NapoliSana Campania
ORGANO UFFICIALE ORDINE DEGLI INFERMIERI DI NAPOLI
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CASE DI COMUNITÀ

"Mancano i soldi per il personale"

FNOPI
FEDERAZIONE NAZIONALE ORDINI PROFESSIONI INFERMIERISTICHE

Elezioni, le proposte normative della FNOPI per la professione infermieristica

Incremento della base contrattuale e riconoscimento economico dell'esclusività

La difesa della salute nell'agenda degli infermieri

l'editoriale di **Teresa Rea**

Alla due giorni di dibattito sulla salute, "Laboratorio sanità 20/30", piena zeppa di autorità, esperti, firme autorevoli di livello nazionale e internazionale, noi infermieri napoletani abbiamo giocato un ruolo da protagonisti. Abbiamo gestito ben due tavoli d'approfondimento scientifico, abbiamo partecipato a dibattiti di alto profilo. E abbiamo ricevuto complimenti e applausi a profusione. Apprezzamenti espressi anche pubblicamente e non solo a quattrocchi. Insieme al plauso, anche tanti ringraziamenti per come abbiamo gestito e partecipato alla lotta al Covid. Tanta roba, insomma. Che fa pur piacere sentirsi dire. Ma che stona difronte alle mancate risposte delle istituzioni ai nodi che legano lo sviluppo della nostra professione. Quei complimenti, magari anche onesti, finiscono per diventare come fumo senz'arrosto. Perché le lusinghe fanno bene, soprattutto quando sono accompagnate dai fatti. Altrimenti restano parole vuote, chiacchiere e distintivo, come dice Robert De Niro nel capolavoro di Brian De Palma. Perché, sia sotto il profilo strettamente professionale, sia sotto il profilo economico, a ben guardare la professione d'infermiere, soprattutto in questi ultimi anni, è stata abbandonata a se stessa. Altro che angeli ed eroi. Le chiacchiere e le pacche sulle spalle non servono se poi la professione perde appeal tra i giovani. Da due anni a questa parte, guarda caso gli anni della pandemia, ci si iscrive sempre meno ai corsi d'infermieristica. E quest'anno, con cinquecento iscritti in meno, la cosa diventa preoccupante. Ci sono precise responsabilità delle istituzioni pubbliche sanitarie e politiche alla base di questo disamore. Responsabilità gravi, visto che avere pochi infermieri in ospedale e sul territorio significa avere meno assistenza sanitaria e meno salute per i cittadini. Il covid ha contagiato e ucciso tanti infermieri. Colleghi bravi cui va il nostro cordoglio e il nostro grazie perenne. Ma non basta da solo a spiegare il calo d'appeal della nostra professione. Ci sono altre cause, tutte importanti. Nodi antichi da noi segnalati alla politica e alle istituzioni sanitarie che sono restate colpevolmente in silenzio. Primo problema: gli infermieri sono pochi rispetto al fabbisogno. Nei nostri ospedali un infermiere tiene in carico fino a 18 ammalati, quando l'Oms ne raccomanda uno ogni sei. Questo significa cattiva assistenza per i cittadini, ma anche superlavoro e turni massacranti per i colleghi. Ma vuol dire anche mancate assunzioni, un regime di precarietà e d'incertezza occupazionale per gli infermieri a tempo determinato che rende la professione sempre meno appetibile. C'è poi la scarsa valorizzazione della professione e gli stipendi che sono tra i più bassi d'Europa. Senza contare i crescenti rischi d'aggressioni e di violenza contro i quali nessun provvedimento fino ad ora è stato preso. Né s'intravede un argine. E allora la politica si assuma le responsabilità che le competono. Senza infermieri non c'è salute. A chi è in campagna elettorale e chiede voti noi rispondiamo con l'agenda degli infermieri, tutta centrata sui bisogni dei cittadini. Bisogni che collimano con le nostre aspettative professionali. Bisogna allora assumere personale dove manca e risolvere definitivamente l'annoso precariato. Non ci piace sentirci dire che per le Case di Comunità non ci sono soldi per il personale cosi come ha risposto il Mef al presidente De Luca. Sul piano economico bisogna incrementare la base contrattuale e dare riconoscimento in busta paga dell'esclusività delle professioni infermieristiche.

Insieme con il riconoscimento delle competenze specialistiche che già oggi esistono di fatto, ma che non sono ufficialmente riconosciute agli infermieri. Anche per dare più valore e aspettative ai nostri professionisti chiediamo alle istituzioni sanitarie una seria riflessione sui modelli di organizzazione dei servizi. Infine alle Università, per quanto riguarda la formazione, sottolineiamo la necessità di una totale revisione e aggiornamento dei modelli formativi. La politica decida, i cittadini non possono più attendere.

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NAPOLI - CITTÀ DELLA SCIENZA

Salute di genere e perso

Ampio risalto e grande valorizzazione della professione infermieristica nella due giorni volu rigenerare il sistema salute. Ospitati presso il centro congressi di Città della Scienza di Napo sessione, coordinata dalla Presidente Teresa Rea, è stata dedicata al tema della salute di ger

di **Pino de**

"*Nessuno sia escluso*"! E' questo l'impegno emerso dal confronto di Napoli su un tema di frontiera: ***"Dalla medicina alla salute di genere"***. Un confronto interno all'universo infermieristico, sviluppato con relatori di assoluto prestigio e dibattuto poi in un interessante confronto con tutte le professioni sanitarie. "Laboratorio sanità 20/30", una due giorni di incontri a Napoli organizzata dalla Fondazione Gutenberg per l'innovazione e la sicurezza in sanità in collaborazione con Agenas (Agenzia Nazionale per i Servizi Sanitari Regionali), e il patrocinio dell'Istituto Superiore di Sanità, della Regione Campania, del Comune di Napoli e della Conferenza delle Regioni e Province autonome.

Personalizzazione e differenze Professioni sanitarie a confronto

Di estremo interesse è stato anche il dibattito sul tema della medicina, assistenza e salute di genere che si è svolto subito dopo la lettura delle relazioni. Un confronto con molte sfumature, a testimonianza del gran lavoro che aspetta le professioni sanitarie tutte per costruire in futuro un paradigma comune sul concetto di cure personalizzate o quanto meno sempre più attente alle differenze di biologiche e non solo.

Formazione - Teresa Rea (Opi Napoli) si è soffermata sull'aspetto formativo e sull'impegno dell'Ordine professionale verso una maggiore attenzione alle differenze, non solo di sesso, tra gli assistiti: "*Noi infermieri preferiamo parlare di salute di genere perché riteniamo che personalizzare le cure trascende dal genere e cura della persona, perché si tratta non solo di patologie, ma anche di prevenzione e territorio e per sottolineare la necessità di mettere a punto protocolli che aiutino a ridurre diseguaglianze, a concretizzare un principio di equità, un'integrazione trasversale di competenze. In questo senso deve essere inteso l'Impegno che come Fnopi e Ordine di Napoli stiamo mettendo su queste tematiche, soprattutto sul versante della formazione, per avere in futuro infermieri più preparati e sensibili su questo tema*". *Sulla stessa lunghezza d'onda sono i* Tecnici Sanitari di Radiologia Medica e delle professioni sanitarie tecniche, della riabilitazione e della prevenzione. **Teresa Calandra**, presidente della federazione nazionale, sottolinea appunto "*la costruzione di una rete permanente, un osservatorio per focalizzare l'attenzione delle professioni tecniche sul tema delle differenze di genere. Puntiamo in particolare sull'acquisizione di dati e di informazioni scientifiche sull'argomento anche per puntare ad una formazione matura sull'argomento e sul rispetto di principi etici associati*".

Deontologia – Citando Freud, le sue anticipazioni sulle differenze di genere e il codice deontologico dell'Ordine, **Alessandra Ruberto** è intervenuta in rappresentanza dell'Ordine dei Psicologici. Per i medici della FnomceO la questione ha rilevanti aspetti culturali. **Franco Lavalle** sostiene infatti che "*la medicina si muove da sempre in modo corretto, seguendo cioè da sempre le differenze che ogni individuo manifesta*". Per **Cinzia di Matteo** (Fnopo) "*bisogna avviare un processo di alfabetizzazione al tema. Come Fnopo abbiamo messo a punto un sito web dedicato per facilitare gli iscritti ad avvicinarsi al tema, puntando molto sulla formazione di base e su quella permanente". Di "processo culturale" appena avviato ha parlato per la Fnopi anche* ***Sandro Arnolfi***: "*C'è bisogno di aumentare di molto le nostre conoscenze. Dobbiamo fare in modo che questa sensibilità verso la diversità entri a pieno nella cultura di tutti gli operatori sanitari"*. Infine, per **Amelia Filippelli**, coordinatrice del tavolo sulla medicina di genere della Regione Campania, "*bisogna istituire degli ambulatori dedicati alla medicina di genere in maniera omogenea su tutto il territorio nazionale per diffondere a macchia d'olio la cultura della differenza e della diversità nella medicina e nell'assistenza sanitaria*".

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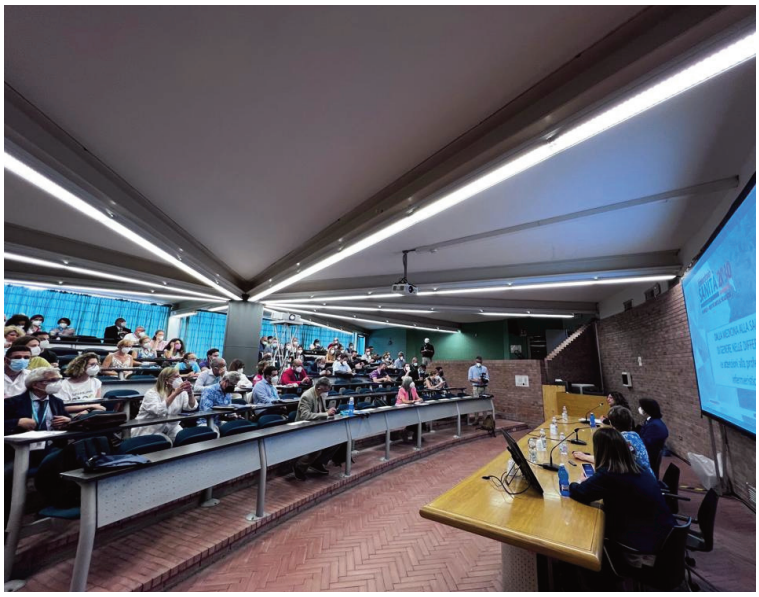
onalizzazione delle cure

uta da Agenas e Regione Campania per riflettere sul futuro della sanità, recuperare i divari, li, gli infermieri hanno svolto un ruolo importante all'interno della manifestazione. Un'intera nere. Di particolare interesse il dibattito con i rappresentanti delle altre professioni sanitarie

Martino



"Nessuno sia escluso", dicevamo. E' il concetto con il quale **Teresa Rea** ha presentato l'iniziativa. *"Gli infermieri sanno come affrontare il problema: la personalizzazione delle cure trascende dal genere perché cura la persona. Per questo il percorso è chiaro: rispetto e non discriminazione; non abbandono; rispetto della concezione di vita, salute e benessere, recita il nostro Codice deontologico. Ed è l'impegno che noi assumiamo oggi qui. E' tempo che tutti noi ci si metta in gioco. Abbiamo leggi e sensibilità per avviarci verso una personalizzazione delle cure. Ma non basta. Dobbiamo passare da un'assistenza generalista ad una assistenza personalizzata. Dove ciascuno viene assistito nel rispetto del proprio essere*".

