregnancy or delivery, and history of mental health problems. Household income was recorded in Indonesian Rupiah (IDR) and converted to United States Dollars

(USD) using the 2025 average exchange rate (1 USD ≈ 15,500 IDR) to enhance international readability.

Statistical Analysis

All data were analyzed using SPSS software version 26 for Windows. Descriptive statistics were employed to summarize the sociodemographic characteristics of the participants. The Kolmogorov–Smirnov test was used to assess data normality and indicated that the data were not normally distributed ($p < 0.05$). Spearman's rank correlation test was used to evaluate the relationships between maternal self-efficacy, family support, and postpartum depression. To further identify the strength and direction of predictors on postpartum depression levels, ordinal logistic regression analysis was conducted. This method is appropriate given the ordinal nature of the dependent variable and non-normal data distribution. Statistical significance was defined as a *p-value* less than 0.05.

RESULTS

Sample Characteristics

The mean age of respondents was 28.45 years (SD = 6.14), with the largest proportion aged 25–29 years (32.7%). More than half had completed secondary education (55.8%), were married (89.4%), and worked as housewives (68.3%). More than half of the participants reported a monthly family income between 152 and less than 304 USD (55.8%), with a mean income of 139.78 USD (SD = 88.55) and a median of 187.46 USD (IQR = 44.87–210.26), and the majority resided in urban areas (60.6%). Nearly half had two children, including the child from the cryptic pregnancy (44.2%), and most discovered their pregnancy in the third trimester (≥ 28 weeks) (61.5%); a considerable proportion reported previous pregnancies, including unplanned pregnancy or miscarriage (44.2%). Access to healthcare was most frequently moderate, requiring 30–60 minutes with limited transportation (50%). The most common mode of delivery was spontaneous vaginal delivery at a

healthcare facility (48.1%), with most accompanied by a husband or family member during childbirth (67.3%). The majority experienced no pregnancy or delivery complications (72.1%) and none reported a history of mental health disorders (100%). Self-efficacy assessments indicated that self-efficacy was predominantly moderate (72.1%), while family support was most often fair (65.4%). Regarding postpartum depression, most mothers exhibited no signs of depression (68.3%), while nearly one-third showed possible symptoms (31.7%). Table 1 shows the demographic data of respondents.

Characteristic	Category	n (%)	M (SD)	Median (IQR)
Sociodemographic of Respondent				
Age	< 20	9 (8.7%)		
	20–24	20 (19.2%)		
	25–29	34 (32.7%)	28.45 (6.137)	28 (24 – 33)
	30–34	21 (20.2%)		
	≥ 35	20 (19.2%)		
Last educational attainment	Basic education (Elementary School or equivalent)	46 (44.2%)		
	Secondary education (Junior/Senior High School or equivalent)	58 (55.8%)		
	Higher education (Diploma, Bachelor's, or Postgraduate)	0 (0%)		
Marital Status	Married	93 (89.4%)		
	Unmarried	3 (2.9%)		
	Divorced/Widowed	8 (7.7%)		
Occupation	Housewife	71 (68.3%)		
	Employed	22 (21.2%)		
	Unemployed	4 (3.8%)		
	Others	7 (6.7%)		
Family income	< USD 60,79	45 (43.3%)		
	USD 152 ≤ 304	58 (55.8%)	USD 139.78 (88.55)	USD 187.46 (44.87 – 210.26)
	≥ USD 303,93	1 (1.0 %)		
Place of residence	Urban	63 (60.6%)		
	Rural	41 (39.4 %)		
Number of children (including children during cryptic pregnancy)	1 child	42 (40.4 %)		
	2 children	46 (44.2%)		
	≥ 3 children	16 (15.4%)		
Gestational age at the time the pregnancy was discovered	< 12 weeks (1st trimester)	19 (18.3%)		
	12–27 weeks (2nd trimester)	21(20.2%)		
	≥ 28 weeks (3rd trimester)	64 (61.5%)		
Previous Pregnancy History	No previous pregnancy	27 (26.0%)		
	Yes, all planned pregnancies	31 (29.8%)		
	Yes, including unplanned pregnancy/miscarriage	46 (44.2%)		
Access to healthcare	Easy (≤ 30 minutes,	32 (30.8%)		

	transportation available)			
	Moderate (30–60 minutes, limited transportation)	52 (50%)		
	Difficult (> 60 minutes, poor transportation access)	20 (19.2%)		
Mode of delivery	Spontaneous/vaginal at a healthcare facility	50 (48.1%)		
	Spontaneous/vaginal at home	20 (19.2%)		
	Cesarean section (C-section) at a healthcare facility	24 (23.1%)		
	Others (e.g., without medical assistance)	10 (9.6%)		
Presence of a birth companion	Husband/Family	70 (67.3%)		
	Healthcare provider	32 (30.8%)		
	Alone/No attendant	2 (1.9%)		
Complications during Pregnancy or delivery	None	75 (72.1%)		
	Present	29 (27.9%)		
Mental health history	None	104 (100%)		
Self - Efficacy	Low	0 (0%)		
	Moderate	75 (72.1%)	32.45 (5.812)	32 (28 – 37)
	High	29 (27.9%)		
Family Support	Poor	0 (0%)		
	Fair	68 (65.4%)	28.63 (4.925)	29 (25–32)
	Good	36 (34.6%)		
Postpartum Depression	No signs of depression	71 (68.3%)		
	Depression may be present	33 (31.7%)	10.82 (3.214)	11 (9 – 13)
	Clear signs of depression	0 (0%)		

Abbreviations: n = number; % = percentage; M = mean**;** SD = standard deviation; IQR = interquartile range; USD = United States Dollar. All variables had complete data (n = 104).

Table 1. *Sociodemographic, Self – Efficacy, Family Support and Postpartum Depression.*

Relationship Between Self-Efficacy and Postpartum Depression

The Spearman correlation test results indicate a negative and significant relationship between self-efficacy and postpartum depression, with a correlation coefficient of $\rho = -0.426$ and a significance value of *p value* = 0.001 (Table 2). This finding suggests that higher levels of self-efficacy are associated with lower levels of postpartum depression. The strength of the relationship is moderate and remains statistically significant.

Variable	M (SD)	Median (IQR)	Sig. (2-tailed) Spearman Correlation
Self-efficacy	32.45 (5.812)	32 (28 – 37)	Correlation coefficient $\rho = -0.426$, *p value* = 0.001**
Postpartum depression	10.82 (3.214)	11 (9 – 13)	

*p < 0.05, **p < 0.01, SD = standard deviation, IRQ = interquartile range [Q1, Q3]; M = mean.

Table 2. *Relationship Between Self-Efficacy and Postpartum Depression (N = 104).*

Figure 1 presents a scatter plot showing a moderate negative correlation ($\rho = -0.426$, p *value* = 0.001) between self-efficacy and postpartum depression. This correlation suggests that higher levels of maternal self-efficacy are associated with lower levels of postpartum depression. The results also indicate that the relationship between these two variables is moderate and statistically significant.

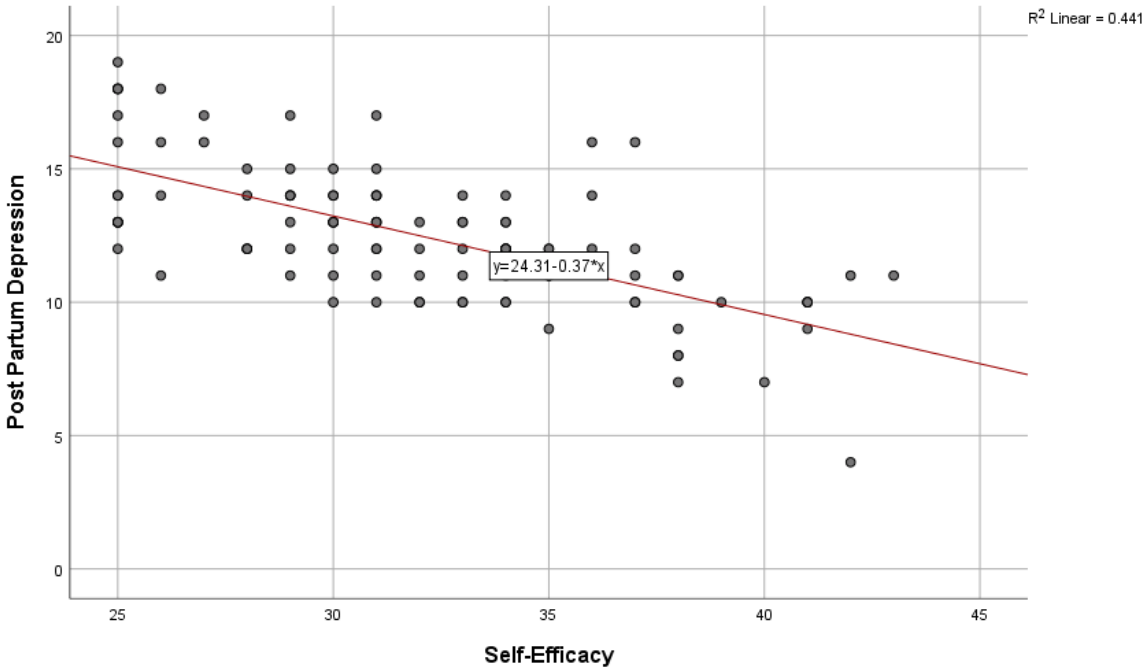

Figure 1. *Scatter Plot of Postpartum Depression Levels by Self-Efficacy Levels. The trend line is in red.*

The crosstabulation analysis further shows the distribution of respondents based on self-efficacy levels and postpartum depression symptoms (Table 3).

Self-Efficacy	Postpartum Depression		Total
	No signs of depression	Depression may be present	
Moderate	55	20	75
High	16	13	29
Total	71	33	104

Table 3. *Crosstabulation of Self-Efficacy and Postpartum Depression.*

Among those with moderate self-efficacy, 55 mothers reported no signs of depression, while 20 mothers showed possible signs of depression, totaling 75 individuals. In contrast, among those with high self-efficacy, 16 mothers reported no signs of depression and 13 mothers experienced possible depression, totaling 29 individuals.

Relationship Between Family Support and Postpartum Depression

Correlation analysis using Spearman's correlation coefficient indicates a negative and significant relationship between family support and postpartum depression, with a correlation coefficient of ρ = –0.398 and a significance value of *p value* = 0.002 (Table 4). This suggests that higher levels of family support are associated with lower levels of postpartum depression, and the strength of this relationship is moderate and statistically significant.

Variable	M (SD)	Median (IQR)	Sig. (2-tailed) Spearman Correlation
Family support	28.63 (4.925)	29 (25–32)	Correlation coefficient ρ = –0.398, *p value* = 0.002**
Postpartum depression	10.82 (3.214)	11 (9–13)	

*p < 0.05, **p < 0.01, SD = standard deviation, IRQ = interquartile range [Q1, Q3]; M = mean.

Table 4. *Relationship Between Family Support and Postpartum Depression (N = 104)*

Figure 2 presents a scatter plot to visualize the joint values for the family support and postpartum depression variables, and to observe possible relationships, trends, between the variables. We observed from Figure 2 a moderate negative correlation (ρ = –0.398, *p value* = 0.002) between family support and postpartum depression. This correlation suggests that higher levels of family support are associated with lower levels of postpartum depression. The results also indicate that the relationship between these two variables is moderate and remains statistically significant.

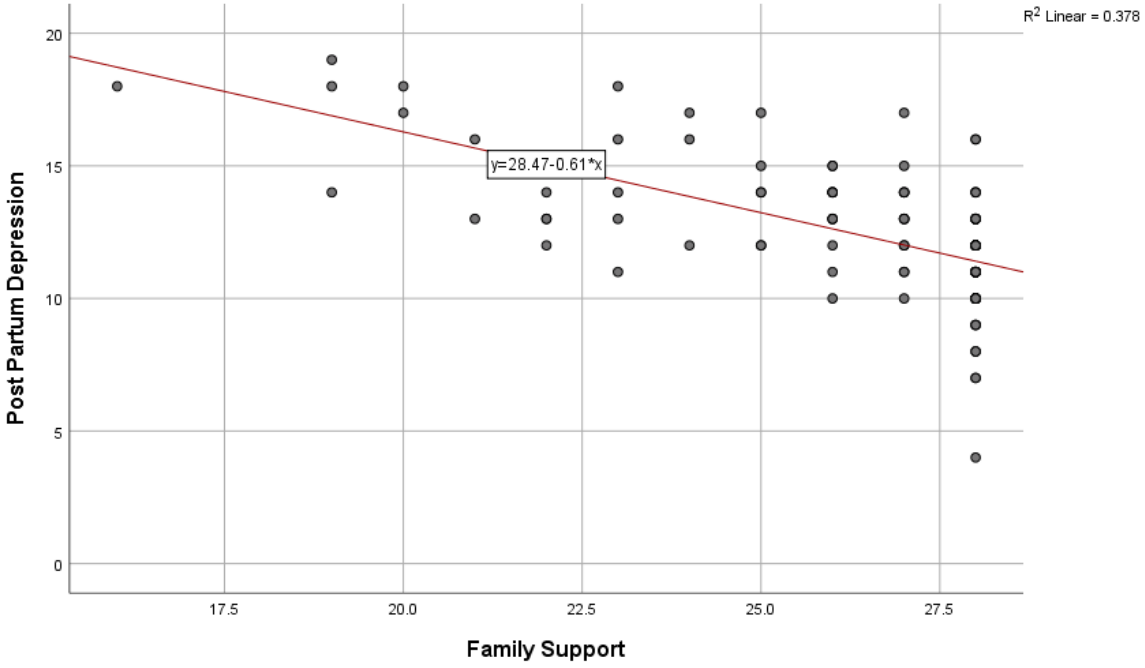

Figure 2. *Scatter Plot of Postpartum Depression Levels by Family Support Levels. The trend line is in red.*

The crosstabulation analysis further shows the distribution of respondents based on family support and postpartum depression symptoms (Table 5).

Family Support	Postpartum Depression		Total
	No signs of depression	Depression may be present	
Fair	44	24	68
Good	27	9	36
Total	71	33	104

Table 5. *Crosstabulation of Family Support and Postpartum Depression*

Among mothers with fair family support, 44 reported no signs of depression while 24 experienced possible signs of depression, totaling 68 individuals. Conversely, among those with good family support, 27 mothers reported no depression and 9 mothers experienced possible depression, totaling 36 individuals.

The Combined Effect of Maternal Self-Efficacy and Family Support on Postpartum Depression

The results of the multivariate ordinal logistic regression analysis showed that both maternal self-efficacy and family support have significant effects on postpartum depression. The overall model shows a Nagelkerke R^2 value of 0.289, indicating that the combination of maternal self-efficacy and family support explains 28.9% of the variability in postpartum depression levels.

In Table 6, we reported the results of the multivariate ordinal logistic regression analysis of maternal self-efficacy and family support on postpartum depression.