Mangiacavalli (Fnopi) - In tele conferenza è intervenuta la Presidente Fnopi **Barbara Mangiacavalli** che ha sottolineato l'aspetto deontologico e multiprofessionale, ma prima puntualizza: "*Non medicina, ma salute di genere. La salute è uno stato di completo benessere fisico, mentale e sociale e non semplicemente l'assenza di malattia e di infermità" (OMS 1948), mentre la medicina è la scienza che studia le malattie, la loro cura e la loro prevenzione*.. Per la senatrice Paola Boldrini "*c'è molto da fare sul tema della medicina di genere che mette al centro l'individuo. Soprattutto sul piano formativo".*

Codice deontologico - **Aurelio Filippini**, presidente Opi Varese, cita gli aticoli cardine del Codice deontologico degli infermieri per osservare che: "*L'Infermiere cura e si prende cura della persona assistita, nel rispetto della dignità, della libertà, dell'eguaglianza, delle sue scelte di vita e concezione di salute e benessere, senza alcuna distinzione sociale, di genere, di orientamento della sessualità, etnica, religiosa e culturale. Si astiene da ogni forma di discriminazione e colpevolizzazione nei confronti di tutti coloro che incontra nel suo operare".* Se per la biologa Livia Galletti "bisogna praticare un ascolto attivo del paziente", **Alessandra Carè,** direttrice del Centro di medicina di genere dell'Iss, preferisce parlare di salute di genere sottolineando la funzione importante in questa direzione svolta dall'Osservatio sulla salute di genere in essere presso l'Istituto superiore della Sanità, puntando tutto sulla costruzione di una rete interprofessionale con l'obiettivo di una *"sanità più attenta alle differenze".*

Prevenzione – Secondo **Roberta Masella**, direttrice del dipartimento prevenzione dell'Iss, "*l'approccio di genere è un'azione necessaria se si vuole raggiungere un'efficace azione preventiva delle malattie perché molte patologie (alcuni tipi di tumore, malattie cardiovascolari) presentano differenze sostanziali tra uomini e donne. E anche le abitudini alimentari giocano un ruolo importante*". Di un tavolo interdisciplinare in Campania sulla medicina di genere ha parlato infine **Amelia Filippelli**, coordinatrice della struttura regionale.

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Il cambiamento nasce dalla base

Nel secondo tavolo del Laboratorio Sanità riservato agli infermieri sono stati Illustrati i primi risultati degli Stati Generali della professione infermieristica. Teresa Rea (Opi Napoli): la parola chiave del nostro campione è Università. Gli interventi del sottosegretario Andrea Costa e del Direttore Generale per la tutela della salute della Regione Campania Antonio Postiglione

di **Pino de Martino**

Ha avuto parole al miele per gli infermieri il sottosegretario di Stato al Ministero della Salute **Andrea Costa.** "*I cittadini hanno bisogno di unità politica e istituzionale. Anche per questo dobbiamo dire tutti: grazie infermieri. Grazie per quanto fatto in questi anni e per il vostro senso di responsabilità*". Dopo gli applausi Costa continua. "*Ma abbiamo ancora bisogno di voi per fare squadra. Grazie anche a voi abbiamo un sistema sanitario che dà risposte. Lascio le polemiche a chi le crea*". Quest'ultimo inciso è rivolto alle accuse lanciate il giorno prima dal presidente Vincenzo De Luca al ministero della Salute e al ministro Speranza in particolare, accusato di varie responsabilità. Un attacco dal quale lo stesso vicepresidente della Fnopi **Cosimo Cicia** si è pubblicamente dissociato definendo l'intervento maldestro e inopportuno. Pur senza entrare nel merito della querelle, l'avvocato **Antonio Postiglione**, Direttore Generale per la Tutela della salute Regione Campania, ha ricordato le poche risorse finanziarie a disposizione della Campania, anche per effetto di una iniqua redistribuzione del fondo sanitario nazionale che porta ogni anno più di duecento milioni di euro in meno nelle casse regionali. Poi sul Pnrr: *"E' un'occasione straordinaria per ripensare la sanità non solo in Campania, ma soprattutto. C'è bisogno di riforme coraggiose in tutto il comparto. E di maggiore attenzione verso le professioni sanitarie per farle diventare più attrattive sia nella carriera, sia sulla sicurezza".*

Nel merito del convegno e sul tema all'ordine del giorno si è entrati con l'intervento di **Teresa Rea** (Opi Napoli) che ha illustrato i dati della Campania sugli Stati Generali della professione. "*Con cinquantamila iscritti la Campiana può essere definito un campione maturo. Ci siamo interrogati su dove deve andare la professione infermieristica in futuro. E tra le parole chiave emerge forte Università. Quindi, seguendo le indicazioni dei nostri iscritti, bisogna ricominciare dalla formazione. Occorre rivedere e superare l'attuale modello formativo della laurea magistrale e del sistema dei master perché non sono più adeguati alle esigenze e alle domande di salute dei cittadini. Bisogna incrementare le aree di tirocinio clinico pensando anche alla qualità e non solo alla quantità di formazione. E anche alle nuove specifiche competenze: non ci sono solo gli ospedali, c'è anche il territorio*".

Ssn in crisi. La ricetta Mangiacavalli e il primato dell'equipe

La presidente Fnopi lancia il concetto di Comunità di pratica. Convergenze di vedute alla tavola rotonda interprofessionale sulla necessità di promuovere il lavoro di gruppo. Zuccarelli: preoccupati per Ssn

(pdm) A tracciare la rotta lungo la quale si è sviluppata la tavola rotonda che è seguita al convegno è stato l'intervento della Presidente Fnopi Barbara Mangiacavalli. La nuova strada indicata dagli infermieri si chiama Comunità di pratica. Seguendo le teorie del sociologo Mc Luhan che vedono nel lavoro di gruppo[5] l'essenza stessa della conoscenza, Mangiacavalli estende il concetto fino a esaltare il lavoro d'equipe in sanità ponendo il cittadino al centro del processo di cura e assistenza. "*Premesso chi in sanità gli esiti di cura non sono mai il risultato dell'attività di una sola professione, bisogna ragionare allora sugli esiti delle equipe, ponendo il bisogno del paziente come elemento guida dei processi di assistenza e cura. Tutti i professionisti della salute sono stati formati a lavorare in maniera individuale. Invece il contributo di ogni professione al processo di guarigione deve poter essere visibile e verificabile*". Prima l'analisi, poi le proposte, considerando anche lo stato di crisi che riguarda trasversalmente tutte le professioni impegnate nel sistema sanitario nazionale. Una crisi che riguarda l'aspetto economico, ma anche la dignità del lavoro pubblico e la valorizzazione dei professionisti. *"Proporremo a breve la costruzione con le altre professioni di tavoli permanenti per costruire insieme modelli di cura e assistenza innovativi sia per il territorio (salute di prossimità), sia per gli ospedali"*. Un concetto, quello di equipe condiviso da **Luigi Sparano** (Fimmgi Napoli) che punta il dito contro il modello solitario di assistenza vissuto fin qui dai medici di famiglia. "*Dobbiamo puntare con decisione su modelli di team, soprattutto sul territorio e nelle cure di prossimità. Modelli che siano orientati alla persona e alle cure di prossimità"*. Per **Bruno Zuccarelli**, (presidente Omceo Napoli) *"*la crisi del pubblico è anche più grave di quella fin qui percepita. Siamo ormai allo sgretolamento della medicina pubblica. E non nascondo la mia preoccupazione. C'è una disaffezione che interessa tutte le professioni sanitarie che deve preoccupare tutti. Potremo forse sperare di evitare il peggio se tutte le professioni coinvolte nella sanità imparassero a lavorare come una grande orchestra*"*. Altrimenti, neppure il Pnrr basterà a risolvere i problemi. "Non è solo un problema di poche risorse finanziare che noi a Napoli denunciamo da sempre. Stiamo attenti ai libri dei sogni*"*. **Antonio D'Avino,** (Presidente federazione medici pediatri) giudica di estremo interesse la costruzione di un progetto di rete professionale. "*Come regione Campania siamo stati all'avanguardia in progetti integrati con gli infermieri per sviluppare la pediatria di famiglia come sistema di cure primarie. Auspichiamo infatti una implementazione di tali giuste esperienze, anche in previsione della maggiore attenzione che si vorrà rivolgere al territorio. Nel frattempo dobbiamo rilanciare passando da una medicina d'attesa ad una di prevenzione rilanciando campagne di screening, educazione sanitaria e stili di vita*". **Luigi Sodano** (Sumai) a nome dei medici ambulatoriali concorda sulle potenzialità e sull'importanza delle equipe multiprofessionali come modelli assistenziali auspicabili per fare fronte ai nuovi e variegati bisogni dell'utenza e per promuovere la tutela della salute. Anche per **Silvia Vaccari** (Fnopo) la sanità va coniugata al plurale. Ma chiarisce subito eventuali concezioni ancillari di antica memoria: "*Ogni figura professionale fa il suo. Ma nessuono e collaboratore di altri. Abbiamo davanti un futuro importante, con un sistema salute che punti sulla qualità e sull'universalità, purché si scelga la strada insieme"*. **Franco Ascolese** (presidente TSRM PSTRP Napoli, Avellino, Benevento e Caserta) sottolinea il contributo dei Tecnici sanitari di radiologia medica, delle professioni sanitarie tecniche, della riabilitazione e della prevenzione.

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NAPOLI - CITTÀ DELLA SCIENZA

CASE DI COMUNI

De Luca: «*Non ci so per assumere per*

Dal palco del 'Laboratorio Sanita' 20/30' Il governatore della Campania ha lanciato l'all

dell'Economia ha detto chiaramente: le risorse non ci sono». Gli altri nodi: iniqua ripa

di **Pino de Martino**

L'edizione 2022 del Laboratorio Sanità sarà ricorderà a lungo. Nono solo per il fatto che gli infermieri vi hanno svolto un uolo da protagonisti, ma anche per le uscite diciamo cosi 'rumorose' del governatore L'importante vetrina che ha portato a Napoli i vertici della sanità nazionale pubblica e privata è diventato un palcoscenico ideale per il presidente della Regione Campania. Dal palco di Città della Scienza ha lanciato strali e bordate da novanta contro tutto e tutti. So

Soprattutto verso i palazzi romani. Un fiume in piena De Luca che ha approfittato della grande audience per snocciolare tutti i nodi, i mali, i ritardi irrisolti della sanità campana che, a suo dire, sono da attribuirsi alla politica della Capitale.

Case di Comunità – Tante le accuse. Dai 220 milioni di euro persi dalla Campania per l'iniquo riparto del fondo nazionale, ai ritardi sui trasferimenti per il covid, passando per il Pnrr e altro ancora. Ma dal palco del 'Laboratorio Sanita' 20/30' il governatore della Campania ha lanciato un nuovo preoccupante allarme. E ha svelato pubblicamente un retroscena. «*Abbiamo fatto una domanda precisa al ministero della Salute: dove sono le risorse per pagare il personale da inviare nelle case di comunità? Non c'è stata data alcuna risposta. Noi continuiamo a parlare del piano per le case di comunità, ma il Ministero dell'Economia in un incontro con le Regioni ci ha detto che non è in grado di garantire la copertura finanziaria per le case di comunità. Ma di cosa stiamo parlando? La medicina territoriale, ad oggi è una grande palla. In queste condizioni noi rischiamo di prendere in giro l'Italia quando parliamo di piani di medicina territoriale*». Eppure sul progetto territorio ci sono 380.478.430 di euro. Soldi che arrivano in parte dal Pnrr e in parte dal Pon (Programma operativo nazionale per l'equità nella salute). Cioè fondi europei. Lo stesso Governatore ad inizio d'anno assicurava: «*Saranno 100 gli immobili da ristrutturare e saranno realizzate 33 nuove costruzioni. In totale saranno 169 le Case di comunità (investimento di 249.721.198 euro) per l'assistenza primaria e specialistica con prestazioni anche socio-sanitarie; 45 gli Ospedali di comunità, dotati ciascuno di 20 posti letto (uno ogni 50-100 mila abitanti - 110.987.199 euro di investimento) e 58 Centrali Operative territoriali (COT - 19.770.033 euro di investimento), con il compito di fare da raccordo tra i vari soggetti coinvolti nel processo assistenziale e di gestire il servizio del 118, sul territorio regionale per ridurre gli accessi ai pronto soccorso*».

Riparto fondi – Il rosario di De Luca snocciola antichi nodi mai risolti. «*Il problema specifico della Campania, che continua ad essere derubata ogni anno di 220 milioni di euro, non è stato ancora risolto. Abbiamo posto il problema, che è molto semplice: la stessa dignità e le stesse risorse per ogni cittadino italiano, non mi pare una linea eversiva ma semplicemente corretta*». ''*Il Sud non è un pezzo di terra da cancellare ma è l'anima di questo Paese e merita rispetto. Sui criteri di riparto del fondo sanitario nazionale tutti hanno fatto finta di non vedere il problema, tutte le forze politiche: centro, destra e sinistra, affratellati nell'opportunismo. Noi abbiamo deciso di non tacere più e non faremo un passo indietro se non avremo lo stesso riparto del fondo sanitario per ogni citta-*

TÀ

ono risorse sonale»

arme. E ha svelato un retroscena. «*Il ministero* rtizione del fondo sanitario nazionale e Pnrr

dino italiano». De Luca ha sottolineato che *''nell'ultima proposta informale, il riparto per il 99 per cento ricalca la spesa storica e attribuisce uno 0,5 per cento per la deprivazione sociale e uno 0,5 per cento per l'aspettativa di vita. Per me* - ha affermato - questo è un atto di delinquenza politica che non accetteremo''.

Pnrr - «*Quando dicono che hanno destinato il 40 per cento al Mezzogiorno hanno fatto il minimo sindacale perché l'Italia ha avuto quei 209 miliardi non per motivi generali ma per recuperare il divario Nord-Sud. Avremmo dovuto destinare il 60 per cento, non il 40, per recuperare il divario territoriale».*

Laboratorio Sanità 20/30 Numeri da grande evento

Tremiladuecento partecipanti, oltre 500 relatori nei dibattiti e nei tavoli tematici che per due giorni hanno messo insieme i più importanti esponenti della sanità italiana. Si è chiuso con numeri da grande evento 'Laboratorio sanità 20/30', la due giorni di incontri a Napoli organizzata dalla Fondazione Gutenberg per l'innovazione e la sicurezza in sanità, in collaborazione con Agenas (Agenzia Nazionale per i Servizi Sanitari Regionali), e con il patrocinio dell'Istituto Superiore di Sanità, della Regione Campania, del Comune di Napoli e della Conferenza delle Regioni e Province autonome.

La presenza delle massime cariche istituzionali con il Presidente della Regione Campania, **Vincenzo De Luca**, il Sindaco di Napoli, **Gaetano Manfredi**, il Sottosegretario alla salute, **Andrea Costa**, il Presidente di Agenas, **Enrico Coscioni**, il saluto del Presidente dell'Istituto Superiore di Sanità, **Silvio Brusaferro**, collegato da Ginevra hanno creato ancora più attesa e attenzione. Senza contare l'importanza di avere tra i relatori i rappresentanti nazionali delle organizzazioni FNOPI, FIASO, CARD, FEDERSANITA' e i dibattiti su tematiche di grande rilievo come i programmi del PNRR, l'innovazione in sanità e le soluzioni tecnologiche, la transizione al digitale, i nuovi approcci di cura e prevenzione, la telemedicina, l'assistenza territoriale e il ruolo delle professioni mediche e infermieristica. E poi i vertici delle maggiori Aziende sanitarie Italiane e il Ministero della salute, "*Una grande occasione di confronto* – ha detto Enrico Coscioni**,** presidente Agenas e alla guida del Comitato scientifico e di coordinamento dell'iniziativa - *non a caso arrivata in questo periodo: il 30 giugno è scaduta la prima tappa programmatica del PNRR ed è stato utile che proprio in Campania venisse strutturato un nuovo modello di dialogo per costruire una comunità e soprattutto una rete che è elemento indispensabile di quella sanità digitale che ha nello scambio di dati, di informazioni e di buone pratiche, il perno dell'organizzazione del futuro*". "*Mi ritengo molto soddisfatto* – ha detto in chiusura d'evento **Vasco Giannotti**, Presidente del Forum Risk Management in Sanità, ideatore e organizzatore del Laboratorio Sanità 20/30 - *Abbiamo centrato la sfida di portare il Forum qui a Napoli, non solo per i numeri: 1690 partecipanti solo nella prima giornata, 1500 anche nella seconda sessione di lavori, 500 relatori accreditati che hanno rispettato le premesse e offerto contributi concreti e di alto livello alla discussione. Ringrazio la Regione Campania e l'Agenas per la grande disponibilità e ci accingiamo a portare avanti i lavori e i risultati del Forum di Napoli come in un unico filo conduttore nel percorso che ci condurrà all'appuntamento di Bari il prossimo mese di settembre e poi nel Forum nazionale di Arezzo dal 22 al 25 Novembre. L'insieme del lavoro svolto ci permetterà di produrre proposte concrete per la Conferenza delle regioni e poi per le Commissioni Parlamentari perché possano, nella prossima legislatura ormai alle porte, mettere mano concretamente ad una riforma seria che faccia della sanità pubblica in Italia una comunità unica, con pari risorse e pari diritti in tutte le regioni, e un unico punto di riferimento di cura e prevenzione per la salute di tutti i cittadini."* «*La vera sfida è una sanità territoriale che sia veramente efficiente e vicina ai bisogni dei cittadini perché questa è l'unica strada per poter intercettare quelli che sono i tanti bisogni di sanità inespressi, per poter integrare i servizi sanitari con i servizi sociali*», ha detto il sindaco di Napoli **Gaetano Manfredi**. «E' molto importante la stretta connessione tra il sistema sanitario regionale e gli enti locali, i comuni che gestiscono i servizi sociali – ha aggiunto - E poi - conclude - *questo rappresenta anche un filtro per evitare un'eccessiva pressione sugli ospedali che spesso diventano l'unico luogo dove i cittadini vanno per fare una richiesta di sanità che potrebbe essere risolta molto prima*».

Speciale elezioni

Sanità, ecco l'agenda poli

La Federazione nazionale degli Ordini professionali segnala alle forze politiche le priorità per a adeguate risposte ai mutati bisogni di assistenza e salute. Tre temi fondamentali: contratti e

di **Pino De**

Alla vigilia delle elezioni politiche che decideranno chi governerà e chi siederà il Parlamento, la Federazione nazionale degli ordini degli infermieri ha preso carta e penna per segnalare alle forze politiche e ai singoli candidati le priorità per assicurare la sostenibilità del sistema sanitario e la possibilità di garantire a pazienti e cittadini adeguate risposte ai mutati bisogni di assistenza e salute. Una sorta di agenda della salute scritta dagli infermieri. Quella professione sanitaria che più di ogni altra ha il polso dei bisogni provenienti dal basso, perché in assoluto la più vicina per caratteristiche professionali all'utenza e agli ammalati. **Tre priorità** - "*Gli infermieri - ricorda la Fnopi - sono pochi rispetto al fabbisogno e la professione è sempre meno attrattiva*". Da qui le tre priorità inderogabili individuate e inviate alle forze in corsa per le elezioni**:** A) incremento della base contrattuale e riconoscimento economico dell'esclusività delle professioni infermieristiche; B) riconoscimento delle competenze specialistiche; C) evoluzione del percorso formativo universitario. I posti messi a bando negli Atenei, sottolinea la FNOPI, spesso non sono saturati. Il numero di infermieri richiesti sul territorio non risponde ai numeri di cui l'Italia dispone anche rispetto ai rapporti previsti dalle

VINCOLO DI ESCLUSIVITÀ

Casellati: "Senza, infermieristica più attrattiva"

Infermieri incassano un endorsement di tutto rispetto e di grande prestigio. Nel corso dell'incontro al Senato tra la presidente Maria Elisabetta Alberti Casellati, e Barbara Mangiacavalli, presidente Fnopi, la seconda carica dello Stato ha elogiato gli infermieri italiani: "*La vostra presenza è molto importante per le persone, per i pazienti e per chi soffre*" ha detto, ribadendo il ruolo primario della professione e sottolineando che la carenza di infermieri, ormai dichiarata da anni, non aiuta davvero l'assistenza.

La FNOPI ringrazia - La numero uno della FNOPI, Barbara Mangiacavalli ha ringraziato lei e tutto il Senato della Repubblica per l'attività svolta nella legislatura e le ha ricordato come la carenza di infermieri sia dovuta a diversi fattori: la mancanza di un riconoscimento di competenze specialistiche, la necessità di un percorso formativo universitario che necessita di un ampliamento della laurea magistrale e delle scuole di specializzazione, l'incremento base contrattuale e il riconoscimento economico dell'esclusività delle professioni infermieristiche.