Predictor	B	SE	Wald	OR (Exp(B))	95% CI for OR	*p value*
Maternal self-efficacy	-0.462	0.188	6.030	0.63	0.44 – 0.91	0.014 *
Family support	-0.518	0.205	6.367	0.60	0.40 – 0.89	0.012 *
-2 Log Likelihood						178.21
Nagelkerke R^2						0.289

*Significant at $p < 0.05$

Table 6. *Multivariate Ordinal Logistic Regression of Maternal Self-Efficacy and Family Support on Postpartum Depression (n = 104).*

The parameter estimates indicate that maternal self-efficacy has a significant negative association with postpartum depression (B = –0.462, Wald = 6.018, *p value* = 0.014, OR = 0.63, 95% CI = 0.44–0.91). This means that mothers with higher self-efficacy are less likely to experience postpartum depression. Similarly, family support also shows a significant negative association with postpartum depression (B = –0.518, Wald = 6.367, *p value* = 0.012, OR = 0.60, 95% CI = 0.40–0.89), indicating that greater family support reduces the risk of postpartum depression. These findings suggest that maternal self-efficacy and family support are both protective factors against postpartum depression, and their combined contribution highlights the importance of strengthening personal and social resources for mothers during the postpartum period.

DISCUSSION

This study demonstrates that maternal self-efficacy has a significant negative relationship with postpartum depression among mothers with a history of cryptic pregnancy. This aligns with the first objective of the study, which was to examine the association between self-efficacy and depressive symptoms. The finding supports Bandura's theory of self-efficacy, which emphasizes the individual's belief in their ability to organize and carry out tasks as a key factor in managing stress and emotional well-being [9]. Mothers with higher self-efficacy are able to adapt more effectively to the demands of motherhood, thereby lowering their vulnerability to depression. In the context of cryptic pregnancy, where mothers experience limited prenatal preparation, reduced medical supervision, and a sudden transition to motherhood, self-efficacy becomes an essential psychological resource [10]. Similar results have been reported in other countries. For instance, Chase et al. (2021) found that low maternal self-efficacy was strongly associated with higher levels of postpartum depression, suggesting that interventions aimed at improving confidence can be applied across different cultural settings [11].

The second objective of the study was to examine the role of family support in maternal mental health. Family support also showed a significant negative association with postpartum depression, reinforcing the importance of social and cultural contexts. Support from close relatives, especially spouses, provides emotional reassurance, practical help, and a sense of security, all of which buffer against the stress of childbirth and early parenting [12]. This result echoes findings from Delong et al. (2022), who demonstrated that social support plays a protective role in maternal well-being and strengthens maternal–infant interactions [13]. In Indonesia, where collectivist culture and family involvement in childcare are deeply rooted, family support becomes even more crucial. Mothers who experience cryptic pregnancy may feel shocked, unprepared, or even stigmatized due to the late discovery of their condition. In such situations, family members, particularly nurses within the community or family health settings, play a vital role in reducing stigma and supporting maternal adjustment [14].

The third objective of the study was to explore the combined effects of maternal self-efficacy and family support. The multivariate regression analysis confirmed that these two factors jointly predict postpartum depression, explaining nearly one-third of the variance. This suggests that personal psychological resources and external social support interact to shape maternal mental health outcomes. Comparable results have been found in other regions, where interventions that simultaneously enhance coping skills and involve family members proved more effective in reducing postpartum depression than those focusing on a single factor [15]. From a nursing perspective, this highlights the need for nurses to not only build mothers' confidence through education and counseling but also to engage families in the care process [16]. The clinical implication is that nursing practice in both community and hospital settings should adopt a family-centered approach to maternal mental health. Furthermore, for future research, cross-cultural studies could provide valuable insights into how these factors operate in different healthcare systems and societies, and how nurses can tailor interventions to local needs.

Limitations

This study has several limitations. First, the use of a snowball sampling technique limits the representativeness of the sample and increases the risk of selection bias, as respondents were recruited through networks and may not reflect the broader population of mothers with cryptic pregnancy. Second, the reliance on self-reported questionnaires raises the possibility of recall bias and social desirability bias, where participants may underreport depressive symptoms or overstate family support. Third, this study did not control for other important psychosocial or environmental variables, such as marital conflict, domestic violence, or financial instability, which may independently contribute to postpartum depression. Fourth, the research was conducted in a single geographic area (Jombang Regency, East Java), and thus the findings may be influenced by local cultural norms and may not be generalizable to other populations with different sociocultural backgrounds. Finally, the

cross-sectional design of this study prevents causal inferences, as it only identifies associations rather than longitudinal patterns. Future studies should adopt prospective or longitudinal designs with random sampling to establish causal pathways and improve external validity.

CONCLUSION

According to this study, maternal self-efficacy and family support are significant protective factors against postpartum depression among mothers with a history of cryptic pregnancy. Mothers with higher self-efficacy and stronger family support are less likely to experience depressive symptoms after childbirth. These findings reinforce previous evidence that both personal psychological resources and social environments are central in determining maternal mental health outcomes. The study highlights the urgent need for interventions that not only enhance maternal self-efficacy through counseling, psychoeducation, and peer support but also strengthen family involvement in postpartum care. Given that cryptic pregnancy presents unique psychological challenges due to the sudden recognition of pregnancy, integrated strategies focusing on both individual empowerment and family support systems may serve as effective preventive measures for postpartum depression.

Author Contributions

Study conceptualization and design (I.N., D.P., D.E.), data collection and analysis (I.N., D.E.), interpretation and manuscript drafting (I.N., D.P., D.E.), critical manuscript revision (D.E., D.P.). All authors have read and approval the final version of the manuscript.

Local Ethics Committee approval

This study was approved by the Research Ethics Committee of the Institute of Science and Health Technology Insan Cendekia Medika Jombang (reference number LP3M/ICME/ETIK/0425/2025 on February 10, 2025.

Conflict of Interest

The authors declare no conflicts of interest.

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AUTISM SPECTRUM DISORDERS KNOWLEDGE: RESULTS FROM AN ITALIAN NURSING STUDENTS MULTICENTER CROSS-SECTIONAL STUDY

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ABSTRACT

Introduction: Autism spectrum disorders (ASD) represent a constantly evolving neurodevelopmental condition that requires specific preparation by the entire multidisciplinary team. However, multiple scientific evidences report little training on ASD in nursing degree courses. The study above aims to assess the level of theoretical knowledge of Italian students regarding autism in pediatric age.

Materials and Methods: A multicenter cross-sectional study was conducted on 104 students enrolled in the Nursing degree programme, regularly enrolled in the 2nd and 3rd years of the course at different Italian universities, with or without previous experience in pediatric or mental health services. Knowledge was assessed by administering a validated questionnaire, the Knowledge About Childhood Autism Among Healthcare Workers (KCAHW). Sociodemographic variables and information on training and placement experience with children with ASD were collected. Data were analysed using descriptive and inferential statistics.

Results: The average score obtained on the KCAHW was 9.5 out of 19 (SD = 2.78), indicating an insufficient level of knowledge. Scores were significantly higher among students with direct experience with children with ASD (median: 11.0 vs. 9.3; p=0.015) and among female students than male students (mean: 9.9 vs. 8.7; p=0.016). Theoretical training and age were not significantly different.

Discussion: The results indicate the existence of a vital training gap. Direct clinical experience proves to be decisive in the improvement of theoretical knowledge. Integrating compulsory modules and structured ASD training in nursing education is recommended to ensure competent, small patient-centred care.

Keywords: Autism Spectrum Disorder (ASD); nursing education; undergraduate nursing students; theoretical knowledge; KCAHW questionnaire.

INTRODUCTION

Autism spectrum disorders (ASD) are a neurodevelopmental disorder that is steadily evolving worldwide. According to the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5) [1], ASD symptoms are defined “persistent deficits in social communication and social interaction across multiple contexts […] restricted, repetitive patterns of behaviour, interests, or activities”, moreover, the DSM-5 frames ASD as a single spectrum condition, replacing previous categorical subtypes and recognizing both the clinical variability and the differing levels of support individuals may need. In 2022, the World Health Organisation (WHO)’s International Classification of Diseases, 11th Revision (ICD-11) provided a similar definition, highlighting the symptoms' pervasive nature and clinical variability [2]. The global prevalence is estimated at around 0,6%. A recent meta-analysis estimated the global prevalence of ASD to be around 1% [3]. Data from the Global Burden of Disease Study estimates that approximately 1 in 127 individuals is affected by an autism spectrum disorder, corresponding to approximately 61.8 million people [4]. In Italy, a national study on children between 7 and 9 years old has identified a prevalence between male and female genders of 4.4:1 [5,6]. These data, gathered from surveys conducted across the entire school-age population in three Italian regions, confirm trends consistent with global trends [5]. The early increase in diagnosis has been attributed to improved screening procedures and greater social awareness. Despite the high prevalence of autism spectrum disorders and the complexity of care they entail, numerous studies show a significant lack of specific training among nurses and, more generally, among healthcare professionals. According to a systematic review, most healthcare professionals report low self-efficacy, a low level of theoretical knowledge and relational difficulties when interacting with patients with ASDs [7]. The results indicate that both undergraduate education on autism is highly heterogeneous and often not mandatory, leading to educational gaps that translate into suboptimal quality of care. An Italian study revealed that more than 60% of pediatric nurses did not receive any specific training on autism spectrum disorders during their academic career [8].

Furthermore, less than 40% consider themselves prepared to manage the nursing care of a child with ASD in both hospital and community settings [8]. Critical issues include lacking communication skills, difficulty using specific behavioural strategies, and limited knowledge of augmentative alternative communication (AAC) tools. This situation is also confirmed internationally. A pilot study on educational programs in the USA has shown that only 10-15% of nursing degree courses include compulsory modules on ASD [9]. A survey of nursing professors pointed out that in most nursing schools, there are no structured courses on autism and, when they are present, they are often limited to short theoretical references [10]. However, more recent studies have confirmed these critical issues internationally. Various studies have shown that, in clinical simulation settings, students show difficulties in emotional and communicative management with patients with ASD [11]. In addition, further studies report that both nurses and students are still partially prepared, underlining the need for specific and standardised training programmes between universities [12-14]. Further studies have confirmed that barriers to caring for patients with ASD are amplified by poorly structured training and poor communication skills among health professionals [7,15]. A systematic review has also highlighted critical issues in health services and communication between professionals, patients and caregivers [16]; in addition, the Italian Ministry of Health provides official information and materials aimed at families and professionals [17]. The guidelines issued by the Italian National Institute of Health (ISS) are now a key reference point for diagnosing and managing autism in Italy. On World Autism Awareness Day, the ISS released data and promoted awareness initiatives. The study highlights the urgent need to include specific content on autism in university programmes, combining a theoretical approach with practical experience in specialist contexts, to ensure safe, competent and truly person-centred care. Despite the obvious clinical and care relevance of autism in Italy, studies assessing nursing students' knowledge of ASD are still lacking. Most research focuses on pediatric nurses already in the working context, while there is little evidence analysing basic training during the university course. This study was conceived to respond to this deficiency to assess Italian nursing

students' knowledge of pediatric autism, using a validated instrument, the KCAHW, and involving several university venues throughout Italy. The study intends to offer an up-to-date overview of students' awareness and preparation by highlighting educational inhomogeneities among the various universities and verifying the consistency between internship experiences and the competence acquired on the topic. In summary, this study contributes to the scientific and academic debate on integrating autism training into nursing curricula, with potential implications for the practical training of healthcare professionals and, indirectly, the quality of care provided to pediatric patients with autism.

MATERIALS AND METHODS

Study Designed

A cross-sectional study was conducted to assess the level of knowledge among nursing students about autism spectrum disorders. The aforementioned study design involved the administration of a validated questionnaire, the Knowledge About Childhood Autism Among Healthcare Workers (KCAHW), to a heterogeneous sample of undergraduate students in a single period to replicate the students' theoretical background acquired during their education. Using a validated tool such as the KCAHW aligns with recent methodological approaches that use paediatric simulations or standardised patients with ASD to evaluate training effectiveness [11,20,21]. The KCAHW contains 19 questions divided into four domains:

1. Domain 1: 8 questions on inappropriate social interactions in children with ASD;
2. Domain 2: 1 question on impaired communication and language development;
3. Domain 3: 4 questions on obsessive-compulsive, repetitive and stereotypical behaviours;
4. Domain 4: 6 questions on comorbidity and age of onset of the disorder.

Each item has three answer options, only one of which is correct. Correct answers are worth 1 point,

while incorrect answers or “don't know” answers are worth 0 points. The total score ranges from 0 to 19, with higher scores indicating greater knowledge. In the literature, a cut-off of 60% correct answers has been proposed to identify a minimum basic level of knowledge. Previous studies have reported satisfactory internal consistency (Cronbach's α =0.97) and adequate content validity for the KCAHW [22].

Study site

The survey was administered online using Google Forms in July 2024. Students who were enrolled in ten nursing degree courses throughout Italy were involved. The universities involved were: Sapienza University of Rome, “Aldo Moro” of Bari, University “del Salento” of Lecce, “Federico II” of Naples, University of Palermo, “Gabriele D'Annunzio” of Chieti-Pescara, "Bicocca" of Milan, and the Universities of Bologna, Firenze and Trieste.

Participants

The sample was composed using a combination of convenience and snowball sampling strategies. Participants were first recruited through convenience sampling, as this approach allowed us access to readily available individuals willing to participate. Then, a snowball sampling strategy was applied to expand the sample and include participants who might otherwise have been difficult to reach, whereby early respondents enrolled additional eligible participants through diffusion of the survey link (direct access to the Google Form platform). The final sample consisted of 104 students enrolled in the nursing degree programme, chosen according to the following inclusion criteria: Enshrined in the second or third year of the degree programme. Previous experience in paediatric or child mental health services was not considered an inclusion criterion but was recorded as a descriptive variable.

For analytical purposes, age was categorized into three groups (18-20, 20-22, ≥23 years). This classification was not intended to represent clinical thresholds but was based on the distribution of

the sample and on the typical progression within the nursing degree programme (early years, middle years and delayed or outside prescribed time students).

Ethical considerations

This study adhered to the ethical standards outlined in the Helsinki Declaration and complied with General Data Protection Regulation-EU Regulation 679/2016 (GDPR). According to the Regulation for the functioning of the "Comitato Etico per la Ricerca Transdisciplinare (CERT)" of Sapienza University (Protocol 103110, 31 May 2024), anonymous, non-interventional studies that do not involve the collection of sensitive personal data are exempt from formal ethical approval. As our study fulfilled these criteria, no ethical review was required. Indeed, no sensitive personal data was collected; the questionnaire was designed to gather only general, non-identifiable information. The Google Forms platform, as set by the authors, did not collect any e-mail addresses and automatically anonymised responses with progressive numeric codes, so no personal identification was possible. The participation in the study through questionnaire response implied the acceptance of informed consent to participate, where characteristics and all data collection modalities were reported. Moreover, responders could abandon the survey at any time if the questions were deemed too personal or inappropriate, without any partial responses being collected. The authorisation of the survey administration to students was obtained from the Director of the nursing degree programme, following a previous evaluation of the survey items, structure, and questions.

Statistical analysis

Quantitative variables were described as mean ± standard deviation (SD) if normally distributed, or as median and interquartile range (IQR) if not. Categorical variables were presented as absolute frequencies and percentages. The normality of distributions was verified using the Shapiro-Wilk test, while the homogeneity of variances was verified using Levene's test. Comparisons between two

independent groups were performed using the t-test for independent samples when the assumptions of normality and homoscedasticity were met; otherwise, the non-parametric Mann-Whitney U test was applied. Comparisons between more than two groups were performed using one-way ANOVA only in the presence of normal distribution and homoscedasticity; otherwise, the Kruskal-Wallis test was used. Box plots were used for the graphical representation of scores: the horizontal line inside the box represents the median, the box limits correspond to the 25th and 75th percentiles (IQR), and the whiskers indicate the minimum and maximum values. All tests with p-values < 0.05 were considered significant. The internal consistency of the KCAHW was assessed using Cronbach's α coefficient, calculated on the overall sample. To conclude descriptive statistics were used to summarise the socio-demographic characteristics of the sample. All analyses were performed using IBM SPSS Statistics, version 27.0.