Esclusività – Da parte sua**,** la Casellati si è soffermata sul vincolo di esclusività che incatena la categoria, provando a ragionare su come cancellarlo: "*Questo permetterebbe alla professione di essere maggiormente attrattiva nei confronti soprattutto dei giovani che tornerebbero a vedere la carriera infermieristica come un ambizioso percorso professionale. Al contempo, la possibilità di non avere vincoli di esclusività colmerebbe una prima parte di domanda di infermieri da parte degli assistiti che è sempre più crescente nel nostro Paese*". Certo, anche il vincolo di esclusività è un grosso problema e su questo noi infermieri siamo tutti (o quasi) d'accordo. Ma che una professione, con uno stipendio ridicolo, diventi come

d'incanto 'attrattiva' perché si concede ai professionisti di ammazzarsi di lavoro (per chissà quante ore a settimana) col fine di ottenere un salario degno a fine mese… Beh, ci sembra molto improbabile.

Doni e promesse - Alla fine dell'incontro, la presidente FNOPI ha donato alla Casellati una copia del volume edito dalla Federazione in occasione del bicentenario della nascita di Florence Nightingale e del francobollo commemorativo dell'evento emesso da Poste Italiane. La Casellati, dal canto suo, ha affermato che farà ciò che rientra nelle sue funzioni per tutelare la professione.

tica secondo gli infermieri

assicurare la sostenibilità del sistema sanitario e la possibilità di garantire a pazienti e cittadini
incremento indennità di specificità infermieristica; competenze specialistiche e formazione

E MARTINO

analisi internazionali (Oms, Ocse ecc.). E di questa situazione, le cause sono da ricercare anche nel mancato riconoscimento valoriale ed economico della professione e nell'assenza di prospettive di carriera.

Contratti - Il primo punto riguarda la valorizzazione della voce contrattuale definita come indennità di specificità infermieristica da incrementare di almeno il 30%: oggi gli infermieri italiani sono al 25° posto come media annuale tra i paesi Ocse. Essenziale è anche il riconoscimento economico dell'esclusività per gli infermieri che lavorano in ambito clinico e con ruolo di dirigenza manageriale nei servizi organizzativi nelle strutture pubbliche e private convenzionate, superando i vincoli dell'attuale legge sul Pubblico impiego, che risale ormai a 21 anni fa, o, in alternativa, consentendo l'esercizio della libera professione extramoenia, in deroga a quanto previsto dalle norme attuali.

Competenze - Al secondo punto ci sono le competenze specialistiche. Secondo la Fnopi bisogna prevedere l'inserimento all'interno dei Lea (livelli essenziali di assistenza) della branca specialistica assistenziale, per dare uniformità di prestazioni a livello regionale e nazionale, con l'istituzione delle competenze specialistiche che già oggi esistono di fatto, ma che non sono ufficialmente riconosciute agli infermieri. È anche opportuno autorizzare la possibilità di prescrivere alcune categorie di farmaci e ausili/presidi, come strumento per applicare le competenze specialistiche, che rientrano nella sfera di competenza infermieristica come già accade in diversi Paesi Ue. E per le competenze specialistiche, è urgente il riconoscimento formativo, organizzativo, contrattuale e di carriera della figura dell'infermiere di famiglia e di comunità, professionista responsabile dei processi infermieristici in ambito familiare e comunitario.

Formazione - Al terzo punto c'è tutta la materia che riguarda la formazione. Ovvero, la valorizzazione della formazione infermieristica negli Atenei, con l'istituzione di lauree magistrali a indirizzo clinico e scuole di specializzazione**.** Gli infermieri chiedono cioè di collegare i posti del corso di laurea e delle lauree specialistiche al fabbisogno del sistema salute. Per fare questo, è necessario prevedere il finanziamento della docenza universitaria e aumentare il numero dei professori-infermieri (il rapporto docente/studenti è 1:1.350 per gli infermieri, contro altre facoltà sanitarie dove è 1:6). "La politica – sottolinea la Fnopi – deve porsi obiettivi precisi: senza infermieri non c'è salute, l'Italia deve dimostrare di essere una nazione che investe sull'infermieristica, i cittadini non possono più aspettare**".**

Il Governo Draghi va a casa Tante le opere ferme al palo

Con la fine del Governo Draghi si segna l'epilogo della XVIII legislatura. Ma segna anche uno stop, si spera solo temporaneo, di tanti provvedimenti in agenda che riguardano la sanità. Tante le questioni impellenti. La riforma dei medici di famiglia, per esempio. Rischia di sparire dai radar anche il Decreto Tariffe. Il provvedimento è atteso da oltre 5 anni quando fu emanato il Dpcm di aggiornamento dei Lea. Si fermerà di nuovo anche la questione legata ai nuovi criteri per il riparto del Fondo sanitario. Al palo resterà anche l'aggiornamento del Dm 70 sugli standard ospedalieri. Probabilmente sarà accantonata anche l'idea di rivedere il tetto di spesa per il personale che nonostante le piccole modifiche degli ultimi anni rappresenta un ostacolo per superare la carenza ormai cronica di operatori sanitari. E sempre sul personale è molto probabile che la fine del Governo comporterà un ritardo sul rinnovo del contratto della dirigenza medica e sanitaria. Quanto al Parlamento, c'è da vedere che fine farà l'iter di conversione in legge del Ddl concorrenza. Ricordiamo che l'approvazione di questo provvedimento può infatti considerarsi in un certo senso propedeutica per l'accesso ai fondi del Pnrr. Sul binario morto rischia anche di restare il riordino degli Irccs già approvato in prima lettura dalla Camera. Dubbi che possa vedere la luce anche il provvedimento sul fine vita.

Lo stop al Governo rischia poi di posticipare l'emanazione anche di molti decreti attuativi come quello per i ristori per i familiari del personale sanitario deceduto a causa del Covid o quello in stand by anche il Sunshine Act per cui mancano i decreti attuativi per la creazione del registro telematico dove raccogliere le erogazioni in beni o denaro da parte delle imprese nei confronti del personale della sanità. Dubbi anche sulla riforma di Aifa dato che il 15 ottobre scade la proroga di Cts e Cpr, organi senza i quali di fatto l'Agenzia del farmaco si blocca. E ancora: potrebbe saltare poi anche la nuova riorganizzazione del Ministero della Salute.

Politica sanitaria

INFERMIERISTICA

Calano gli iscritti, la presidente Rea: *"Mancate risposte ai nostri appelli"*

La Mangiacavalli: *"Senza infermieri non c'è salute"*. Teresa Rea: *"La colpa è da ricercarsi nel silenzio delle istituzioni politiche e sanitarie alle nostre richieste. Servono stipendi adeguati all'Europa, tutela fisica contro le aggressioni e le violenze sui posti di lavoro, riconoscimento e valorizzazione professionale"*

di **Pino de Martino**

La professione d'infermiere perde il suo appeal. Infermiere è bello, si diceva, soprattutto al sud, dove la mancanza di lavoro in altri settori produttivi rendeva ancora più attraente una professione che in poco tempo, fino ad una decina d'anni fa, immetteva i giovani ben presto nel mondo del lavoro. Da tempo non è più cosi. Il blocco delle assunzioni, gli stipendi medi tra i più bassi d'Europa, le continue aggressioni e violenze in corsia, la pandemia che faceva e fa paura, le poche opportunità di carriera hanno finito per rendere sempre meno attrattiva la professione. Succede cosi che, attraverso i dati diffusi dall'Università Federico ll di Napoli, si scopre che c'è un preoccupante calo d'iscritti ai test d'ingresso per le Professioni Sanitarie. Sono solo 2.440 le domande pervenute entro la scadenza fissata. Cioé 500 domande in meno rispetto allo scorso anno (-18%) quando a iscriversi furono in 2.940. Un dato quello del 2021 che già registrò una lieve flessione (-3%) rispetto ai 3.025 del 2020. Gli anni del covid, guarda caso. Poi si può pensare che tra i motivi del disinteresse per la professione c'è forse il numero invariato di posti a disposizione (895) tra cui solo 420 per Infermieristica, 40 per Infermieristica pediatrica, 60 per Ostetricia, 70 per Fisioterapia, 32 per Logopedia, 25 per Dietistica, 55 per Tecniche di laboratorio biomedico, 12 per Tecniche di neurofisiopatologia, 40 per Tecnici di Radiologia, 35 per Tecniche della prevenzione nell'ambiente e nei luoghi di lavoro. Ma i vertici della Federazione nazionale degli ordini delle professioni infermieristiche e gli stessi ordini provinciali pensano ad altre cause. La FNOPI ha identificato tre priorità inderogabili per porre un argine al calo d'appeal di infermieristica, immaginandole direttamente collegabili con il calo d'iscritti ai test d'ingresso: incremento della base contrattuale e riconoscimento economico dell'esclusività delle professioni infermieristiche; riconoscimento delle competenze specialistiche; evoluzione del percorso formativo universitario. *"La politica* – ha detto Barbara Mangiacavalli, presidente Fnopi – *deve porsi obiettivi precisi: senza infermieri non c'è salute, l'Italia deve dimostrare di essere una nazione che investe sull'infermieristica, i cittadini non possono più aspettare*".

Secondo Teresa Rea, presidente dell'Ordine di Napoli ci sono precise responsabilità istituzionali alla base del disamore da parte dei giovani verso questa professione: "*Sia sotto il profilo strettamente professionale, sia sotto il profilo economico, la professione d'infermiere, soprattutto in questi ultimi anni, è stata bistrattata e abbandonata a se stessa*". "*Altro che angeli ed eroi. Le chiacchiere e le pacche sulle spalle non servono. Alla scarsa valorizzazione professionale e a stipendi tra i più bassi d'Europa* - continua la Rea - *si sono aggiunti turni massacranti dovuti ad una carenza di organici ormai endemica, e poi la pandemia, crescenti rischi d'aggressioni e di violenza contro i quali nessun provvedimento è stato preso. Senza contare un regime di precarietà e di incertezza occupazionale che rende la professione sempre meno appetibile. Pochi infermieri significa mancata e cattiva assistenza ai cittadini*", ha detto infine la Rea. "*A preoccuparsi dovrebbe essere quindi soprattutto la politica alla quale chiediamo impegni precisi sulle assunzioni. Alle Università sottolineiamo la necessità di revisione dei modelli formativi e alle istituzioni sanitarie una seria riflessione sui modelli di organizzazione dei servizi*".

FORMAZIONE ECM

Opi Napoli e Caserta: "Più ore nei contratti"

Prima di tutto un'opera di sensibilizzazione verso tutti gli iscritti. Poi bisogna mettere tutti nelle condizioni di potersi aggiornare, perciò c'è bisogno di più ore di studio nei contratti di lavoro.

"La formazione è alla base della professione. Un infermiere esperto deve essere formato, anche perché noi facciamo salute". Questo il messaggio trasmesso da **Teresa Rea**, presidente OPI Napoli, e da **Gennaro Mona**, presidente OPI Caserta e presidente del coordinamento Campania-Basilicata-Molise. "*Le professioni sanitarie devono aggiornarsi lungo tutto l'arco della loro vita professionale* – spiega Rea –, *facciamo un forte investimento sulla formazione. Necessariamente al termine di questo triennio per chi non riesce o non vuole aggiornarsi in qualche modo deve scattare una forma di sanzionamento, o quantomeno deve scattare una qualche forma di premialità per chi risponde all'obbligo formativo. Deve esserci una differenziazione non si può a questo punto essere tutti uguali*". Da COGEAPS arriveranno a breve le comunicazioni sui crediti accumulati e agli ordini andranno prima gli avvertimenti e poi i provvedimenti per chi non vorrà approfittare dell'ultimo avviso per mettersi in pari. "**Noi metteremo in essere dei piani che daranno la possibilità a chi non si è formato di farlo e di raggiungere i crediti del triennio** – spiega Mona –. *Anche perché la formazione è fondamentale anche sull'aspetto delle assicurazioni*". Il presidente OPI Caserta si riferisce alla Legge Gelli-Bianco, che prevede la perdita della copertura assicurativa nelle cause se non si è adempiuto almeno al 70% dei crediti formativi richiesti. "*Le assicurazioni* – continua Mona – *cercano di trovare il cavillo per non coprire, e quindi se non si è adempiuto all'obbligo formativo ci si ritrova in una situazione in cui si rischia di non essere coperti dall'assicurazione. Io parto dal presupposto che la formazione è un obbligo morale per il professionista, altrimenti non garantiremo mai il sistema salute*". Oltre alle sanzioni si potrebbe arrivare anche alla sospensione, come previsto dagli ordini. Il presidente OPI Caserta ricorda però che alcuni potrebbero non aver avuto modo di formarsi anche per mancanza di tempo dedicato, e garantito, dal proprio lavoro. "*Il posto di lavoro è sacrosanto: noi dobbiamo mettere in condizione il professionista di formarsi* – risponde Mona –. *Ci tengo a ribadire che nella sanità pubblica si ha diritto a 8 giorni di formazione, mentre nel privato non sono previsti. Le FAD vanno bene e possono dare la possibilità di raggiungere i crediti, ma a volte servono corsi da fare in presenza*".

Politica sanitaria

EFFETTO COVID E A

In Campania si è p

E' quanto emerge dal XIX Rapporto Osservasalute 2021, curato dall'Osservatorio Nazionale abitudini adottate durante l'emergenza Covid, ma soprattutto la crisi dell'assistenza sanitaria gli interventi programmati e si è interrotta la continuità terapeutica per i pazienti cronici.

di **Pepp**

La Campania che viene fuori dalla pandemia Covid, benché sia la regione che in rapporto alla popolazione abbia registrato meno decessi, non presenta uno stato di salute incoraggiante. Tutt'altro. Le aspettative di vita si sono ridotte. Tra le regioni italiane, la Campania è la più colpita, perdendo 1,2 anni, anche a causa delle mancate cure. Maglia nera anche per obesità e sedentarietà. In Campania la popolazione obesa è aumentata e i residenti detengono il record negativo del sovrappeso. Inoltre, più della metà (55,5%) dichiara di non svolgere attività fisica ed è aumentato il consumo di alcol.

Mortalità - In Campania, la speranza di vita stimata alla nascita, nel 2021, è stata pari a 78,3 anni per gli uomini ed a 82,9 anni per le donne (valore nazionale: uomini 80,1 anni e donne 84,7 anni). «*Risulta evidente* - spiega lo studio - *l'impatto della pandemia Covid-19 che nel 2020 ha determinato un decremento della speranza di vita in tutte le regioni rispetto al 2019, con un lieve recupero a livello nazionale nel 2021. In particolare, in Campania si registra, nel 2021, una diminuzione di 0,2 anni per gli uomini e di 0,5 anni per le donne rispetto al 2020».* Ma, come accennato, anche i dati sulla mortalità non rincuorano: nel 2019 risultano pari a 116,8 per 10.000 per gli uomini ed a 80,8 per 10.000 per le donne (valore nazionale: uomini 102,5 per 10.000 e donne 68,2 per 10.000) e *«sono i più elevati tra tutte le regioni»*.

Spesa sanitaria - La spesa sanitaria pubblica pro capite in Campania nel 2020 è stata pari a 1.921 euro (nazionale 2.065 euro): la quota più bassa tra tutte le regioni.

Obesi maglia nera - Cala per fortuna il numero dei fumatori: nel 2020, la quota di fumatori nella popolazione dai 14 anni di età in su è stata di 18,9% (valore nazionale 18,6%). Considerando il periodo 2007-2020, si registra una diminuzione (-27,9% vs valore nazionale -15,8%). Mentre allarma la prevalenza di persone adulte in condizione di sovrappeso: nel 2020 erano il 42% (valore nazionale 36,1%)in aumento rispetto all'anno precedente (+6,3%).Anche qui il valore più alto in Italia. Così per la popolazione obesa che nel 2020 è stata pari al 14,3%, (valore nazionale, 11,5%). Considerando l'intero periodo indagato (2007/2020) in Campania si è registrato un aumento pari a +27,7% (Italia +16,2%) e nell'ultimo anno è stato molto marcato (+22,2%). Tutto questo si associa ad un altro grave indicatore, quello della sedentarietà: nel 2020, la prevalenza di coloro che hanno dichiarato di non praticare sport è stata pari al 55,5% (valore nazionale 35,2%). E lascia perplessi che nell'arco di tempo studiato, in Campania si sia registrato un aumento pari a +6,7% in controtendenza con il -10,9% nazionale. «*La Campania, dopo la Sicilia, è la regione che presenta la prevalenza maggiore di persone di età dai 3 anni ed oltre che non praticano sport*».

Fecondità in crisi - L'altro aspetto indagato è il tasso di fecondità totale che, nel 2020, è stato pari a 1,30 figli per donna (valore nazionale di 1,24 figli per donna) risultando inferiore al livello di sostituzione (circa 2,1 figli per donna) che garantirebbe il ricambio generazionale. Insomma, neanche la clausura imposta ha dato una spinta alla procreazione: in Campania il tasso di fecondità è diminuito del 12,2%, mentre a livello nazionale dell'11,4%. E rimanendo

SPETTATIVA DI VITA

erso più di un anno

le dell'Università Cattolica. Campania regione con più obesi e sedentari. Pesano le nuove . Aumenta infatti il sovrappeso e il consumo di alcolici e si sono ridotte le visite specialistiche, E nonostante le risorse del Pnrr e gli aumenti del Fondo sanitario i fondi sono insufficienti

PE PAPA

in tema, i parti cesarei — che per anni hanno condannato la sanità regionale nella valutazione dei Lea — restano comunque ancora numerosi, sebbene in diminuzione: «La proporzione di parti con taglio cesareo, nel 2020, è stata pari al 49,4% (valore nazionale 32,6%): il più elevato tra tutte le regioni». Ma considerando l'intero periodo temporale si è registrata una diminuzione pari a -20,2%, in accordo con il valore nazionale (-16,9%). La Campania si distingue in positivo soltanto per il consumo di farmaci antidepressivi, benché nel periodo 2007-2020 si osservi una tendenza in aumento (+37,5%). Ma negli ultimi anni i dati regionali risultano sempre inferiori a quelli nazionali.

Walter Ricciardi, napoletano e docente alla Cattolica

Ricciardi: Temo ottobre - «Al di là della stanchezza e della riluttanza di molti di noi a capire che la pandemia non è finita, dobbiamo essere razionali e preparati. Il virus che oggi non è più buono ed è più contagioso, ha caratteristiche diverse ma continua a colpire pesantemente soprattutto i non vaccinati. Mi auguro quindi che le misure che sta discutendo il Consiglio dei Ministri siano finalizzate a guardare l'evidenza e non l'accondiscendenza, che in medicina è terribile, perché i desideri del paziente non sempre sono nel suo interesse». Lo ha detto Walter Ricciardi, direttore di Osservasalute e ordinario di Igiene generale e applicata alla Facoltà di Medicina e chirurgia dell'Università Cattolica, nonché consigliere del ministro della Salute per l'emergenza da coronavirus, commentando i dati del nuovo rapporto Osservasalute. «In questo momento - ha spiegato Ricciardi - c'è una diffusione fortissima di varianti Omicron B.4 e B.5, ma quello che stiamo registrando è che si tratta dei ceppi di virus ancora più contagiosi. Probabilmente in questo momento i ceppi più circolanti di Omicron sono i microorganismi più contagiosi che esistono sulla faccia del pianeta. C'è una preoccupazione molto forte per ottobre - ha concluso Ricciardi -, perché quanto descritto si rappresenterà nella sua forza ed evidenza soprattutto in ottobre, con la stagione influenzale. Dunque niente di irreparabile, niente di tragico, purché preparati».

COVID, IL PIANO D'AUTUNNO

Ecco i fondi per le Regioni

Mef e ministero della Salute pronti a un decreto: 902 milioni per la prima fase. Ma la Conferenza dei governatori avverte: «Costi aumentati, vanno rivisti tutti i budget». Alla Lombardia 232,9 milioni; alla Campania 99,1

Con l'arrivo dell'autunno ritorna la paura del Covid.19. Per non trovarci impreparati, ancora una volta e per evitare che l'intero sistema salute possa andare di nuovo il Governo ha varato un piano e sul tavolo ha messo anche i soldi. La cifra non è da capogiro. E le Regioni hanno già fatto sapere che i fondi sono insufficienti. In effetti i 902 milioni di euro stanziati dal Governo non sono molti, considerando, evidenziano le Regioni, gli aumenti dei prezzi dovuto al caro energia. La distribuzione delle risorse avverrà sotto forma di un decreto che assegna fondi per consentire ai sistemi regionali di sostenere le spese per la diagnostica e la protezione dei cittadini. Serviranno, cioè per una quota pari a 860 milioni, a rafforzare le scorte nazionali di Dpi, mascherine chirurgiche, reagenti e kit di genotipizzazione, mentre 42 milioni serviranno a potenziare i sistemi informativi di sorveglianza, le piattaforme informatiche e per sostenere

l'attività di ricerca. E questa volta la Campania viene premiata con una dotazione consistente. . Il riparto premia Lombardia e Campania: alla prima andranno 232,9 milioni; alla seconda 99,1. Tra le altre Regioni, stabilita l'assegnazione di 90,7 milioni al Lazio, 74,8 milioni al Veneto, 76,4 alla Sicilia, 63,4 all'Emilia Romagna.