RESULTS

The study included 104 nursing students. The highest response rate was found among the Sapienza University students of Rome, representing approximately 71% of the total participants. The majority were female (71%), with a relatively even age distribution between the groups, 20-22 years (48%) and over 22 (48%). Only 21.1% reported that they had received specific training on ASD during their training, while 14.4% stated that they had cared for children with autism during their internship experience. The average score on the questionnaire was 9.5 out of 19 (SD=2.78), with values ranging from 1 to 15 (Table 1).

Mean	Standard deviation (SD)	Minimum value	Maximum value	Median
9.5	2.78	1.0	15.0	10.0

Table 1. *KCAHW descriptive statistics*

The distribution of the score suggests an insufficient general level of knowledge on the subject of

autism in paediatric age. Table 2 shows the distribution of KCAHW scores across the four domains and the total score. Students scored highest in domain 1 (social interaction; mean=4.63, median=5) and domain 3 (repetitive behaviours; mean=2.45, median=3). The lowest performance was observed in domain 2 (communication; mean=0.40, median=0). Domain 4 (comorbidity and age of onset) showed a mean of 2.86 (median=3). The mean total score was 10.35 (SD=3.08, median=10; range 1-17), indicating overall insufficient knowledge.

Domain	Items (n)	Standard deviation (SD)	Mean	Minimum value	Maximum value	Median
Domain 1 social interaction	8	1.80	4.63	0	8	5
Domain 2 communication	1	0.49	0.40	0	1	0
Domain 3 Repetitive behaviours	4	1.10	2.45	0	4	3
Domain 4 Comorbidity and onset	6	1.24	2.86	0	5	3
Total score	19	3.08	10.35	1	17	10

Table 2. *Distribution of scores across the four domains and total score KCAHW*

Statistical tests were then conducted to assess the association between socio-demographic variables and the score obtained (Table 3).

Comparison	Statistical test	Statistical value	p-value
ASD training (yes or no)	Mann-Whitney U	U=1245.0	0.261
Internship experiences with children affected by ASD (yes or no)	Mann-Whitney U	U=1080.0	0.015
Sex (female-male)	t-test	t=2.47	0.016
Age groups (18-20/20-22/≥23)	Kruskal-Wallis	H=0.49	0.612
Note: Parametric tests (t-test, one-way ANOVA) were applied only when assumptions of normality and homoscedasticity were met; otherwise, non-parametric alternatives (Mann–Whitney U, Kruskal–Wallis) were used.			

Table 3. *Statistical test results*

Students who had previously had placement experience with children with ASD scored significantly

higher (median: 11.0 vs. 9.3; Mann-Whitney U=1080.0; p=0.015). Similarly, a difference in performance between students with and without clinical experience was also found in a study conducted in 2024, confirming the formative impact of internship activities [13].

Female gender was associated with a significantly higher score (mean: 9.9 vs. 8.7; t=2.47; p=0.016). There was no significant difference between those who had received specific training on autism spectrum disorders and those who had no organised courses on this topic in their curricula (Mann-Whitney U=1245.0; p=0.216). Age did not significantly impact the overall score statistically (Kruskal-Wallis H=0.49; p=0.612).

The scores obtained from the questionnaire were represented graphically as a function of training and clinical-practical internship experience. The box plots show greater variability and a higher median in the groups who have had training placement experience with children with autism spectrum disorders than in those who have not had clinical practice experience in this area. The internal consistency of the KCAHW, assessed through Cronbach's α, was 0.54 in this sample, in line with other studies on student populations and confirming the multidimensional nature of the tool.

The box plot (Figure 1 and 2) represents the median (horizontal line inside the box), the interquartile range (IQR) (25th-75th percentile; extremes of the box), and the minimum and maximum values (whiskers).

In Figure 1, students who had received specific training on ASD reported higher median scores and less variability than those without training.

In Figure 2, students with internship experience with children with ASD obtained higher scores and a more compact distribution, indicating a generally higher and more homogeneous level of knowledge than the group without direct experience.

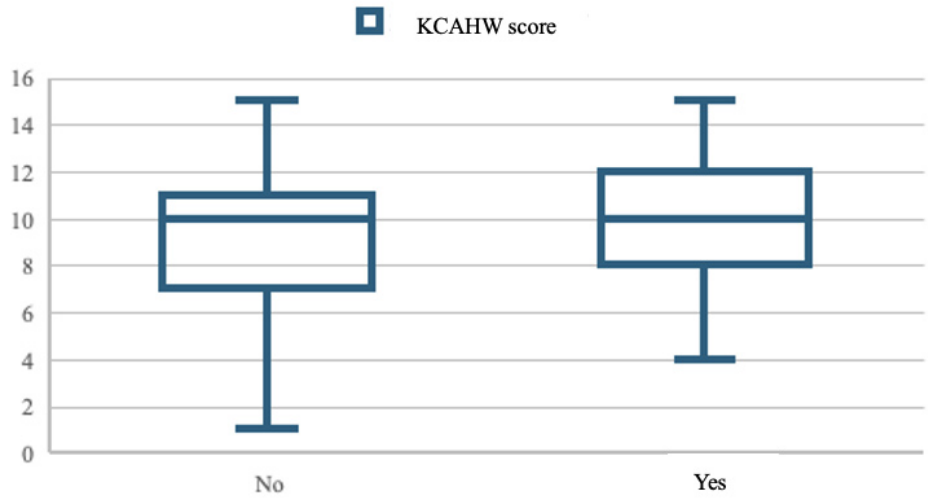

Figure 1. *Distribution of KCAHW scores based on ASD training*

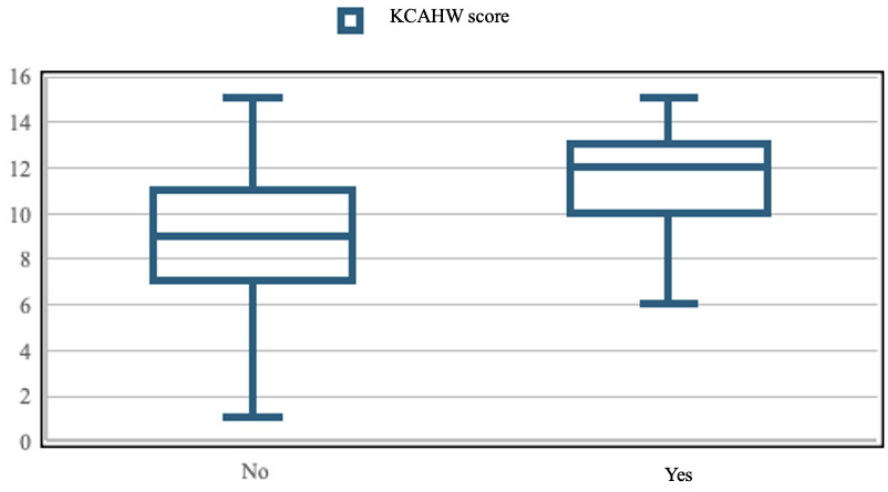

Figure 2. *Distribution of KCAHW scores based on internship experience*

DISCUSSION

The study analysed the level of theoretical knowledge about autism in developmental age among students in a nursing degree program using a validated instrument, the KCAHW. The results show insufficient knowledge, with an average of less than half of the maximum achievable score. The

domain analysis also showed that the lowest scores were obtained in the area of communication (domain 2), while relatively higher scores were found in social interaction (domain 1) and repetitive behaviours (domain 3). These results suggest that the communicative aspects of autism remain particularly underestimated among nursing students, highlighting a specific gap that training curricula should address. This finding is in line with what is reported in the international literature, where a general inadequacy of basic nursing education concerning neurodevelopmental disorders, particularly those of the autistic spectrum, is emphasised [7,10]. One of the most significant pieces of evidence that emerged concerns the positive association between internship experience with children with ASD and a higher score on the questionnaire. This result confirms the effectiveness of clinical-practical learning as a fundamental tool for consolidating theoretical knowledge and developing specific communication and relational skills [9]. In line with these findings, several studies have highlighted how direct field experience is associated with improved professional preparedness and safety [10,12,13]. Realistic simulation is also an effective educational strategy, as some studies have observed improvements in post-simulation communication skills [11,21]. The presence of field experience allows students to consciously confront the complexity of care related to autism spectrum disorders, favouring a less stereotypical approach. This finding aligns with numerous results that show that the perception of nurses' competencies is mainly linked to clinical experience and not only to theoretical training [14,26]. Also of great importance is the significant difference found in gender, with female students reporting higher average results than male students. This datum, already highlighted in other training contexts, could be linked to psycho-social variables such as a greater predisposition to helping relationships or a different motivation in the in-depth study of themes related to the behavioural and relational sphere. Contrary to expectations, the presence or absence of basic theoretical training on ASD did not show statistically significant differences in the scores obtained. This may reflect the poor systematisation and heterogeneity of the content available in the various courses of study and the predominantly theoretical nature of these training modules, which are not

supplemented with practical experience. Similarly, the age of the students was not found to be predictive of the level of knowledge, suggesting that the accumulation of academic years does not necessarily guarantee greater competence on the subject. Some researchers propose the integration of new technologies in nursing education. Numerous studies highlight the effectiveness of virtual reality in training students in interactions with patients with autism spectrum disorders [27]. In contrast, others focus on using artificial intelligence to support healthcare professionals in managing ASDs [28]. Several qualitative studies based on clinical simulation have also highlighted areas for improvement in nursing education on autism spectrum disorders [29]. These new perspectives open up different scenarios for the training of healthcare professionals and deserve further investigation. The collected data show a substantial training gap within the Italian nursing curricula. A recent observational study found limited knowledge of nurses regarding autism spectrum disorders [30]. In light of the increasing prevalence of ASD and the growing need for healthcare professionals competent in the management of this population [31], there is an urgent need for the integration of structural, multidisciplinary and experience-based education. Some recent experiments suggest the integration of immersive technologies and intelligent tools to enhance the effectiveness of teaching. Virtual reality, in particular, has proven helpful in improving students' social and relational skills in simulated settings with patients with ASD [27]. Furthermore, the use of artificial intelligence to support early diagnosis and care planning is growing [28], with good results also in training healthcare professionals [32]. Finally, a following step forward is the specific training of pediatric nursing staff on common aggressive behaviours in children with ASD, as reported by several researchers who conducted a pilot RCT showing how simulation increases staff safety and operational skills [33].

Limitations

The study’s main limitations include the small sample size (n=104), the relatively low response rate across the ten university courses involved, and the non-probabilistic nature of the sampling, which

limits the generalizability of the results to the entire Italian nursing student population. The low response rate may reflect the voluntary and self-administered nature of the survey, as well as the variability in students' availability and motivation to participate. This aspect could have introduced a further selection bias, as the students who responded may have been more interested or sensitised to the topic compared to those who did not. The choice of the sample was based on the availability and accessibility of students at specific university sites, introducing a possible selection bias. Secondly, a self-administered questionnaire may have exposed the results to social desirability bias or subjective interpretations of the questions, even though the KCAHW is internationally validated. Another limitation is the purely theoretical assessment of knowledge without in-depth exploration of practical or attitudinal expertise or the ability to apply the acquired knowledge in real clinical contexts. Furthermore, the training received was investigated with a single closed question without a qualitative-quantitative assessment of the training content addressed. Finally, as this is a cross-sectional study, it is impossible to establish causal relationships between the analysed variables, but only statistical associations. Forward-looking longitudinal studies could help us understand how knowledge evolves and the real impact of training programmes on acquiring specific competencies. Overall, the findings suggest that nursing students show insufficient knowledge of autism and limited attitudinal preparedness for managing children with ASD. This highlights the need for nursing curricula to include not only theoretical content, but also experiential and practical training aimed at improving students' attitudes, confidence, and readiness to interact with autistic patients and their families

CONCLUSION

In conclusion, the study highlights the need for a more comprehensive theoretical education in ASD for nursing students, focusing on developing skills in the clinical setting. Educational strategies should therefore address both theoretical knowledge and students' attitudes toward autism, fostering

more adequate preparedness for clinical practice. The absence of statistical significance for the theoretical training received suggests a potential fragmentation and inhomogeneity of the content delivered in degree courses that would merit systemic reflection at an academic and institutional level. In light of the increase in the prevalence of ASD and the growing complexity of care that this condition entails, there emerges an urgent need to integrate specific, up-to-date content applicable in clinical practice into nursing education courses. In particular, it would be better if supervised internship experiences in specialist settings accompany the adoption of mandatory modules on autism within academic programmes. Further multicentre research and larger samples will be necessary to validate these results and further investigate the effectiveness of training interventions in terms of their practical-assistance spin-offs, with a view to continually improving the quality of care for the paediatric population with autism spectrum disorders. Finally, as highlighted in the international literature, an up-to-date and multidisciplinary understanding of autism spectrum disorders is fundamental to improving the quality of care and reducing inequalities in access to care [34]. However, in light of the sustainability of training programmes, it does not seem realistic to envisage the introduction of specific modules for each individual clinical condition. Rather, it would be appropriate to promote cross-cutting strategies aimed at enhancing students' preparation, motivation and attitude before each internship experience, so as to strengthen the link between theory and practice and promote more effective learning in different clinical contexts.

Conflicts of interest and sources of funding

The authors declare that they have no conflicts of interest. This research did not receive any external funding.

Author contributions

MC designed the study, collected the data, and wrote the first draft of the manuscript. FP and SC

collected and analysed the data and critically reviewed the paper. MDM and EDS co-supervised the work, contributed to data analysis, and critically reviewed the content. AM supervised the study, and critically reviewed the manuscript. All authors participated in the final revision of the manuscript and approved the submitted version.

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Current state of the experience of receiving evidence-based practice education and its relationship with evidence-based practice knowledge and skills among hospital nurses: A cross-sectional questionnaire survey in Western Japan

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ABSTRACT

Introduction: Although evidence-based practice (EBP) is a core nursing competency, little is known about the extent to which nurses are educated on the five steps of EBP, including the specific educational content within each step, in pre-licensure and in-service education, and how these educational experiences relate to their knowledge and skills.

Objectives: To examine the extent of nurses' experience of receiving specific educational content related to each step of EBP in pre-licensure and in-service education, and to evaluate the associations between these experiences and EBP knowledge and skills.

Methods: This cross-sectional questionnaire survey was conducted between June and September 2022 among 2,672 employed hospital nurses in Japan. EBP knowledge and skills were measured using the Japanese version of the EBP Questionnaire. Experience of receiving EBP education in pre-licensure and in-service education was assessed using items developed from EBP textbooks and core competency literature. Analysis of covariance and relative importance analysis were conducted to evaluate the association between the experience of receiving EBP education and EBP knowledge and skills.

Results: 718 nurses (26.9%) were included in the final analysis. The findings showed that nurses' experience of receiving EBP education was generally limited, with fewer than 25% having learned any EBP-education item, except literature databases, in pre-licensure education. Similarly, fewer than 25% have learned each EBP-education item in in-service education. The adjusted mean EBP knowledge and skills score increased progressively with the extent of education received across the five steps of EBP (20.6 for no steps to 35.5 for five steps), showing a consistent dose–response relationship (p for trend < 0.001). Relative importance analysis showed that the Step 4 and Step 5 items were placed toward the upper end of the contribution rankings.