Ospedali & territorio

Nomine, cambio ai vertici

Per i direttori generali di Asl, Aziende e Policlinici nominati dalla Re in molti casi, di cambi di azienda: "Un impegno a valorizzare e a non hanno poi, a loro volta, completato il valzer delle nomine per i

di **Pino De**

Tutti le aspettavano per agosto. Invece il Presidente De Luca ha anticipato tutto e sul finire di giugno ha comunicato le nomine dei 13 Direttori generali di Asl, Aziende Ospedaliere e Policlinici della Campania, in carica già dall'otto agosto scorso, come da scadenza prevista dai contratti.

I manager - Più che di nuove nomine si tratta, in molti casi, di cambi di azienda. "E' un impegno a valorizzare e a non disperdere tutte le esperienze amministrative che si sono sviluppate in questi anni difficili", ha sottolineato la Regione in una nota che accompagna le nomine. Questi gli incarichi: Azienda Cardarelli: **Antonio D'Amore;** Azienda dei Colli: **Anna Iervolino;** Policlinico Federico II: **Giuseppe Longo,** d'intesa con il Rettore Matteo Lorito; Policlinico Vanvitelli: **Ferdinando Russo,** d'intesa con il Rettore Gianfranco Nicoletti; Asl Napoli 1: **Ciro Verdoliva;** Asl Napoli 2: **Mario Iervolino;** Asl Napoli 3: **Giuseppe Russo;** Azienda Moscati Avellino: **Renato Pizzuti;** Asl Avellino: **Mario Ferrante;** Azienda San Pio Benevento: **Maria Morgante;** Asl Benevento: **Gennaro Volpe;** Asl Caserta: **Amedeo Blasotti;**

Asl Salerno: **Gennaro Sosto.** Inoltre, Gennaro Sosto rimarrà responsabile del procedimento per la realizzazione del nuovo ospedale unico della Costiera Sorrentina. **Maurizio Di Mauro** sarà impegnato nella struttura centrale dell'Assessorato alla Salute. **Antonio Giordano**, che va in quiescenza, mantiene l'attuale incarico commissariale. E proprio l'otto agosto scorso, i 13 manager sono stati convocati a palazzo Santa Lucia. Nel formulare l'augurio di buon lavoro, sono stati ribaditi gli obiettivi ai quali dovranno essere adeguate le attività delle aziende, tenendo conto del periodo feriale e quindi anche della riduzione del personale. Occorre garantire - spiega una nota della Regione - le prestazioni di emergenza, preparare un programma per la riduzione delle liste d'attesa, ed essere pronti in vista dell'apertura del nuovo anno scolastico anche in caso di nuovi focolai Covid. Occorre garantire prestazioni di laboratorio e di diagnostica incrementando l'offerta delle strutture pubbliche, dando atto che la stragrande maggioranza dei laboratori privati convenzionati sta garantendo prestazioni adeguate e di assoluta correttezza. Rimane come obbligo generale quello dell'assoluta trasparenza e correttezza amministrativa. Tutti i direttori generali saranno valutati sulla base dei risultati prodotti al servizio dei cittadini della Campania.

Asl e ospedali - Fatti i direttori generali insediati ufficialmente l'8 agosto, sono arrivate a stretto giro (non più di 24 ore dopo) i nuovi vertici sanitari e amministrativi. Alla Napoli 1 il direttore Ciro Verdoliva conferma **Maria Corvino** e **Michele Ciarfera**. Un team che in assetto immutato si accinge a governare il territorio della città per un secondo mandato. I primi nodi da sciogliere riguarderanno il reperimento del personale che manca nei principali presidi ospedalieri, il riassetto e ripopolamento della rete dell'emergenza e del 118 e il conferimento degli incarichi dirigenziali con decine e decine di posizioni e caselle da assegnare in scia a quanto nei giorni scorsi è stato fatto dal management uscente al Cardarelli. Sullo sfondo la costruzione, nell'arco dei prossimi tre anni, della rete territoriale

della sanità in Campania

gione e già a lavoro dall'8 agosto, più che di nuove nomine si tratta, disperdere le esperienze sviluppate in questi anni". I nuovi manager nuovi vertici sanitari e amministrativi, tra conferme e new entry

E MARTINO

delle case e ospedali di Comunità. Le novità arrivano invece dal Cardarelli e dall'Azienda dei colli. Nel più grande pronto soccorso della Campania il nuovo manager **Antonio D'Amore** (a sua volta proveniente dal vertice della Asl Napoli 2 Nord) chiama al suo fianco **Gaetano D'Onofrio**. Uno storico "cardarelliano" da anni prestato, nello stesso ruolo, prima ai Colli, poi alla Asl Napoli 3 Sud. Un direttore sanitario di provata esperienza che dovrà districarsi tra carenze di personale, afflussi record e fuga di camici bianchi. L'altra novità arriva dal Monaldi-Cotugno-Cto. Qui la direttrice generale Anna Iervolino, proveniente dal vicino policlinico collinare, ha indicato al vertice sanitario **Giuseppe Fiorentino**, pneumologo, da due anni e mezzo in prima linea al Cotugno dove è stato protagonista, durante tutta la pandemia, per aver realizzato e guidato l'unità di terapia sub intensiva. Le direzioni amministrative delle due aziende saranno invece dirette al Cardarelli da **Marcella Abbate** richiamata dall'ufficio provveditorato della Asl di Pozzuoli. Ai Colli, invece, nello stesso ruolo c'è **Alberto Pagliafora.** Già nei ruoli amministrativi del Cardarelli, ha ricoperto incarichi di vertice in seno alla Asl di Foggia e al San Pio di Benevento.

Policlinici – Anche il riassetto dei due policlinici procede tra novità e conferme. In quello collinare della Federico II, il nuovo manager Giuseppe Longo (proveniente dal timone del Cardarelli) completa la sua squadra con le nomine di **Anna Borrelli** alla direzione sanitaria (proveniente dal Ruggi di Salerno) mentre conferma **Stefano Visani** alla guida amministrativa. Nella struttura universitaria del centro storico il neo insediato manager Ferdinando Russo sceglie invece, nei due ruoli chiave, **Pasquale Di Girolamo Faraone** (ex Napoli 1, proveniente dai Colli) e conferma **Antonella Tropiano**, direttore amministrativo che ha sempre affiancato l'uscente Antonio Giordano. In provincia, a Napoli 3 Sud, si è insediato Giuseppe Russo (giunto dalla direzione sanitaria del Cardarelli) che indica **Elvira Bianco** come direttrice sanitaria e **Michelangelo Chiacchio** al vertice amministrativo. **Monica Vanni e Carmela Cardella** nello stesso ruolo a Napoli 2 Nord, su nomina del neo manager Mario Iervolino (ex Asl di Salerno).

AZIENDE SANITARIE E OSPEDALIERE, I NUOVI MANAGER

Azienda Cardarelli	Antonio D'Amore
Azienda dei Colli	Anna Iervolino
Policlinico Federico II	Giuseppe Longo (d'intesa con il rettore Matteo Lorito)
Policlinico Vanvitelli	Ferdinando Russo (d'intesa con il rettore Gianfranco Nicoletti)
Asl Napoli 1	Ciro Verdoliva
Asl Napoli 2	Mario Iervolino
Asl Napoli 3	Giuseppe Russo
Azienda Moscati Avellino	Renato Pizzuti
Asl Avellino	Mario Ferrante
Azienda San Pio Benevento	Maria Morgante
Asl Benevento	Gennaro Volpe
Asl Caserta	Amedeo Blasotti
Asl Salerno	Gennaro Sosto

Gennaro Sosto rimarrà responsabile del procedimento per la realizzazione del nuovo ospedale unico della Costiera Sorrentina

Maurizio Di Mauro sarà impegnato nella struttura centrale dell'Assessorato alla Salute

Antonio Giordano, che va in quiescenza, mantiene l'attuale incarico commissariale

Ospedali & territorio

Ospedali Centro per il nuovo pia

Pronti i progetti attuativi per la riqualificazion nunziata. Saranno realizzati Case e Ospedali di un investimento di 160 milioni di euro

di **Dario D**

È pronto ormai ed è stato anche illustrato alla stampa il piano di recupero e rifunzionalizzazione dei **tre ospedali del Centro Storico di Napoli**. Un progetto ambizioso e articolato che prevede, tra l'altro, la realizzazione di Case e Ospedali di Comunità destinati all'assistenza sociosanitaria di prossimità. Un investimento totale di quasi **160 milioni di euro** finanziato grazie a fondi Por Fesr, Pnrr, regionali e nazionali.

A beneficiare degli interventi i tre ospedali storici di Napoli centro: il Complesso Santa Maria del Popolo degli Incurabili nel quartiere San Lorenzo, comunemente chiamato Incurabili; l'ospedale San Gennaro dei Poveri, nel popolare Rione Sanità, e l'ospedale Infantile Santissima Annunziata a Forcella. Soddisfatto il governatore della Campania De Luca: «*Si tratta d'interventi importanti dal punto di vista sanitario* – ha detto nel corso della presentazione alla stampa del progetto - *perché realizziamo Case di Comunità e Ospedali di Comunità nel cuore del centro storico. In particolare, all'Annunziata valorizziamo la vocazione storica del nosocomio, realizzando un ospedale materno infantile.Agli Incurabili recuperiamo la Farmacia Storica, quindi si tratta anche di un recupero storico-culturale di un edificio importante. Al San Gennaro avremo molte attività di riabilitazione, oltre che una Casa di Comunità, poliambulatori, centri prelievi e così via*». «*Si tratta di un impegno importante* – ha aggiunto – *che avrà una ricaduta da un punto di vista sanitario, culturale e della riqualificazione urbanistica di parti decisive del Centro Storico di Napoli. A ciò si aggiungerà il progetto in corso, e in fase di realizzazione, del* ***nuovo ospedale Santobono*** *a ridosso dell'ospedale del Mare. Complessivamente investiamo nella città di Napoli* ***1 miliardo di euro*** *in strutture ospedaliere-sanitarie.*

Uno sforzo importante che merita un apprezzamento». Ma andiamo con ordine e vediamo uno per uno gli interventi da realizzare.