Conclusions: To effectively improve nurses' EBP knowledge and skills, providing a practical, EBP-specific program that comprehensively covers all five EBP steps would be essential. Additionally,

developing programs for training educators would also be essential.

Keywords: Education, Evidence-based practice, Nurse, Knowledge, Skills.

INTRODUCTION

Evidence-based practice (EBP) is defined as a problem-solving approach that can be used to deliver health care that integrates the best evidence from research and patient care data with clinician expertise as well as patient preferences and values [1]. The risks of adverse outcomes such as mortality, falls, and ventilator-associated pneumonia are reported to be reduced when EBP is implemented [2-5]. Both the American Nurses Association and the American Association of Colleges of Nursing have identified EBP as a core competency for nurses, reflecting its critical role in improving patient care [6,7]. Therefore, promoting EBP education for nurses is recognized as a global priority in nursing. Previous studies on the experience of receiving EBP education have reported its prevalence, instructional hours, and delivery formats (e.g., integration into research methodology or statistics courses) in pre-licensure education [8-11]. Since EBP implementation requires knowledge and skills related to its five steps (Step 1: ask, Step 2: acquire, Step 3: appraise, Step 4: apply, and Step 5: assess), it is essential to receive education on each of these steps. However, no study has examined the extent to which nurses have received specific educational content related to each step of EBP, such as how to formulate clinical questions using the PICO (Patient, Intervention, Comparison, Outcome) or PECO (Patient, Exposure, Comparison, Outcome) framework, and search using databases for clinical guidelines and systematic reviews [12]. Clarifying which aspects of EBP education have been adequately covered and which have not is essential for developing an effective EBP educational program. Additionally, although previous studies have examined the relationship between whether nurses received EBP education and EBP knowledge and skills, no research has assessed how the extent of education received across the five EBP steps relates to these competencies [13-15].

Furthermore, there has been no evaluation of which EBP-education items have a greater contribution to EBP knowledge and skills. Such evaluations would clarify how the comprehensiveness of EBP education relates to levels of EBP knowledge and skills, and which EBP-education items have a greater contribution to EBP competency. This, in turn, would inform the design and prioritization of more effective educational programs. Previous studies have identified factors associated with nurses' EBP knowledge and skills, including age, gender, educational level, years of clinical nursing experience, employment position, advanced practice certification, participation in EBP education, experience conducting research, and resources and organizational support for EBP [12]. These factors are potential confounders when examining associations between educational exposure and EBP competency. This study was conceptually guided by Kirkpatrick's evaluation model [16], which conceptualizes training outcomes across four cumulative levels: Level 1—Reaction (how favorable, engaging, and relevant the training is), Level 2—Learning (the degree to which participants acquire intended including knowledge, skills, and confidence), Level 3—Behavior (the degree to which participants apply what they learned on the job), and Level 4—Results (the degree to which targeted organizational outcomes occur).

In our study, the primary endpoints—EBP knowledge and skills—map to Level 2 (Learning), and the extent of experience of receiving EBP education was treated as the educational input expected to produce a dose–response in Level-2 outcomes.

Objective

This study aimed to examine the extent of hospital nurses' experience of receiving specific educational content related to each step of EBP in both pre-licensure and in-service education in Japan. We also evaluated the associations between these educational experiences and EBP knowledge and skills, and which EBP-education items have a greater contribution.

MATERIALS AND METHODS

Study design and participants

This cross-sectional questionnaire survey was conducted between June and September 2022 among hospital nurses from six hospitals in Western Japan (three universities: two private and one public). Sites were selected for convenience based on pre-existing collaborations and confirmed site willingness. All registered nurses working at these hospitals who met the eligibility criteria were invited to participate. The inclusion criteria were as follows: 1) currently employed as a nurse at a hospital and 2) directly involved in patient care. Nurses in managerial positions, such as directors of nursing, assistant directors of nursing, and head nurses, were excluded. A structured, self-administered, paper-based questionnaire was distributed to participants, and completed questionnaires were returned in sealed envelopes via mail. The study protocol was prepared in accordance with the Declaration of Helsinki and approved by the institutional review board of Osaka Metropolitan University (approval date: June 24, 2022; approval number: 2022–215). The present study used data from the same project as our prior publication [17], though it addresses different research aims and conducts independent analyses.

Data collection procedures and instruments for data collection

Participants were provided with a written explanation of the study's purpose, procedures, and measures to ensure confidentiality, and that participation was voluntary. Informed consent, considered "appropriate consent" under relevant ethical guidelines [18], was obtained by having participants check a box in the consent section of the questionnaire to indicate their agreement. Data collection was coordinated through the nursing departments at the participating hospitals. After obtaining site approvals, the research team mailed a paper-based questionnaire to the Director of Nursing at each collaborating hospital. The directors then distributed the questionnaire to unit head nurses, who in turn handed it to the eligible staff nurses. All questionnaires were self-administered in paper format;

no electronic survey was used, and no individual email addresses or staff contact lists were provided to the researchers. Completed questionnaires were placed by respondents into sealed envelopes and returned by postal mail directly to the study office, thereby maintaining respondent anonymity and confidentiality.

EBP knowledge and skills

EBP knowledge and skills were measured using the Japanese version of the Evidence-Based Practice Questionnaire (EBPQ-J) [18], a validated translation of the original EBPQ developed by Upton and Upton (2006). Both versions have demonstrated high reliability and validity [19-21]. Total scores for EBP knowledge and skills range from 9 to 63, with higher scores indicating greater knowledge and skills. The original EBPQ comprises three subscales: EBP implementation, attitudes toward EBP, and EBP knowledge and skills. The EBPQ-J reorganizes these into four subscales by dividing the knowledge and skills domain into two components: EBP knowledge and skills related to research (score range: 7–49) and EBP knowledge and skills related to practice (score range: 2–14). EBP knowledge and skills were assessed using the total scores of the two subdomains in accordance with the components of the EBPQ. Questionnaire items on the EBP knowledge and skills related to research subscale include statements such as, “Ability to apply necessary information to hypotheses in research question studies,” “Knowledge of methods to search for and obtain evidence,” and “Ability to determine whether the contents of a study are valid (level of bias).” Questionnaire items on the EBP knowledge and skills related to practice subscale include statements such as “Ability to share ideas and information with colleagues” and “Ability to convey new information regarding care with colleagues.” Cronbach’s alpha for the EBP knowledge and skills subscale in the present study was 0.95.

Based on previous literature on factors associated with EBP knowledge and skills [12], we collected the following factors as potential confounders in evaluating the relationship between the experience

of receiving EBP education and EBP knowledge and skills using a self-administered questionnaire. These included: age, gender, educational level (diploma, associate degree, bachelor's degree, or master's degree), years of clinical nursing experience, employment position (staff nurse, charge nurse, or assistant head nurse), advanced practice certification (none, certified nurse, or certified specialist nurse), number of times conducting research, access to a literature database (yes or no), and organizational attitude toward EBP ("Is your workplace a positive attitude toward EBP?" non-positive, neither, moderately positive, or very positive). Regarding advanced practice certification in Japan, certified nurse specialists are required to complete a graduate program, which aligns with the qualifications for advanced practice roles in other countries, such as nurse practitioners or clinical nurse specialists [22]. In contrast, certified nurses are registered nurses who have completed specialized clinical training, although a master's degree is not required for this certification.

Experience of receiving EBP education

The experience of receiving EBP education was measured for both pre-licensure and in-service education. EBP-education items were developed based on key textbooks on EBP [23-25] and literature on EBP core competencies for healthcare professionals [26]. Items were categorized into knowledge and skills components and aligned with the five steps of EBP. Step 1 (Ask) included knowledge of clinical questions and the PICO or PECO framework, as well as skills in formulating clinical questions using that framework. Step 2 (Acquire) included knowledge of efficient evidence searching, such as searching in the following order: systems, summaries, clinical practice guidelines, systematic reviews, and original articles. It also encompassed knowledge of the characteristics and search methods of literature databases (e.g., PubMed and Ichushi Web, a bibliographic database indexing primarily Japanese-language literature on medicine, nursing, dentistry, and pharmacy) and of databases for clinical practice guidelines and systematic reviews (e.g., Minds Guideline Library, a database for domestic clinical practice guidelines published in Japan, and the Cochrane Library).

Furthermore, Step 2 included skills in conducting searches for evidence using an efficient order and relevant databases. Step 3 (Appraise) included knowledge of differences in levels of evidence according to study design, random and systematic error, and descriptive and inferential statistics, along with skills in critically appraising literature based on these domains. Step 4 (Apply) included knowledge of the four components required to apply evidence in practice—patient's clinical state and circumstances, research evidence, patient's preferences and actions, and clinical expertise—as well as skills in applying these components in clinical decision-making. Step 5 (Assess) included the skill of evaluating the outcomes of EBP. For each EBP-education item, participants were asked to rate their experience on a five-point Likert scale: "Have not learned at all," "Have not learned," "Neither," "Have learned," and "Have learned a lot."

Statistical analyses

First, descriptive statistics were used to summarize participants' characteristics. Continuous variables, such as age and EBP knowledge and skills scores, are presented as means and standard deviations, and dichotomous and categorical data as frequencies and percentages. Next, the experience of receiving EBP education in both pre-licensure and in-service education was summarized for each EBP-education item using frequencies and percentages across the five response categories. Third, analysis of covariance (ANCOVA) was conducted to examine the association between the extent of education received across the five steps of EBP and EBP knowledge and skills. In this model, the extent of education received across the five steps of EBP was treated as the independent variable, and the EBP knowledge and skills score as the dependent variable. In this study, due to the small number of participants who responded "Have learned a lot," this response was combined with "Have learned" into a single category labeled "Have learned" to improve interpretability. Consequently, the level to which EBP education has been experienced was categorized into four levels: "Have not learned at all," "Have not learned," "Neither," and "Have learned." For each EBP-education item, the level of

educational experience was determined based on responses for both pre-licensure and in-service education. Specifically, when participants reported different amounts of education received across the two educational settings, the higher of the two responses was retained, based on the following rank order: “Have not learned at all” < “Have not learned” < “Neither” < “Have learned.” For instance, if a participant responded, “Have not learned at all” in pre-licensure education and “Have learned” in in-service education, their overall experience for that item was categorized as “Have learned.” The extent of education received across the five steps of EBP was derived by considering participants to have received education on a given step only if they responded “Have learned” to all items within that step. Based on the number of steps for which this condition was met, participants were categorized into one of six groups: those who had received education on no, one, two, three, four, or all five steps. The model included potential confounding variables, including gender, educational level, years of clinical nursing experience, position, advanced practice certification, number of times of experience conducting research, access to a literature database, and organizational attitude toward EBP. Adjusted means and 95% confidence intervals were determined for each category, and a p-value for linear trend was calculated from the linear component (F test) of a polynomial contrast within the ANCOVA framework. Fourth, ANCOVA was conducted for each EBP-education item to examine the association between item-specific experience of receiving EBP education and EBP knowledge and skills. All models used the same four ordered categories (“Have not learned at all,” “Have not learned,” “Neither,” “Have learned”) and the same set of covariates as above. Adjusted means and 95% confidence intervals were determined for each category of level to which EBP education has been experienced, and p-values for linear trends were calculated analogously from the linear component (F test) of a polynomial contrast. The effect sizes were calculated using partial η^2. For all ANCOVA models, we assessed residual normality with Q–Q plots and homogeneity of variance with residual-versus-fitted plots.

Finally, relative importance analysis was conducted using the Lindemann–Merenda–Gold (LMG)

method with the R package “relaimpo” to quantify the contribution of each EBP-education item to EBP knowledge and skills [27,28]. The LMG method is particularly useful when explanatory variables are correlated, as it quantifies each variable’s relative importance by averaging its incremental contribution to R^2 across all possible orderings [29,30]. Each EBP-education item was dummy-coded as a four-level factor (“Have not learned at all,” “Have not learned,” “Neither,” or “Have learned”). The model included the same covariates as in the ANCOVA (gender, educational level, years of clinical nursing experience, employment position, advanced practice certification, number of times of experience conducting research, access to a literature database, and organizational attitude toward EBP). Contributions were expressed as the percentage of the EBP-education items-only R^2 (i.e., the proportion of variance explained by the EBP-education items after adjustment for covariates), and 95% confidence intervals were obtained via bootstrap resampling (B = 1,000). We used complete-case analysis because overall missingness was low and missingness often occurred in blocks across item batteries, limiting cross-variable information for imputation. All analyses were performed using IBM SPSS Statistics for Windows version 29 software (IBM SPSS Japan, Tokyo, Japan) or R version 4.4.2 (R Foundation for Statistical Computing, Vienna, Austria). All reported p-values were two-tailed, and values of <0.05 were considered statistically significant.

RESULTS

In total, 2,672 nurses were invited to participate. Of these, 766 (28.7%) responded to the mail survey. After excluding those with missing data, 718 nurses (26.9%) were included in the final analysis. The characteristics of the participants are presented in Table 1. The mean age (standard deviation) was 36.0 (10.0) years; more than 90% of the participants were female, 40.1% had a bachelor’s degree, and 4.0% had a master’s degree. More than half the participants had more than 10 years of clinical experience, most were employed at hospitals with access to a literature database, and more than 60% reported that their organization had a positive attitude toward EBP. The mean EBP knowledge and

skills score (standard deviation) was 22.4 (10.4) points, indicating a relatively low level of EBP-related competency among the participants.

Variables	
Personal factors	
Age (years)	36.0 (10.0)
Gender	
Women	663 (92.3)
Men	55 (7.7)
Educational level	
Diploma or associate degree	400 (55.7)
Bachelor's degree	287 (40.0)
Master's degree	31 (4.3)
Years of clinical nursing experience	
≤3	159 (22.1)
4–9	160 (22.3)
≥10	399 (55.6)
Employment position	
Staff nurse	653 (90.9)
Charge nurse or assistant head nurse	65 (9.1)
Advanced practice certification	
No	692 (96.4)
Certified nurse or certified specialist nurse	26 (3.6)
Number of times conducting research	
0	322 (44.9)
1	146 (20.3)
≥2	250 (34.8)
Work-environment factors	
Literature database	
No	29 (4.0)
Yes	689 (96.0)
Organizational attitude toward EBP	
Nonpositive	82 (11.4)
Neither	186 (25.9)
Moderately positive	281 (39.2)
Very positive	169 (23.5)
Outcome	
EBP knowledge and skills score (points)	22.4 (10.4)

Note:
Age and EBP knowledge and skills score are presented as mean (standard deviation). Dich otomous data and categorical data are presented as n (%). EBP, evidence-based practice.

Table 1. *Participants' characteristics (n=718).*

Experience of receiving EBP education in pre-licensure education

Figure 1 illustrates the experience of receiving EBP education in pre-licensure education among Japanese hospital nurses.

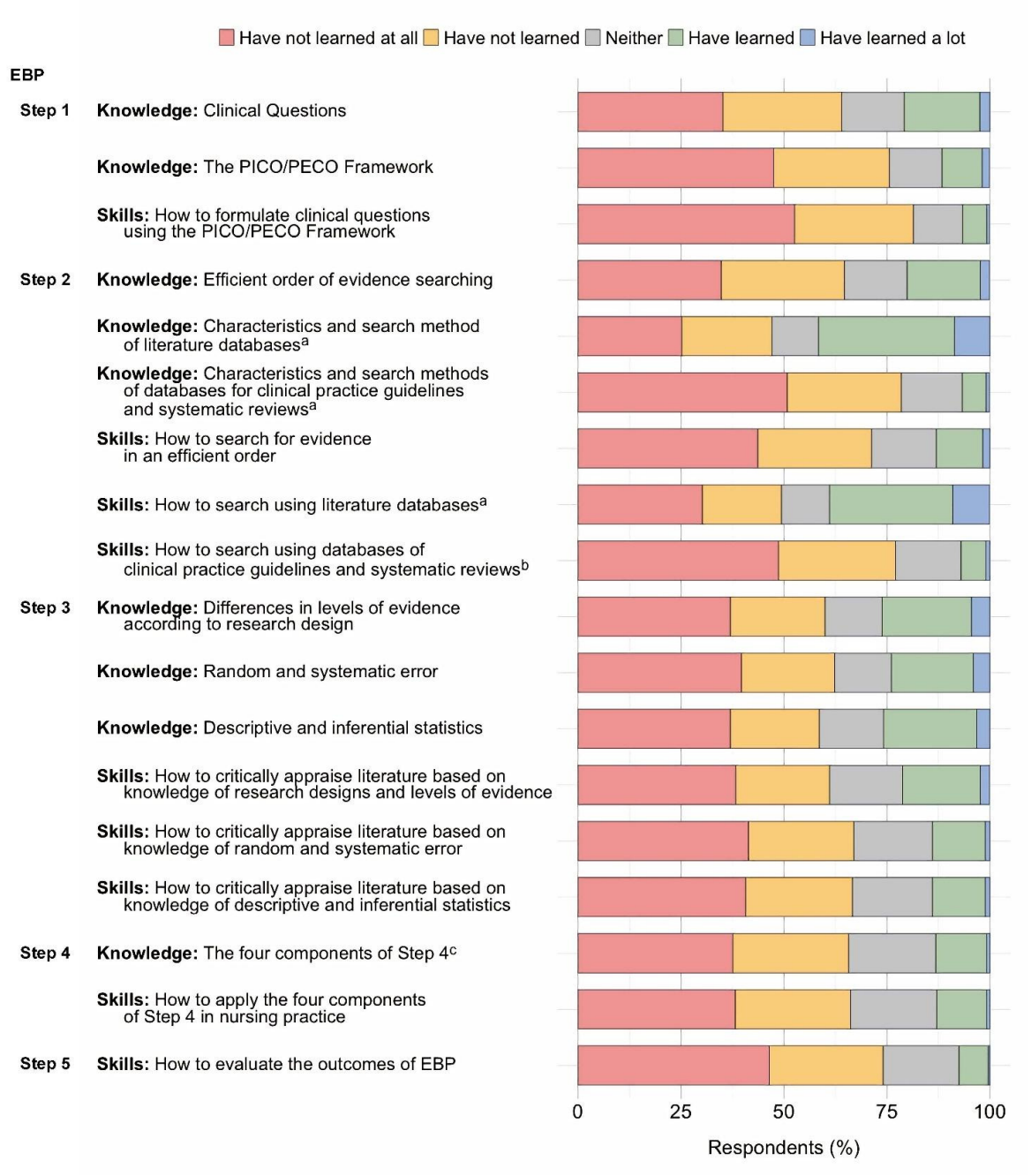

Figure 1. *Experience of receiving EBP education in pre-licensure education among Japanese*

hospital nurses

Note on Figure 1

Proportions represent the distribution of responses to each EBP-education item. Items were categorized into knowledge and skills components and aligned with the five steps of EBP.

[a] Literature databases refer to resources such as PubMed and Ichushi Web, a bibliographic database indexing primarily Japanese-language literature on medicine, nursing, dentistry, and pharmacy.

[b] Databases for clinical practice guidelines and systematic reviews refer to resources such as the Minds Guideline Library, a database for domestic clinical practice guidelines published in Japan, and the Cochrane Library.

[c] The four components are as follows: (1) the patient's clinical state and circumstances, (2) research evidence, (3) the patient's preferences and actions, and (4) clinical expertise.

EBP: evidence-based practice; PECO: Patient, Exposure, Comparison, Outcome; PICO: Patient, Intervention, Comparison, Outcome.

Overall, participants' experience of receiving pre-licensure EBP education was limited. The proportion of nurses who reported that they had learned about skills-related items was lower than the proportion who reported that they had learned about knowledge-related items. Approximately 40% of the nurses reported having learned about characteristics and search methods of literature databases, though fewer than 25% reported having learned about any of the other EBP-education items. Fewer than 10% of nurses reported that they had learned how to formulate clinical questions using the PICO/PECO framework regarding characteristics and search methods of databases for clinical practice guidelines and systematic reviews, how to conduct a search using databases for clinical practice guidelines and systematic reviews, and how to evaluate the outcomes of EBP. Table 2 provides detailed results for each EBP-education item.

	Have not learned at all	Have not learned	Neither	Have learned	Have learned a lot
EBP – Step 1 (Ask)					
Knowledge					
Clinical Questions	253 (35.2)	207 (28.8)	109 (15.2)	132 (18.4)	17 (2.4)
The PICO/PECO framework	341 (47.5)	202 (28.1)	92 (12.8)	70 (9.7)	13 (1.8)
Skills					
How to formulate clinical questions using the PICO/PECO framework	378 (52.6)	207 (28.8)	86 (12.0)	42 (5.8)	5 (0.7)
EBP – Step 2 (Acquire)					
Knowledge					
Efficient order of evidence searching	250 (34.8)	215 (29.9)	109 (15.2)	128 (17.8)	16 (2.2)
Characteristics and search methods of literature databases [a]	181 (25.2)	157 (21.9)	81 (11.3)	237 (33.0)	62 (8.6)
Characteristics and search methods of databases for clinical practice guidelines and systematic reviews [b]	365 (50.8)	199 (27.7)	106 (14.8)	42 (5.8)	6 (0.8)
Skills					
How to search for evidence in an efficient order	314 (43.7)	198 (27.6)	113 (15.7)	81 (11.3)	12 (1.7)
How to search using literature databases[a]	217 (30.2)	138 (19.2)	84 (11.7)	215 (29.9)	64 (8.9)
How to search using databases for clinical practice guidelines and systematic reviews [b]	350 (48.7)	204 (28.4)	114 (15.9)	43 (6.0)	7 (1.0)
EBP – Step 3 (Appraise)					
Knowledge					
Differences in levels of evidence according to research design	266 (37.0)	165 (23.0)	99 (13.8)	156 (21.7)	32 (4.5)
Random and systematic error	285 (39.7)	162 (22.6)	99 (13.8)	143 (19.9)	29 (4.0)
Descriptive and inferential statistics	266 (37.0)	155 (21.6)	112 (15.6)	162 (22.6)	23 (3.2)
Skills					
How to critically appraise literature based on knowledge of research designs and levels of evidence	275 (38.3)	164 (22.8)	127 (17.7)	136 (18.9)	16 (2.2)
How to critically appraise literature based on knowledge of random and systematic error	297 (41.4)	184 (25.6)	137 (19.1)	92 (12.8)	8 (1.1)
How to critically appraise literature based on knowledge of descriptive and inferential statistics	292 (40.7)	186 (25.9)	140 (19.5)	92 (12.8)	8 (1.1)
EBP – Step 4 (Apply)					
Knowledge					
The four components of Step 4[c]	270 (37.6)	202 (28.1)	152 (21.2)	88 (12.3)	6 (0.8)

Skills					
How to apply the four components of Step 4 in nursing practice [c]	274 (38.2)	201 (28.0)	150 (20.9)	87 (12.1)	6 (0.8)
EBP – Step 5 (Assess)					
Skills					
How to evaluate the outcomes of EBP	333 (46.4)	199 (27.7)	132 (18.4)	51 (7.1)	3 (0.4)

Note:
Experience of receiving EBP education is presented as the number of participants (%).
[a] Literature databases refer to resources such as PubMed and Ichushi Web, a bibliographic database indexing primarily Japanese-language literature on medicine, nursing, dentistry, and pharmacy.
[b] Databases for clinical practice guidelines and systematic reviews refer to resources such as the Minds Guideline Library, a database for domestic clinical practice guidelines published in Japan, and the Cochrane Library.
[c] The four components are as follows: (1) the patient's clinical state and circumstances, (2) research evidence, (3) the patient's preferences and actions, and (4) clinical expertise.
EBP: evidence-based practice: PECO: Patient, Exposure, Comparison, Outcome; PICO: Patient, Intervention, Comparison, Outcome.

Table 2. *Experience of receiving EBP education in pre-licensure education among Japanese hospital nurses (n=718)*

Experience of receiving EBP education in in-service education

Figure 2 illustrates the experience of receiving EBP education in in-service education among Japanese hospital nurses.

Note on Figure 2

Proportions represent the distribution of responses to each EBP-education item. Items were categorized into knowledge and skills components and aligned with the five steps of EBP.

[a] Literature databases refer to resources such as PubMed and Ichushi Web, a bibliographic database indexing primarily Japanese-language literature on medicine, nursing, dentistry, and pharmacy.

[b] Databases for clinical practice guidelines and systematic reviews refer to resources such as the Minds Guideline Library, a database for domestic clinical practice guidelines published in Japan, and the Cochrane Library.

[c] The four components are as follows: (1) the patient's clinical state and circumstances, (2) research evidence, (3) the patient's preferences and actions, and (4) clinical expertise.

EBP, evidence-based practice, PECO, Patient, Exposure, Comparison, Outcome; PICO, Patient, Intervention, Comparison, Outcome.

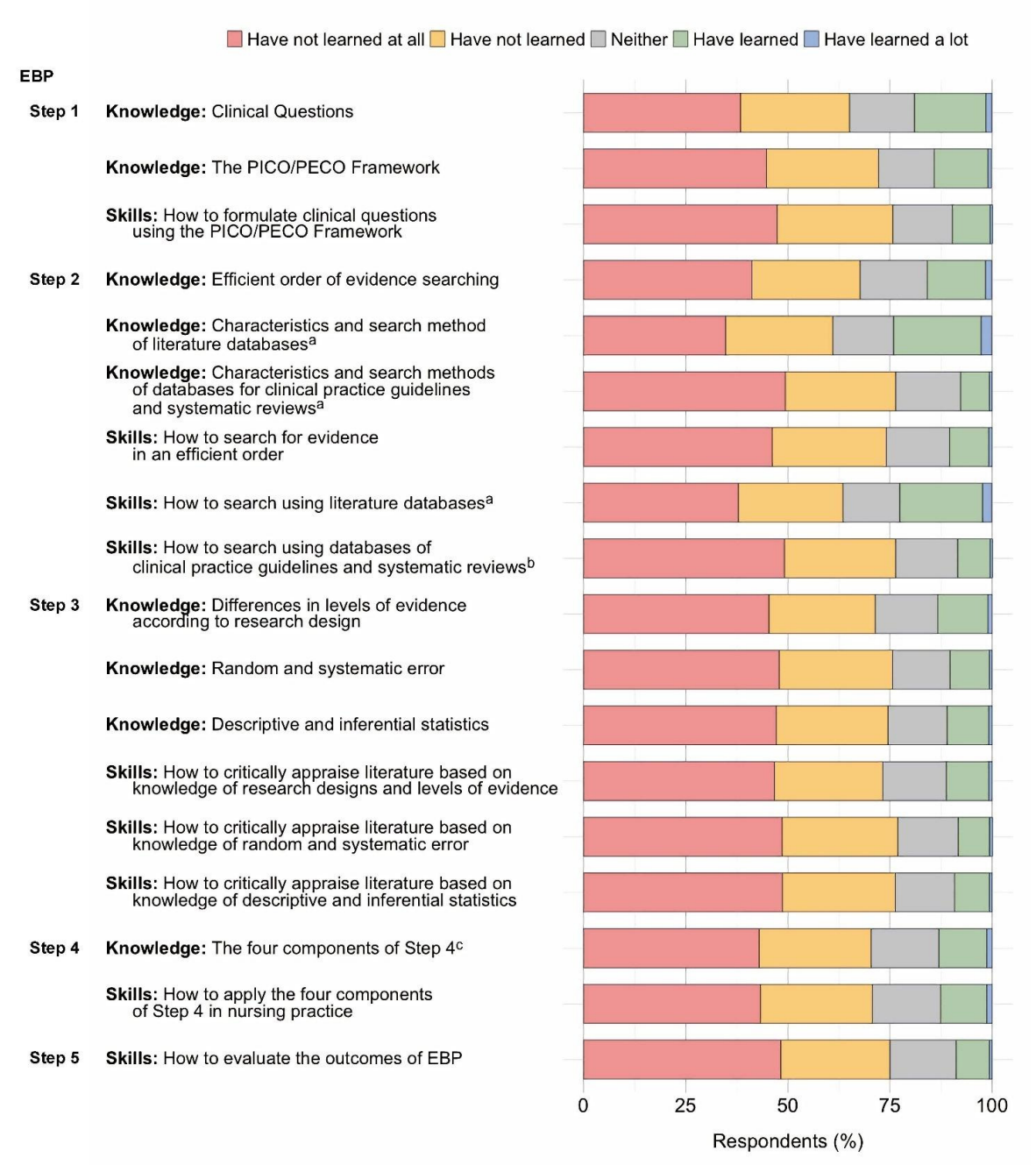

Figure 2. *Experience of receiving EBP education in in-service education among Japanese hospital nurses*.

Overall, participants' experience of receiving EBP education was limited. For all EBP-education items, fewer than 25% of nurses reported that they had learned about the content, with the percentage of respondents who reported learning about skills-related items being even lower than the percentage of those who reported learning about knowledge-related items. Fewer than 10% of nurses reported that they learned how to formulate clinical questions using the PICO/PECO framework, characteristics and search methods of databases for clinical practice guidelines and systematic reviews, how to conduct a search using databases for clinical practice guidelines and systematic reviews, how to critically appraise literature based on knowledge of random and systematic error, how to critically appraise literature based on knowledge of descriptive and inferential statistics, and how to evaluate the outcomes of EBP. Table 3 provides detailed results for each EBP-education item.