Incurabili - L'intervento per l'ospedale degli Incurabili, a mezzo servizio dal marzo del 2019, dopo il cedimento di una chiesa del Complesso, ammonta a 106,8 milioni di euro. Le destinazioni funzionali sanitarie previste sono quelle di Casa della Comunità (con servizi diagnostici e ambulatoriali), lungodegenza (20 posti letto), recupero e riabilitazione funzionale (36 posti letto), Ospedale di Comunità (15 posti letto), centro diurno demenze (16 posti letto). L'Ospedale, nato nel 1521 per volontà della beata Maria Lorenza Longo, si trova all'interno di un complesso monumentale dal grande pregio storico, per cui saranno valorizzati anche gli spazi con funzioni non sanitarie come il Museo delle Arti Sanitarie, la Farmacia Settecentesca, la biblioteca, il Digital Innovation Hub, un centro convegni e concerti e, ovviamente, gli alloggi residenziali presenti. Questione spinosa quest'ultima, in quanto 21 nuclei familiari furono sgomberati, per motivi di sicurezza, dalle abitazioni di via della Consolazione - inglobate nel complesso monumentale - a seguito del crollo nella primavera del 2019. Sul punto il direttore Verdoliva è stato molto chiaro: «Le unità abitative entrano a pieno titolo nei lavori. Chi conserverà ancora il titolo a rientrare negli alloggi, rientrerà contrattualizzando nuovi accordi. E soprattutto sanando le situazioni precedenti con l'Asl, considerando che c'erano occupanti addirittura sine titulo. Qualora i lavori dovessero essere realizzati per lotti – rassicura il manager – gli alloggi rientreranno nel primo lotto utile». Allo stato attuale, il progetto definitivo

storico, 160 mln ano di recupero

e degli ospedali Incurabili, San Gennaro e An- Comunità e servizi sanitari territoriali. Previsto finanziato con fondi Por, Fesr e Pnrr

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per la riqualifica degli Incurabili è stato approvato. Ed è in corso la conferenza dei servizi per l'acquisizione delle autorizzazioni finali, su tutte quella della Soprintendenza, considerando i numerosi vincoli di carattere storico-artistico a cui è sottoposto il Complesso Monumentale. I lavori dovrebbero iniziare nell'aprile 2023 per concludersi lo stesso mese di tre anni dopo, nel 2026.

San Gennaro - Tempi più brevi, invece, per il San Gennaro e per l'Annunziata. Per il nosocomio della Sanità l'investimento sarà di 28 milioni di euro (di cui 15 in fase di determinazione) e vedrà oltre alla Casa della Comunità, la presenza di un Ospedale di Comunità (20 posti letto), un Suap (10 posti letto), un Hospice (10 posti letto) e una Struttura Intermedia Residenziale – acronimo Sir - (18 posti letto). Per quest'ultima, dedicata al trattamento di pazienti affetti da disturbi psichiatrici che necessitano di interventi terapeutico-riabilitativi o di interventi di supporto sociosanitario effettuabili in regime residenziale, l'inizio dei lavori è previsto entro l'autunno, per concludersi nel marzo 2023. Per i restanti servizi, una volta approvato il progetto esecutivo, i cantieri dovrebbero aprire nel giugno 2023 e chiudere definitivamente nel dicembre 2025.

Annunziata - Non perderà la sua vocazione storica di ospedale specializzato nella cura dei bambini e delle giovani madri, ruolo assunto sin dal Medioevo, l'ospedale dell'Annunziata dove, nel lontano 1876 nacque la prima clinica pediatrica d'Italia. Per l'ospedale di Forcella, la Regione Campania infatti prevede un'Uccp Pediatrica, una Casa della Comunità, un Ospedale di Comunità pediatrico (20 posti letto), un Day Hospital (18 posti letto), una Day Surgery (22 posti letto) e una Centrale Operativa Territoriale. Tempistiche dei lavori? Inizio nel febbraio 2023, ultimazione entro gennaio 2025. Costo totale? 27,5 milioni di euro prelevati dalle linee di finanziamento di Piano Operativo Cultura e Turismo, Fondo Sociale di Coesione, Contratto Istituzionale di Sviluppo del Centro Storico di Napoli (fondi del ministero della Cultura) e fondi della Missione 6 Capitolo 1 del Pnrr. «Il personale sarà utilizzato per quello che già c'è. Stiamo parlando di strutture che già esistono e che riqualifichiamo dal punto di vista delle funzioni. È chiaro che poi dovremo lavorare per avere ulteriore personale, ma in questo caso interveniamo in strutture ospedaliere che già funzionano», fa sapere il titolare di Palazzo Santa Lucia. «Il problema drammatico - puntualizza De Luca - si presenterà quando bisognerà realizzare Case di Comunità ex novo, dove non c'è nessun personale preesistente. Per cui bisognerà fare nuove assunzioni su cui non è prevista nessuna copertura finanziaria. E questo è un problema che rimane aperto».

Ospedali & territorio

De Luca: «Ospedali senza più personale, serve riorganizzarli»

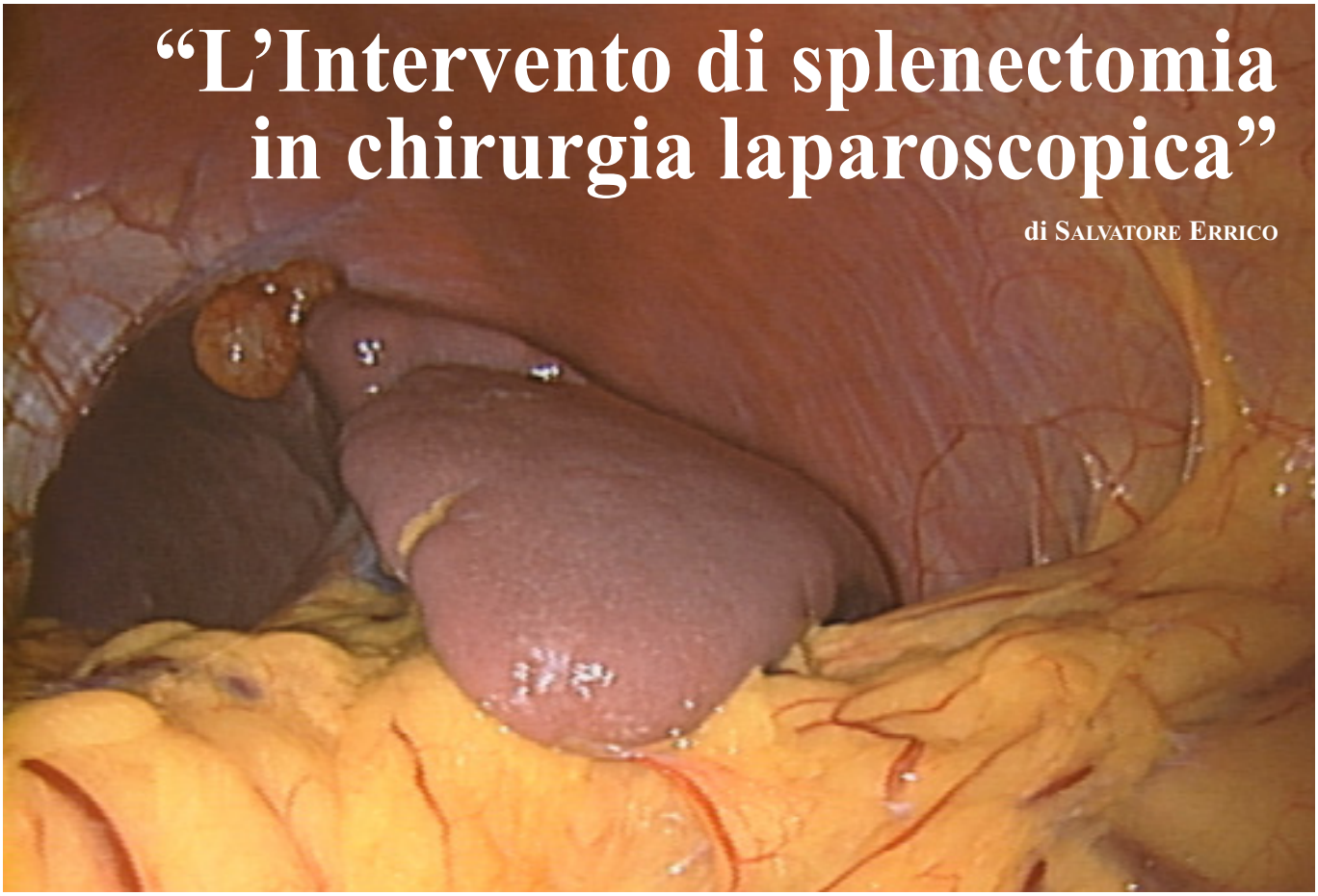
«Separare i codici rossi da altri codici per evitare problemi nei pronto soccorso», annuncia il presidente Vincenzo De Luca. Il governatore guarda già al prossimo autunno quando ci potrebbero essere problemi per l'aumento dei contagi e dei picchi influenzali. «Ad ottobre potremo avere problemi nei pronto soccorso per mancanza di personale. Stiamo lavorando ad una modifica organizzativa: vogliamo provare a separare codici rossi da altri codici per evitare affollamento e per ovviare, per quanto possibile, alla carenza di personale. Che, ricordiamo - puntualizza - vede la Campania con 10mila dipendenti in meno nella sanità. Per questo cercheremo di fare miglioramenti organizzativi per non avere affollamenti». Poi raccomanda: «dal primo ottobre comincia la vaccinazione antinfluenzale da parte dei medici di famiglia per gli over 65 e per i pazienti fragili»

Rizzoli di Ischia: più posti letto e un servizio ottimale

Sia amplia e si dota di servizi moderni l'ospedale edificato per opera del produttore cinematografico Angelo Rizzoli. Il nosocomio ischitano è attivo dal 1961, ed è l'unico presidio isolano e fornisce servizi ed assistenza anche alla popolazione di Procida. Attualmente conta 69 posti letto e con i lavori di ampliamento arriverà a 112. L'ampliamento prevede la realizzazione di un nuovo edificio, nella parte posteriore a quella dell'attuale ingresso. Il nuovo padiglione si articolerà su 4 livelli coperti di circa 700 metri quadrati e garantirà una redistribuzione degli attuali servizi, decongestionando gli spazi attualmente in uso ed oltre ai nuovi posti letto la nuova ala assicurerà spazi per ambulatori e sale di attesa e la possibilità di ospitare il servizio di oncologia. Con questo investimento che permette di raddoppiare l'ospedale, il Rizzoli, che ha avuto un ruolo importante nell'emergenza covid, si arricchisce e s'ammoderna. Ischia è una realtà complessa che richiede un ospedale flessibile passando da 50mila abitanti residenti ai 300 mila estivi.

“L’Intervento di splenectomia in chirurgia laparoscopica”

di Salvatore Errico



La splenectomia è l’intervento chirurgico di rimozione della milza, attuata quando questa ha subìto dei danni irreparabili o non è più funzionale per colpa di una grave malattia.