	Have not learned at all	Have not learned	Neither	Have learned	Have learned a lot
EBP – Step 1 (Ask)					
Knowledge					
Clinical Questions	276 (38.4)	192 (26.7)	114 (15.9)	126 (17.5)	10 (1.4)
The PICO/PECO framework	322 (44.8)	197 (27.4)	98 (13.6)	95 (13.2)	6 (0.8)
Skills					
How to formulate clinical questions using the PICO/PECO framework	340 (47.4)	203 (28.3)	105 (14.6)	66 (9.2)	4 (0.6)
EBP – Step 2 (Acquire)					
Knowledge					
Efficient order of evidence searching	296 (41.2)	190 (26.5)	118 (16.4)	103 (14.3)	11 (1.5)
Characteristics and search methods of literature databases [a]	250 (34.8)	188 (26.2)	107 (14.9)	154 (21.4)	19 (2.6)
Characteristics and search methods of databases for clinical practice guidelines and systematic reviews [b]	355 (49.4)	194 (27.0)	114 (15.9)	50 (7.0)	5 (0.7)
Skills					
How to search for evidence in an efficient order	332 (46.2)	200 (27.9)	111 (15.5)	69 (9.6)	6 (0.8)
How to search using literature databases[a]	272 (37.9)	184 (25.6)	100 (13.9)	146 (20.3)	16 (2.2)
How to search using databases for clinical practice guidelines and systematic reviews [b]	353 (49.2)	195 (27.2)	109 (15.2)	57 (7.9)	4 (0.6)

EBP – Step 3 (Appraise)					
Knowledge					
Differences in levels of evidence according to research design	326 (45.4)	187 (26.0)	110 (15.3)	88 (12.3)	7 (1.0)
Random and systematic error	344 (47.9)	199 (27.7)	101 (14.1)	69 (9.6)	5 (0.7)
Descriptive and inferential statistics	339 (47.2)	196 (27.3)	104 (14.5)	73 (10.2)	6 (0.8)
Skills					
How to critically appraise literature based on knowledge of research designs and levels of evidence	335 (46.7)	190 (26.5)	112 (15.6)	75 (10.4)	6 (0.8)
How to critically appraise literature based on knowledge of random and systematic error	349 (48.6)	203 (28.3)	106 (14.8)	55 (7.7)	5 (0.7)
How to critically appraise literature based on knowledge of descriptive and inferential statistics	350 (48.7)	198 (27.6)	104 (14.5)	61 (8.5)	5 (0.7)
EBP – Step 4 (Apply)					
Knowledge					
The four components of Step 4 [c]	309 (43.0)	197 (27.4)	119 (16.6)	84 (11.7)	9 (1.3)
Skills					
How to apply the four components of Step 4 in nursing practice [c]	311 (43.3)	197 (27.4)	120 (16.7)	81 (11.3)	9 (1.3)
EBP – Step 5 (Assess)					
Skills					
How to evaluate the outcomes of EBP	347 (48.3)	192 (26.7)	116 (16.2)	58 (8.1)	5 (0.7)

Note:
Experience of receiving EBP education is shown as the number of participants (%).
[a] Literature databases refer to resources such as PubMed and Ichushi Web, a bibliographic database indexing primarily Japanese-language literature on medicine, nursing, dentistry, and pharmacy.
[b] Databases for clinical practice guidelines and systematic reviews refer to resources such as the Minds Guideline Library, a database for domestic clinical practice guidelines published in Japan, and the Cochrane Library.
[c] The four components are as follows: (1) the patient's clinical state and circumstances, (2) research evidence, (3) the patient's preferences and actions, and (4) clinical expertise.
EBP: evidence-based practice; PECO: Patient, Exposure, Comparison, Outcome; PICO: Patient, Intervention, Comparison, Outcome.

Table 3. *Experience of receiving EBP education in in-service education among Japanese hospital nurses (n=718)*

Q–Q plots (quantile–quantile plot)

The Q–Q plots (Figure 3, 4 and 5) indicated approximately normal residuals, and the residual-versus-fitted plots showed no funneling, suggesting no material heteroscedasticity.

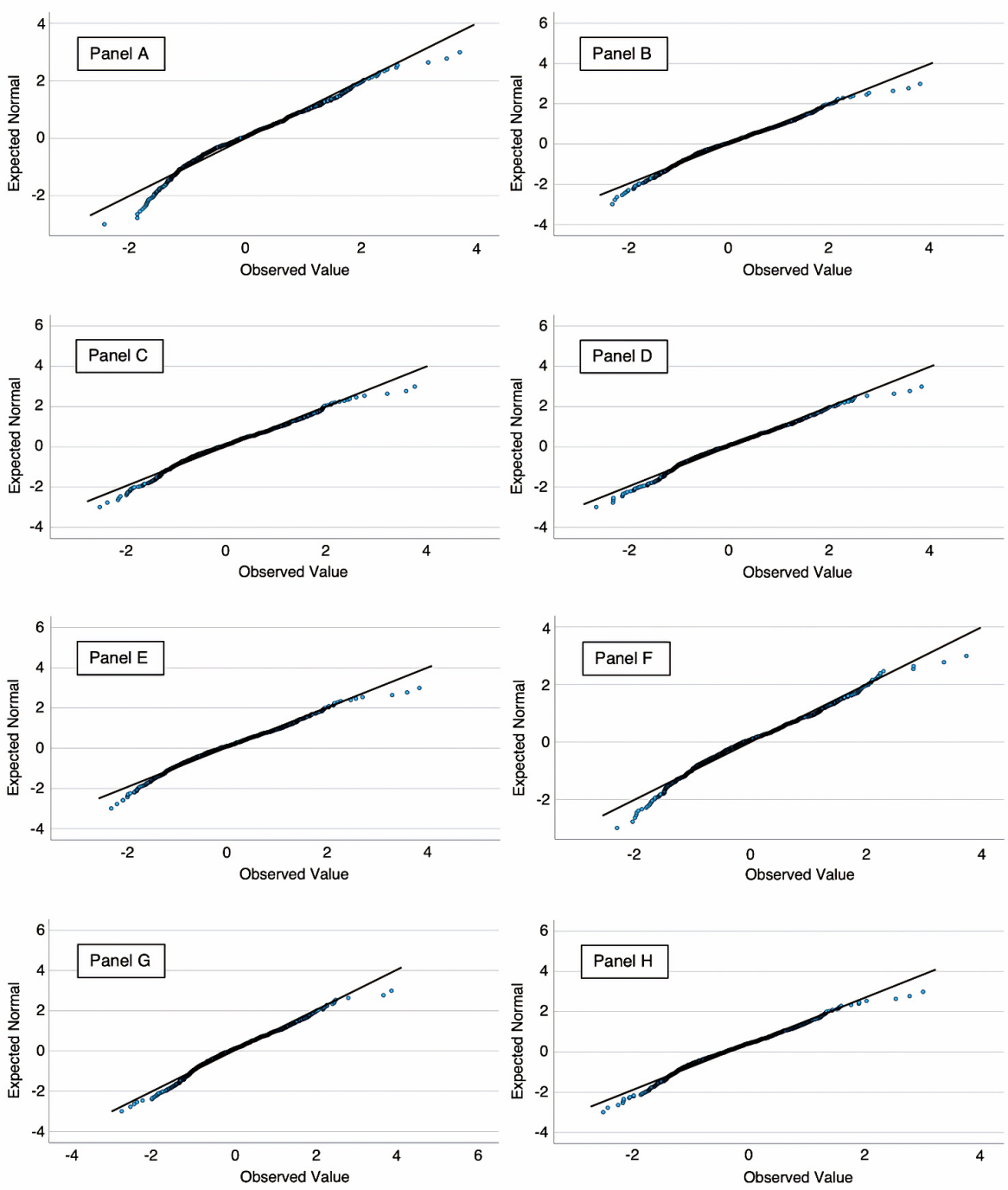

Figure 3. *Normal Q–Q plots of residuals for ANCOVA models (Panels A–H).*

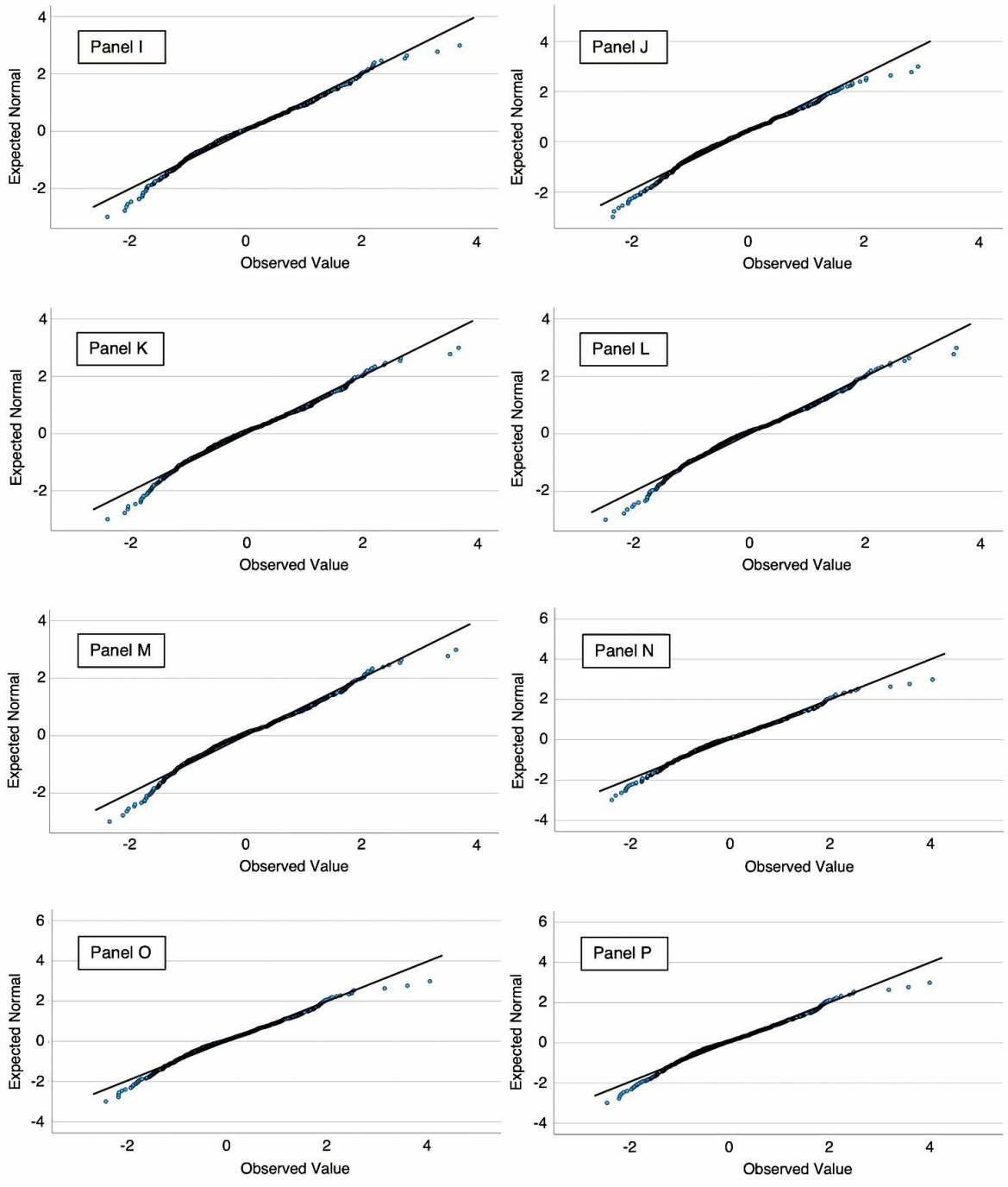

Figure 4. *Normal Q–Q plots of residuals for ANCOVA models (Panels I–P).*

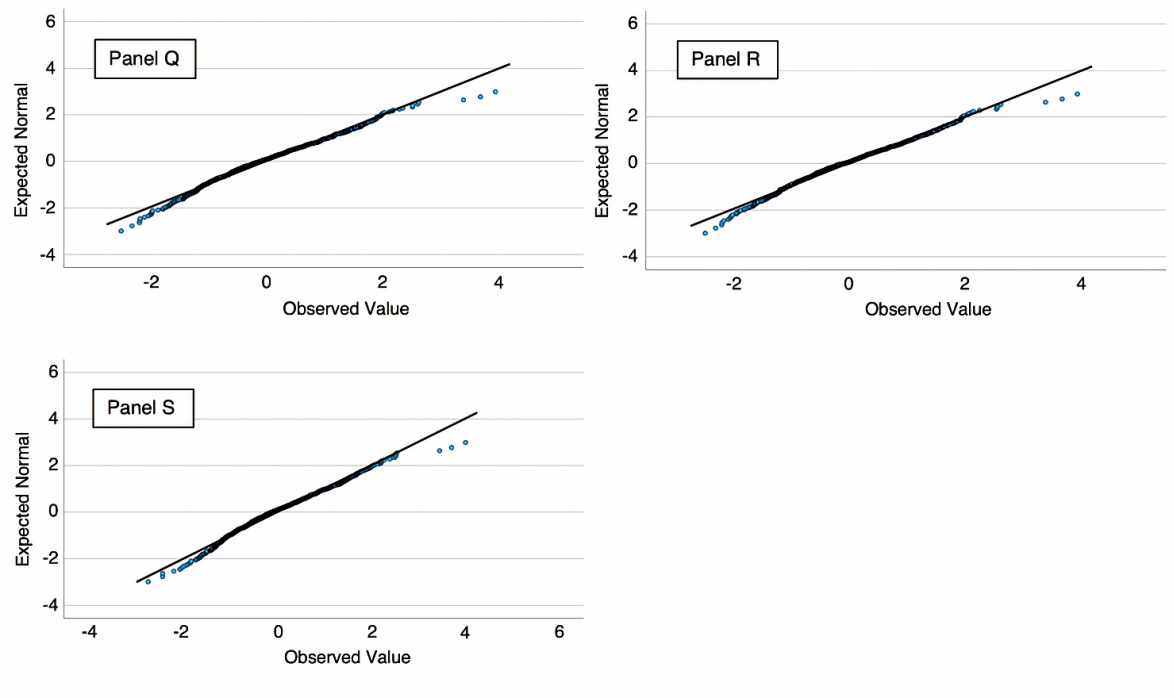

Figure 5. *Normal Q–Q plots of residuals for ANCOVA models (Panels Q–S).*

Note on Figures 3-5

Panels: A, six-category model—those who had received education on no, one, two, three, four, or all five steps; B, Step 1—Knowledge: Clinical Questions; C, Step 1—Knowledge: The PICO/PECO Framework; D, Step 1—Skills: How to formulate clinical questions using the PICO/PECO Framework; E, Step 2—Knowledge: Efficient order of evidence searching; F, Step 2—Knowledge: Characteristics and search methods of literature databases; G, Step 2—Knowledge: Characteristics and search methods of databases for clinical practice guidelines and systematic reviews; H, Step 2—Skills: How to search for evidence in an efficient order; I, Step 2—Skills: How to search using literature databases; J, Step 2—Skills: How to search using databases of clinical practice guidelines and systematic review; K, Step 3—Knowledge: Differences in levels of evidence according to research design; L, Step 3—Knowledge: Random and systematic error; M, Step 3—Knowledge: Descriptive and inferential statistics; N, Step 3—Skills: How to critically appraise literature based on

knowledge of research designs and levels of evidence; O, Step 3—Skills: How to critically appraise literature based on knowledge of random and systematic error; P, Step 3—Skills: How to critically appraise literature based on knowledge of descriptive and inferential statistics; Q, Step 4—Knowledge: The four components of Step 4; R, Step 4—Skills: How to apply the four components of Step 4 in nursing practice; S, Step 5—Skills: How to evaluate the outcomes of EBP.

Association between the extent of education received across the five steps of EBP and EBP knowledge and skills

Figure 6 illustrates the association between the extent of received education across the five steps of EBP and EBP knowledge and skills scores.

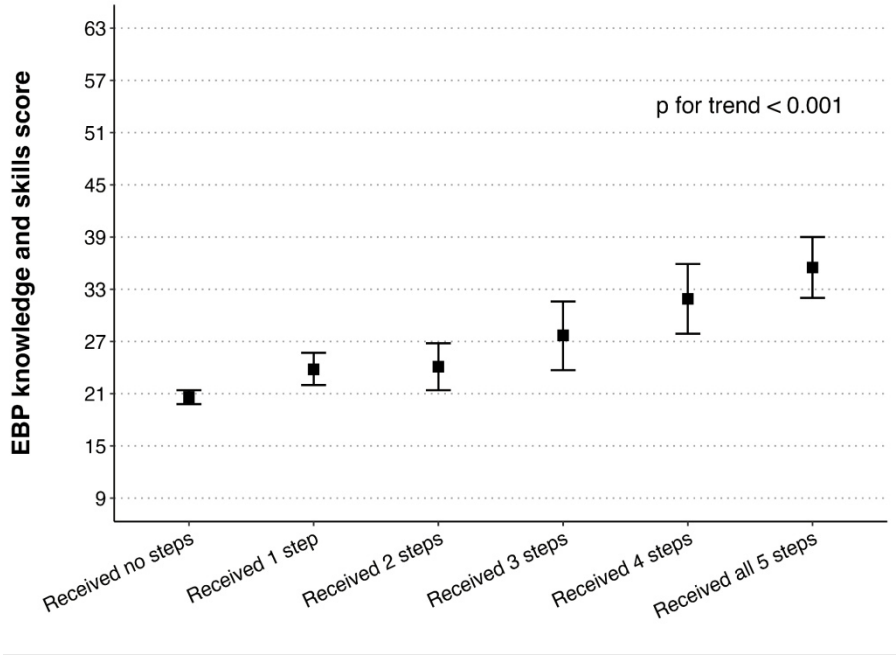

Figure 6. *Association between the extent of received education across the five steps of EBP and EBP knowledge and skills*

Note on Figure 6

Adjusted mean scores were estimated using analysis of covariance. Scores were adjusted for gender, educational level, years of clinical nursing experience, employment position, advanced practice certification, number of times conducting research, access to a literature database, and organizational attitude toward EBP. Error bars represent 95% confidence intervals.

EBP, evidence-based practice.

The figure shows the mean score for EBP knowledge and skills increased progressively as the number of EBP steps for which education had been received increased. The lowest scores were observed among nurses who had not received education on any of the steps, whereas the highest scores were observed among those who had received education on all five steps. This trend was statistically significant, indicating a dose–response relationship (p for trend<0.001).

Associations between item-specific experience of receiving EBP education and EBP knowledge and skills

Table 4 shows the associations between item-specific experience of receiving EBP education and EBP knowledge and skills scores. For all EBP-education items, participants who reported receiving more EBP education had significantly higher adjusted mean scores for EBP knowledge and skills. The scores showed a consistent increasing trend across the four response categories, and the linear trend was statistically significant for all EBP-education items (p for trend<0.001).

	Adjusted mean[a] (95% CI)	*p* for trend	Effect size: partial η^2
EBP – Step 1 (Ask)			
Knowledge: Clinical Questions		<0.001	0.09
Have not learned at all	18.5 (17.1–20.0)		
Have not learned	20.5 (19.1–21.8)		
Neither	25.3 (23.6–26.9)		
Have learned [b]	25.7 (24.3–27.0)		
Knowledge: The PICO/PECO Framework		<0.001	0.12

Have not learned at all	19.1 (17.9–20.3)		
Have not learned	20.8 (19.6–22.1)		
Neither	25.6 (23.9–27.4)		
Have learned [b]	27.8 (26.3–29.3)		
Skills: How to formulate clinical questions using the PICO/PECO Framework		<0.001	0.12
Have not learned at all	19.2 (18.1–20.3)		
Have not learned	21.7 (20.5–22.9)		
Neither	25.5 (23.8–27.2)		
Have learned [b]	29.4 (27.5–31.3)		
EBP – Step 2 (Acquire)			
Knowledge: Efficient order of evidence searching		<0.001	0.10
Have not learned at all	18.6 (17.3–20.0)		
Have not learned	20.5 (19.2–21.8)		
Neither	24.7 (23.0–26.3)		
Have learned [b]	26.4 (25.1–27.7)		
Knowledge: Characteristics and search methods of literature databases [c]		<0.001	0.07
Have not learned at all	16.5 (14.7–18.4)		
Have not learned	20.4 (18.7–22.0)		
Neither	24.5 (22.5–26.4)		
Have learned [b]	24.4 (23.3–25.4)		
Knowledge: Characteristics and search methods of databases for clinical practice guidelines and systematic reviews[d]		<0.001	0.14
Have not learned at all	19.1 (18.0–20.2)		
Have not learned	21.9 (20.6–23.2)		
Neither	24.8 (23.3–26.3)		
Have learned [b]	31.1 (29.1–33.1)		
Skills: How to search for evidence in an efficient order		<0.001	0.10
Have not learned at all	19.1 (17.9–20.3)		
Have not learned	21.3 (20.0–22.6)		
Neither	24.5 (22.9–26.0)		
Have learned [b]	27.9 (26.3–29.5)		
Skills: How to search using literature databases[c]		<0.001	0.08
Have not learned at all	17.1 (15.4–18.7)		
Have not learned	20.3 (18.6–22.1)		
Neither	23.1 (21.2–25.0)		
Have learned [b]	25.0 (24.0–26.0)		
Skills: How to search using databases for clinical practice guidelines and systematic reviews[d]		<0.001	0.11
Have not learned at all	19.2 (18.1–20.3)		
Have not learned	22.1 (20.8–23.4)		
Neither	25.0 (23.5–26.6)		
Have learned [b]	29.1 (27.1–31.0)		
EBP – Step 3 (Appraise)			
Knowledge: Differences in levels of evidence according to research design		<0.001	0.07
Have not learned at all	18.5 (17.1–19.9)		
Have not learned	21.1 (19.6–22.6)		
Neither	24.3 (22.7–26.0)		
Have learned [b]	25.5 (24.2–26.8)		
Knowledge: Random and systematic error		<0.001	0.07
Have not learned at all	18.5 (17.2–19.9)		
Have not learned	22.2 (20.7–23.6)		
Neither	24.9 (23.2–26.6)		
Have learned [b]	25.3 (23.9–26.7)		
Knowledge: Descriptive and inferential statistics		<0.001	0.06
Have not learned at all	18.7 (17.3–20.1)		
Have not learned	21.5 (20.0–23.0)		

Neither	24.4 (22.8–26.0)		
Have learned [b]	25.3 (24.0–26.7)		
Skills: How to critically appraise literature based on knowledge of research designs and levels of evidence		<0.001	0.09
Have not learned at all	18.3 (17.0–19.7)		
Have not learned	21.0 (19.5–22.5)		
Neither	23.9 (22.4–25.4)		
Have learned [b]	26.9 (25.4–28.3)		
Skills: How to critically appraise literature based on knowledge of random and systematic error		<0.001	0.10
Have not learned at all	18.6 (17.3–19.8)		
Have not learned	21.8 (20.5–23.1)		
Neither	24.2 (22.7–25.7)		
Have learned [b]	28.0 (26.3–29.7)		
Skills: How to critically appraise literature based on knowledge of descriptive and inferential statistics		<0.001	0.10
Have not learned at all	18.8 (17.5–20.1)		
Have not learned	21.2 (19.9–22.6)		
Neither	24.2 (22.7–25.6)		
Have learned [b]	28.1 (26.4–29.7)		
EBP – Step 4 (Apply)			
Knowledge: The four components of Step 4[e]		<0.001	0.12
Have not learned at all	18.5 (17.2–19.8)		
Have not learned	20.7 (19.4–22.0)		
Neither	24.6 (23.1–26.0)		
Have learned [b]	28.2 (26.6–29.7)		
Skills: How to apply the four components of Step 4 in nursing practice[e]		<0.001	0.12
Have not learned at all	18.4 (17.2–19.7)		
Have not learned	21.1 (19.8–22.4)		
Neither	24.6 (23.2–26.1)		
Have learned [b]	27.9 (26.3–29.5)		
EBP – Step 5 (Assess)			
Skills: How to evaluate the outcomes of EBP		<0.001	0.15
Have not learned at all	18.5 (17.3–19.6)		
Have not learned	21.8 (20.5–23.1)		
Neither	24.9 (23.5–26.4)		
Have learned [b]	30.4 (28.6–32.3)		

Note:
[a] Adjusted mean scores were estimated using analysis of covariance. Scores were adjusted for gender, educational level, years of clinical nursing experience, employment position, advanced practice certification, number of times conducting research, access to a literature database, and organizational attitude toward EBP.
[b] The responses "Have learned" and "Have learned a lot" were combined into a single category labeled "Have learned." For each EBP-education item, the level of educational experience was determined based on responses for both pre-licensure and in-service education. When participants reported different levels of experience across the two educational settings, the higher of the two was retained, following the rank order: "Have not learned at all" < "Have not learned" < "Neither" < "Have learned."
[c] Literature databases refer to resources such as PubMed and Ichushi Web, a bibliographic database indexing primarily Japanese-language literature on medicine, nursing, dentistry, and pharmacy.
[d] Databases for clinical practice guidelines and systematic reviews refer to resources such as the Minds Guideline Library, a database for domestic clinical practice guidelines published in Japan, and the Cochrane Library.
[e] The four components are as follows: (1) the patient's clinical state and circumstances, (2) research evidence, (3) the patient's preferences and actions, and (4) clinical expertise.
CI: confidence interval; EBP: evidence-based practice; PECO: Patient, Exposure, Comparison, Outcome; PICO: Patient, Intervention, Comparison, Outcome.

Table 4. *Associations between item-specific experience of receiving EBP education and EBP knowledge and skills (n=718).*

Relative importance of EBP-education items for the EBP knowledge and skills

Figure 7 illustrates the relative importance of EBP-education items for the EBP knowledge and skills score.

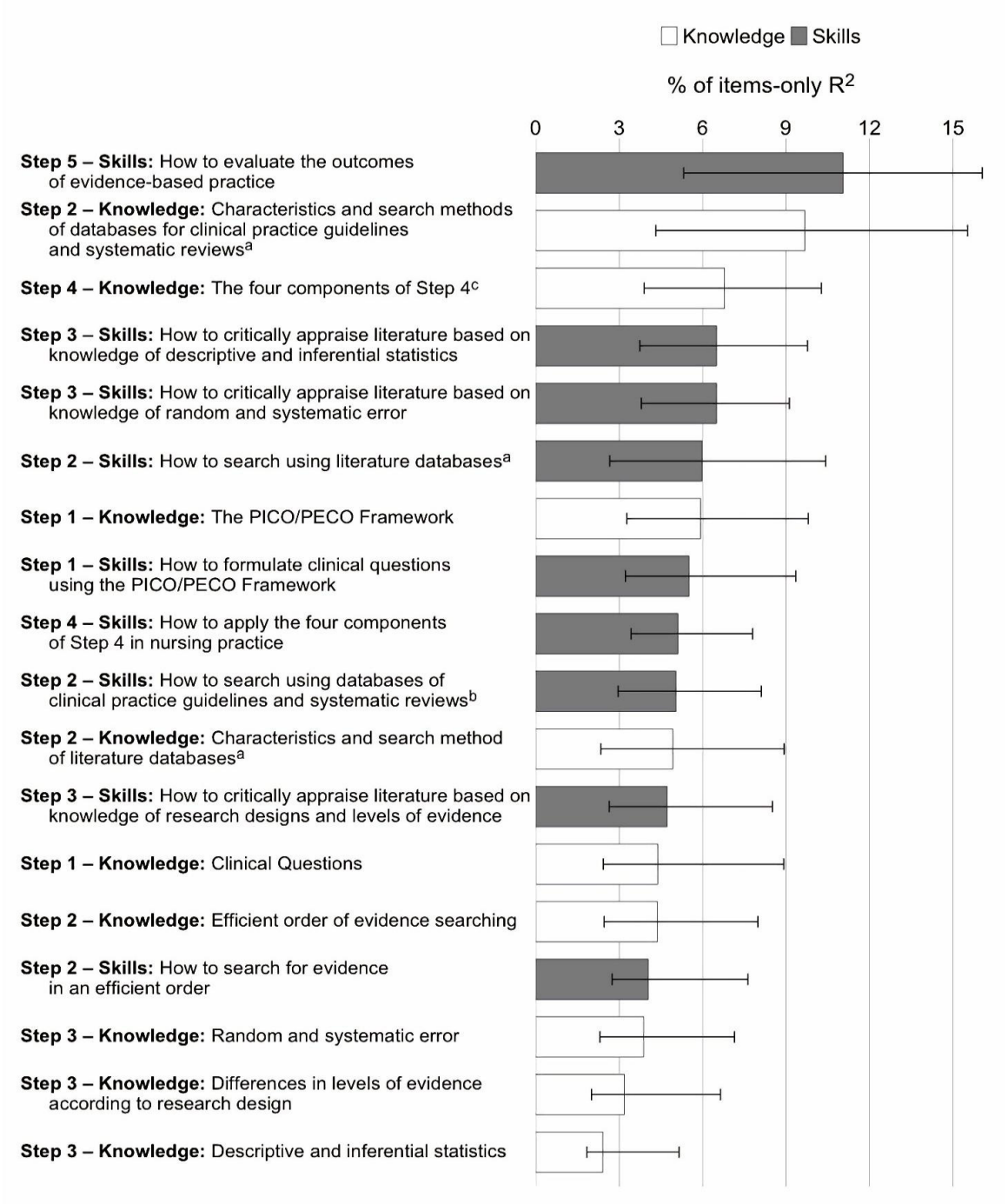

Figure 7. *Relative importance of EBP-education items for the EBP knowledge and skills score.*

Note on Figure 7

Bars show the % of EBP education items-only R^2 contributed by each item, computed using the Lindeman–Merenda–Gold method; error bars are bootstrapped 95% confidence intervals. R^2=0.338; adjusted R^2=0.270; EBP education items-only R^2=0.217. The model included EBP-education items, gender, educational level, years of experience as a clinical nurse, employment position, advanced practice certification, number of experiences conducting research, literature database, and organizational attitude toward EBP.

[a] Literature databases refer to resources such as PubMed and Ichushi Web, a bibliographic database indexing primarily Japanese-language literature on medicine, nursing, dentistry, and pharmacy.

[b] Databases for clinical practice guidelines and systematic reviews refer to resources such as the Minds Guideline Library, a database for domestic clinical practice guidelines published in Japan, and the Cochrane Library.

[c] The four components are as follows: (1) the patient's clinical state and circumstances, (2) research evidence, (3) the patient's preferences and actions, and (4) clinical expertise.

EBP, evidence-based practice, PECO, Patient, Exposure, Comparison, Outcome; PICO, Patient, Intervention, Comparison, Outcome.

Ranked by relative importance, the three items accounting for the largest proportion of explained variance were Step 5—Skills (evaluating EBP outcomes), Step 2—Knowledge (characteristics and search methods of databases for clinical practice guidelines and systematic reviews), and Step 4—Knowledge (the four components of Step 4).

Table 5 shows detailed results for the same linear regression model, including unstandardized coefficients, standard errors, p-values, and the change-in-R^2 (ΔR^2) and partial F (ΔF) statistics for all variables.

Factors	Reference	B (SE)	p-value for B	ΔR^2	ΔF	p-value for ΔF
Experience of receiving EBP education						
Step 1 (Ask)						
Knowledge: Clinical Questions				0.002	0.788	0.501
Have not learned	vs have not learned at all	0.134 (1.388)	0.923			
Neither	vs have not learned at all	1.537 (1.698)	0.366			
Have learned [b]	vs have not learned at all	−0.550 (1.580)	0.728			
Knowledge: The PICO/PECO Framework				0.001	0.434	0.729
Have not learned	vs have not learned at all	−0.868 (2.001)	0.665			
Neither	vs have not learned at all	1.066 (2.569)	0.678			
Have learned [b]	vs have not learned at all	0.981 (2.541)	0.700			
Skills: How to formulate clinical questions using the PICO/PECO Framework				0.001	0.316	0.814
Have not learned	vs have not learned at all	0.869 (1.991)	0.663			
Neither	vs have not learned at all	−0.061 (2.572)	0.981			
Have learned [b]	vs have not learned at all	1.561 (2.668)	0.559			
Step 2 (Acquire)						
Knowledge: Efficient order of evidence searching				0.001	0.457	0.712
Have not learned	vs have not learned at all	−0.983 (1.418)	0.489			
Neither	vs have not learned at all	0.700 (1.742)	0.688			
Have learned [b]	vs have not learned at all	−0.285 (1.630)	0.861			
Knowledge: Characteristics and search methods of literature databases [c]				0.006	1.806	0.145
Have not learned	vs have not learned at all	2.983 (1.721)	0.084			
Neither	vs have not learned at all	3.361 (2.181)	0.124			
Have learned [b]	vs have not learned at all	1.291 (1.862)	0.488			
Knowledge: Characteristics and search methods of databases for clinical practice guidelines and systematic reviews [d]				0.007	2.450	0.063
Have not learned	vs have not learned at all	0.126 (1.712)	0.941			
Neither	vs have not learned at all	0.161 (2.044)	0.937			
Have learned[b]	vs have not learned at all	5.267 (2.362)	0.026			
Skills: How to search for evidence in an efficient order				0.002	0.622	0.601
Have not learned	vs have not learned at all	−1.987 (1.546)	0.199			
Neither	vs have not learned at all	−2.202 (1.974)	0.265			
Have learned [b]	vs have not learned at all	−1.849 (1.936)	0.340			

Skills: How to search using literature databases [c]				0.005	1.553	0.200
Have not learned	vs have not learned at all	0.170 (1.801)	0.925			
Neither	vs have not learned at all	0.507 (2.071)	0.807			
Have learned [b]	vs have not learned at all	2.977 (1.820)	0.102			
Skills: How to search using databases for clinical practice guidelines and systematic reviews [d]				0.003	0.920	0.431
Have not learned	vs have not learned at all	2.449 (1.877)	0.192			
Neither	vs have not learned at all	2.042 (2.235)	0.361			
Have learned [b]	vs have not learned at all	−0.141 (2.382)	0.953			
Step 3 (Appraise)						
Knowledge: Differences in levels of evidence according to research design				0.002	0.687	0.560
Have not learned	vs have not learned at all	−1.849 (1.875)	0.324			
Neither	vs have not learned at all	−2.001 (2.234)	0.371			
Have learned [b]	vs have not learned at all	−0.229 (1.980)	0.908			
Knowledge: Random and systematic error				0.003	1.088	0.354
Have not learned	vs have not learned at all	2.687 (2.142)	0.210			
Neither	vs have not learned at all	2.707 (2.698)	0.316			
Have learned [b]	vs have not learned at all	0.051 (2.387)	0.983			
Knowledge: Descriptive and inferential statistics				0.0003	0.110	0.954
Have not learned	vs have not learned at all	−1.099 (2.165)	0.612			
Neither	vs have not learned at all	−0.453 (2.457)	0.854			
Have learned [b]	vs have not learned at all	−0.272 (2.189)	0.901			
Skills: How to critically appraise literature based on knowledge of research designs and levels of evidence				0.002	0.609	0.609
Have not learned	vs have not learned at all	0.132 (2.120)	0.950			
Neither	vs have not learned at all	1.613 (2.322)	0.487			
Have learned [b]	vs have not learned at all	2.325 (2.262)	0.304			
Skills: How to critically appraise literature based on knowledge of random and systematic error				0.008	2.664	0.047
Have not learned	vs have not learned at all	8.249 (3.581)	0.022			
Neither	vs have not learned at all	−2.465 (4.695)	0.600			
Have learned [b]	vs have not learned at all	2.502 (4.050)	0.537			
Skills: How to critically				0.007	2.342	0.072

appraise literature based on knowledge of descriptive and inferential statistics						
Have not learned	vs have not learned at all	−8.528 (3.629)	0.019			
Neither	vs have not learned at all	0.019 (4.635)	0.997			
Have learned [b]	vs have not learned at all	−2.651 (3.863)	0.493			
Step 4 (Apply)						
Knowledge: The four components of Step 4 [e]				0.002	0.532	0.660
Have not learned	vs have not learned at all	−0.384 (2.540)	0.880			
Neither	vs have not learned at all	1.302 (3.083)	0.673			
Have learned [b]	vs have not learned at all	2.645 (3.052)	0.387			
Skills: How to apply the four components of Step 4 in nursing practice[e]				0.0005	0.162	0.922
Have not learned	vs have not learned at all	−0.611 (2.588)	0.814			
Neither	vs have not learned at all	−0.356 (3.182)	0.911			
Have learned[b]	vs have not learned at all	−1.695 (3.115)	0.587			
Step 5 (Assess)						
Skills: How to evaluate the outcomes of EBP				0.009	2.948	0.032
Have not learned	vs have not learned at all	2.054 (1.560)	0.188			
Neither	vs have not learned at all	2.006 (1.771)	0.258			
Have learned [b]	vs have not learned at all	5.608 (1.960)	0.004			
Potential confounding factors						
Gender				0.001	1.448	0.229
Men	vs women	1.584 (1.316)	0.229			
Educational level				0.016	8.043	<0.001
Bachelor's degree	vs diploma or associate degree	−0.158 (0.932)	0.865			
Master's degree	vs diploma or associate degree	7.161 (1.869)	<0.001			
Years of clinical nursing experience				0.001	0.266	0.766
4–9	vs ≤3	−0.16 (1.079)	0.882			
≥10	vs ≤3	−0.757 (1.129)	0.503			
Employment position				0.001	0.607	0.436
Charge nurse or assistant head nurse	vs staff nurse	1.006 (1.292)	0.436			
Advanced practice certification				0.003	2.475	0.116
Certified nurse or certified specialist nurse	vs no	3.073 (1.953)	0.116			
Number of times conducting research				0.013	6.433	0.002

1	vs 0	1.893 (1.001)	0.059			
≥2	vs 0	3.698 (1.032)	<0.001			
Literature database				0.001	0.628	0.428
Yes	vs no	1.405 (1.773)	0.428			
Organizational attitude toward EBP				0.002	0.581	0.628
Neither	vs non-positive	−0.921 (1.232)	0.455			
Moderately positive	vs non-positive	−0.305 (1.179)	0.796			
Very positive	vs non-positive	0.388 (1.280)	0.762			

Note:
These results are from the same model used for the relative-importance analysis in Figure 7.
Dummy variables coded 0 for "have not learned at all"/ 1 for "have not learned"/ 2 for "neither"/ 3 for "have learned" (EBP education items); 0 for women/1 for men (gender); 0 for diploma or associate degree/1 for bachelor's degree/2 for master's degree (educational level); 0 for "≤3"/1 for "4–9"/2 for "≥10" (years of clinical nursing experience); 0 for staff nurse/1 for charge nurse and assistant head nurse (employment position); 0 for "no"/1 for certified nurse or certified specialist nurse (advanced practice certification); 0 for "0"/1 for "1"/2 for "≥2" (number of times conducting research); 0 for "no"/1 for "yes" (literature database); and 0 for non-positive/1 for neither /2 for moderately positive /3 for very positive (organizational attitude toward EBP).
R^2=0.338; adjusted R^2=0.270; EBP education items-only R^2=0.217.
[a] EBP knowledge and skills measured by the Evidence-Based Practice Questionnaire Japanese version. EBP knowledge and skills score ranges from 9 to 63, with higher scores indicating more EBP knowledge and skills.
[b] The responses "Have learned" and "Have learned a lot" were combined into a single category labeled "Have learned." For each EBP-education item, the level of educational experience was determined based on responses for both pre-licensure and in-service education. When participants reported different levels of experience across the two educational settings, the higher of the two was retained, following the rank order: "Have not learned at all" < "Have not learned" < "Neither" < "Have learned."
[c] Literature databases refer to resources such as PubMed and Ichushi Web, a bibliographic database indexing primarily Japanese-language literature on medicine, nursing, dentistry, and pharmacy.
[d] Databases for clinical practice guidelines and systematic reviews refer to resources such as the Minds Guideline Library, a database for domestic clinical practice guidelines published in Japan, and the Cochrane Library.
[e] The four components are as follows: (1) the patient's clinical state and circumstances, (2) research evidence, (3) the patient's preferences and actions, and (4) clinical expertise.
B: unstandardized coefficients; CI: confidence interval; EBP: evidence-based practice; PECO: Patient, Exposure, Comparison, Outcome; PICO: Patient, Intervention, Comparison, Outcome; SE: standard error; ΔR^2: increase in R-squared attributable to adding the variable to a model that already contains all other variables; i.e., the variable's semi-partial R^2 (unique contribution); ΔF: partial F statistic for adding the variable to the model.

Table 5. *Regression results for the EBP knowledge and skills score [a], including all variables.*

DISCUSSION

This study investigated the extent of Japanese hospital nurses' experience of receiving specific educational content related to each step of EBP in both pre-licensure and in-service education and examined its association with EBP knowledge and skills. The findings showed that the experience of receiving EBP education was limited overall, with even lower levels observed for skills-related items. In both pre-licensure and in-service education, fewer than 10% of nurses reported having learned how

to formulate clinical questions using the PICO/PECO framework, characteristics and search methods of databases for clinical practice guidelines and systematic reviews, how to search using databases for clinical practice guidelines and systematic reviews, and how to evaluate the outcomes of EBP. Additionally, a statistically significant dose-response relationship was observed between the extent of education received across the five EBP steps and the level of EBP knowledge and skills. Furthermore, in all EBP-education items, higher item-specific experience of receiving EBP education was significantly associated with greater EBP knowledge and skills scores. Furthermore, relative importance analysis showed three leading contributors. These were Step 5—Skills (evaluating EBP outcomes), Step 2—Knowledge (characteristics and search methods of databases for clinical practice guidelines and systematic reviews), and Step 4—Knowledge (the four components of Step 4). These findings suggest that comprehensive exposure to EBP education may play a critical role in developing EBP competencies. Additionally, the observed dose–response between the extent of experience of EBP education and knowledge/skills aligns with Kirkpatrick Level 2 (Learning)—i.e., greater educational coverage is associated with stronger learning outcomes [16]. While our endpoints were confined to Level 2, the model indicates that strengthened learning can support subsequent behavior (Level 3) and results (Level 4). Thus, future studies should extend the evaluation to Levels 3 and 4.

Our findings indicated that nurses' experience of receiving EBP education was generally limited. Except for items related to literature databases, fewer than 25% of nurses reported having learned about any of the EBP-education items in pre-licensure education. The percentage of nurses who had learned about each EBP-education item in in-service education was consistently below 25%. Although EBP education has been insufficiently embedded in both pre-licensure and in-service curricula in Japan [31,32], such limited exposure is not unique to Japan. Recent reviews have reported that, worldwide, many nurses have never received EBP education [12] and that the overall level of EBP knowledge and skills among nurses remains low [33]. These findings highlight the urgent global need to improve EBP education. However, both pre-licensure and in-service education settings lack

sufficient educators capable of providing EBP education [8, 34]. This shortage is likely a major contributor to nurses having limited experience in receiving EBP education. Therefore, developing and implementing training programs to equip educators with the competencies needed to provide EBP education is important. In so doing, the infrastructure for teaching EBP could be strengthened, and EBP implementation in nursing practice can be promoted.

In the present study, a stepwise increase in EBP knowledge and skills scores was observed as the number of EBP steps for which education had been received increased, indicating an association between the comprehensiveness of the EBP education and competency level. Additionally, the item-specific experience of receiving EBP education was positively associated with EBP knowledge and skills scores across all EBP-education items, and a relative importance analysis indicated that the Step 4 and Step 5 items were placed toward the upper end of the contribution rankings. These findings provide quantitative evidence that supports the argument that education encompassing all five steps of EBP is important to improve EBP knowledge and skills [35]. One systematic review has indicated that EBP educational programs tend to focus solely on Steps 1 to 3 of the five steps of EBP [36]. Therefore, future EBP education programs must comprehensively incorporate all five steps rather than only focus on specific ones. At the same time, in the present study, even among nurses who had received education on all five steps, the mean EBP knowledge and skills score was 35.5 on a scale ranging from 9 to 63, indicating that their competency levels remained insufficient. This suggests that to develop EBP competencies, both an adequate extent of educational content and appropriate educational delivery methods are required. In other words, providing practical education programs focused on EBP could be necessary to improve EBP competency levels among nurses effectively. However, EBP education is often integrated into broader courses, such as nursing research or statistics, and is rarely offered as a stand-alone program [8, 9, 10, 11]. Therefore, developing practical, EBP-specific educational programs would be essential to improve nurses' EBP knowledge and skills effectively.

Limitations

This study had several limitations. First, because of the cross-sectional design, a causal association between the experience of receiving EBP education and EBP knowledge and skills cannot be established; however, a statistically significant trend was observed in which EBP knowledge and skills scores increased with the amount of EBP education received, as indicated by the p for trend. This finding serves as additional evidence supporting a dose-response relationship between the two. Second, because the response rate was 28.7%, we must include the possibility of selection bias in which people with relatively more interest in EBP were selected. Third, the study relied on self-reported participant experience with EBP education, which may have introduced recall bias. To obtain a more objective understanding of EBP education's current status, future research should directly investigate institutions such as universities, vocational schools, and healthcare facilities by examining their course offerings, content, and number of instructional hours. Fourth, because our survey data were collected in 2022 (June–September), the findings may not fully reflect the current landscape of EBP education. However, the first explicit mention of EBP in Japan's pre-licensure education was included in the Model Core Curriculum for Nursing Education (2024 revision) in March 2025 [37]; as this reform will chiefly affect future cohorts, any immediate influence on the educational exposure of the current hospital nursing workforce is likely modest. Finally, this study was conducted in Japan, where EBP education has not been fully promoted. This geographic specificity means that comparisons with findings from countries having more advanced EBP education should be made with caution. Despite this, the results may offer valuable insights, particularly for countries where EBP education is still in its early stages of promotion.

CONCLUSION

We investigated the extent to which hospital nurses in Japan had experienced receiving specific educational content related to each step of EBP in both pre-licensure and in-service education; we

also examined its association with EBP knowledge and skills. Fewer than 25% of nurses reported having learned about any of the EBP-education items except for characteristics and search methods of literature databases in pre-licensure education, and fewer than 25% reported having learned about each EBP-education item in in-service education. A dose–response relationship was observed between the number of EBP steps for which education was received and the level of EBP competency. Additionally, the item-specific experience of receiving EBP education was positively associated with EBP knowledge and skills scores across all EBP-education items, and a relative importance analysis indicated that the Step 4 and Step 5 items were placed toward the upper end of the contribution rankings. In the future, to effectively improve the EBP knowledge and skills of nurses, it would be essential to: (1) design educational programs that comprehensively cover all five steps rather than only placing focus on specific steps; (2) develop practical, EBP-specific educational programs; and (3) develop educational programs that enable EBP educators to cultivate professionals capable of delivering such education.

List of abbreviations

EBP: evidence-based practice

PICO: Patient, Intervention, Comparison, Outcome

PECO: Patient, Exposure, Comparison, Outcome

Competing interest

The authors declare that they have no competing financial interests or personal relationships that may have influenced the work reported in this study.

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