La milza è un organo dell’addome, dalle dimensioni di un pugno, situato appena sotto la cassa toracica, a sinistra. La milza ricopre diverse funzioni:

Combatte le infezioni, controllando la presenza di agenti patogeni in circolo (batteri e particelle estranee) e producendo anticorpi e globuli bianchi. Favorisce la maturazione dei globuli rossi (eritrociti). Ripulisce il sangue dai globuli rossi invecchiati (un globulo rosso ha una vita media di 120 giorni) o danneggiati. Fa da riserva di ferro, di piastrine e di globuli bianchi. L’intervento di splenectomia laparoscopica nasce in Francia nel 1991con il chirurgo Delaitre e Maignen e in USA con Smith e Carrol, ma la vera evoluzione della tecnica chirurgica è da attribuire a il chirurgo Francese Cagner, che modificando la posizione del paziente sul tavolo operatorio da supino in decubito laterale destro. La tecnica è andata sempre più perfezionandosi e migliorandosi in relazione anche allo sviluppo di uno strumentario sempre più tecnologico, soprattutto per quanto attiene le problematiche legate alla vascolarizzazione dell’organo. Le indicazioni chirurgiche laparoscopiche sono le stesse eseguite con tecnica chirurgica tradizionale. Le migliori indicazioni sono il trattamento di patologie ematologiche benigne con milza di dimensioni normali o appena aumentate: trombocitopenie, anemie emolitiche, sferocitosi. Disordini mieloproliferativi ,neoplasie linfatiche, cisti, tumori , trombosi vena splenica e trombosi arteria splenica. La splenectomia laparoscopica quindi negli ultimi anni rappresenta per molti il gold standard, sicuro ed efficace di milze di piccola e media dimensioni ed in elezione. Le controindicazioni annoveriamo l’urgenza determinata da lesioni spleniche con sanguinamento in atto e instabilità emodinamica del paziente. Milze le cui dimensioni superano i 25 cm in longitudinale con peso di più di 1000 gr stimato durante l’ecografia. In questi casi di Splenomegalia, lo spazio operatorio è ridotto per cui è più difficile manipolare e visualizzare l’ileo splenico con il rischio di maggiori conversioni legate soprattutto ai sanguinamenti.

Preparazione all'intervento:

La splenectomia, se programmata da tempo (cioè se non è un intervento d'emergenza), prevede le seguenti misure preoperatorie:

- Trasfusione di sangue. Questa serve a ridurre l'impatto che l'asportazione di un organo come la milza ha sul paziente. Viene praticata poco prima dell'intervento.
- Vaccino anti-pneumococco. Serve a prevenire le polmoniti, che, negli individui privati della milza e non vaccinati, insorgono assai di frequente.
- Presentarsi a digiuno assoluto. La splenectomia si effettua in anestesia generale, pertanto si richiede di non mangiare e di non assumere liquidi per diverse ore, prima dell'intervento.
- Interrompere l'assunzione di determinati farmaci. In vista dell'intervento, ci sono farmaci che non vanno assolutamente assunti (per esempio, gli anticoagulanti). Per questo motivo, è importante che il paziente comunichi, al medico, tutti i medicinali che sta assumendo o ha assunto nel recente passato.

PROCEDURA:

L'intervento di **splenectomia laparoscopica** si svolge in anestesia generale.

Il chirurgo, prima di tutto, esegue quattro piccole incisioni sull'addome del paziente; attraverso una di queste, infila una minuscola videocamera, che, collegata a un monitor, gli consente di orientarsi durante le successive manovre. Quindi, attraverso le altre tre incisioni, conduce gli strumenti per l'isolamento e l'estrazione della milza.

Tutta la procedura si svolge con il paziente posizionato sul fianco laterale destro secondo la tecnica di Cagner , in modo tale che il chirurgo oltre ad avere una visione migliore si trova perpendicolare sull'ileo vascolare del la milza e può procedere ad una migliore asportazione di essa.

Di seguito riportiamo il protocollo infermieristico di preparazione della splenectomia laparoscopica in uso presso il nostro centro : Azienda ospedaliera dei colli, presidio Monaldi di Napoli, U. O. C. di C H. Generale e Chirurgia Mininvasiva diretta dal professore Diego Cuccurullo.

Preparazione pre-operatoria:

Tricotomia: Xifo-sotto-ombelicale.
Profilassi antibiotica: Cefalosporina.
Catetere vescicale e sondino nasogastrico.

Posizione del paziente:

Laterale dx:

Braccio sinistro abdotto e sospeso da un porta braccio.

Viene posizionato un primo sostegno tangenzialmente, sulla sinistra del paziente all'altezza dei glutei, per mantenerlo in una posizione a 45° ed un secondo sostegno trasversalmente posto tra la scapola e il bacino.

Gamba inferiore sarà disposta in posizione flessa, gamba superiore distesa, cuscino di protezione tra le due gambe, traversa o pilet sotto il fianco dx e il letto operatorio spezzato all'altezza del bacino. Il tavolo è inclinato leggermente in trendeleburg di 30°, per esporre lo spazio tra il margine della cresta iliaca e le coste.

Bracciolo:

Lato opposto alla patologia, l'altro braccio sarà assicurato sull'archetto.

Posizione degli operatori e dello strumentario di sala operatoria:

Il primo operatore e l'ottica sono posizionati al lato ventrale del paziente,il secondo operatore e lo strumentista sono in posizione dorsale.

Monitor lato patologia. Fig A

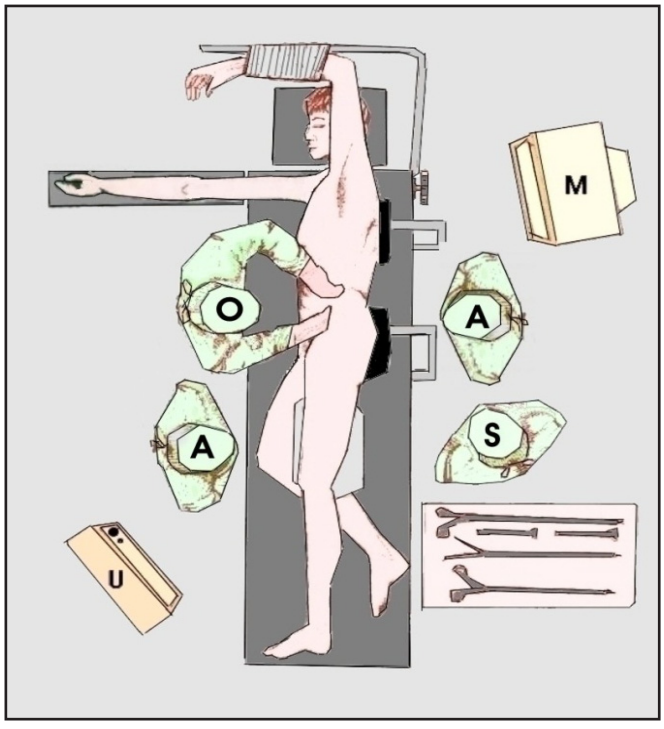


Fig. A - **Splenectomia.**
Posizione del paziente, degli operatori del monitor.

Posizione trocars:

Il primo trocar10-12mm per l'ottica viene posizionato al di sotto del margine costale in corrispondenza della linea ascellare anteriore, un trocars 10-12mm e un trocar 5mm rispettivamente a destra ed a sinistra, al di sotto del bordo costale ed infine un quarto trocar da 5 mm più laterale sulla linea ascellare posteriore. Fig B

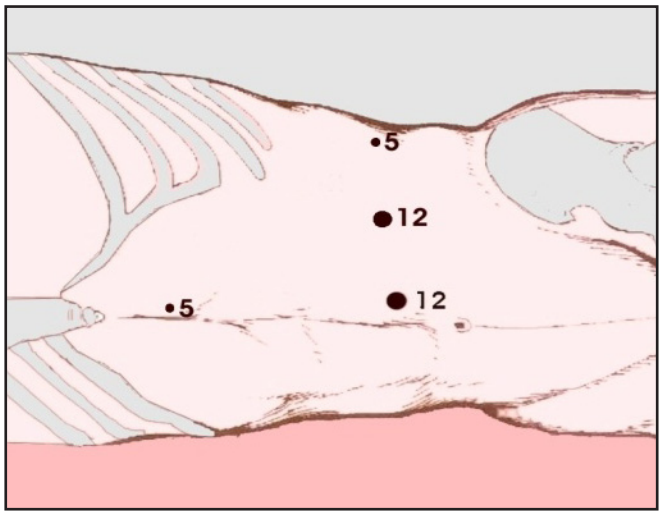


Fig. B - **Splenectomia.**
Siti d'ingresso dei trocars.

Strumentario Laparoscopico:	**Diametro**	**Quantità**
Siringa con 2cc sol. Fisiol.		
Ago di Veress		n°1
Hasson	10-12mm	n°1
Trocar	10-12mm	n°1
Trocar	5mm	n°2
Johann	5mm	n°2
Grasper	5mm	n°1
Delaitre (passafilo)	10mm	n°1
Videoendoscopio 30°	10mm	n°1
Forbice ultracision Armonic Ace	5mm	n°1
Portaghi x laparoscopia	5mm	n°1
Cannula x aspirazione e irrigazione	5mm	n°1

Presidi:

Cavo x elettrobisturi
Tubo x insufflazione
Tubo x aspirazione e irrigazione
Soluzione fisiologica (a sufficienza)
Soluzione sterile calda (ottica).
Endo-bag 15mm (sacchetto).
Tubo di drenaggio 16 french

Materiale sanitario:
-Garze
-Lunghette 15 x 2,5 cm

Ferri x approccio laparoscopico:

Pinza anatomica	n°2
Pinza chirurgica	n°2
Manico da bisturi lama11	n°1
Forbice - media - curva (Metzenbaum)	n°1
Forbice Mayo	n°1
Portaghi	n°1
Klemmer curvi	n°2
Kocher curvi	n°4
Divaricatori di Langebeck	n°2
Pinza ad anello	n°1
Pinza x pulizia	n°1
Coppetta	n°2
Backhaus	n°8
Manipolo x elettrobisturi	n°1

N.B. **Tenere sempre pronto un tavolo chirurgico di base per una laparotomia di conversione**.

Suturatrici metalliche:

Endoclip	10mm	ML

In caso di necessità:

Endoclip	12mm	L
Suturatrice lineare (taglia e cuci)	12mm	35 vascolare

Suture:

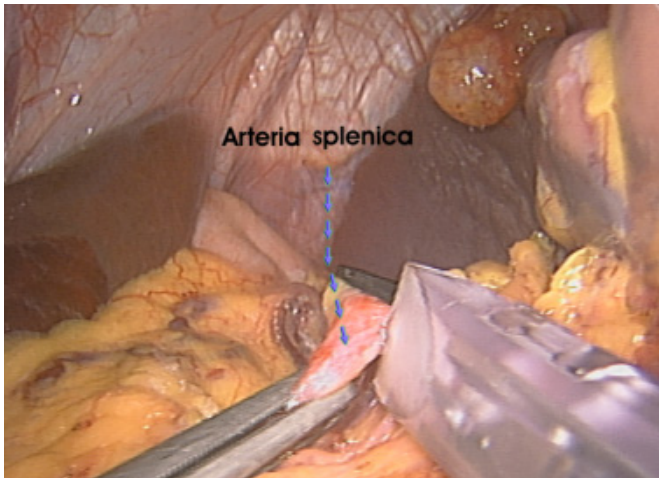
Sutura sint. assorb. (acido poliglicolico).
Cal. 0 ago 5/8
Cal.3/0 ago 3/8

In caso di necessità:
Cal.2/0 composite
Sutura sint. non assorbibile.
(seta, poliestere o poliammide)

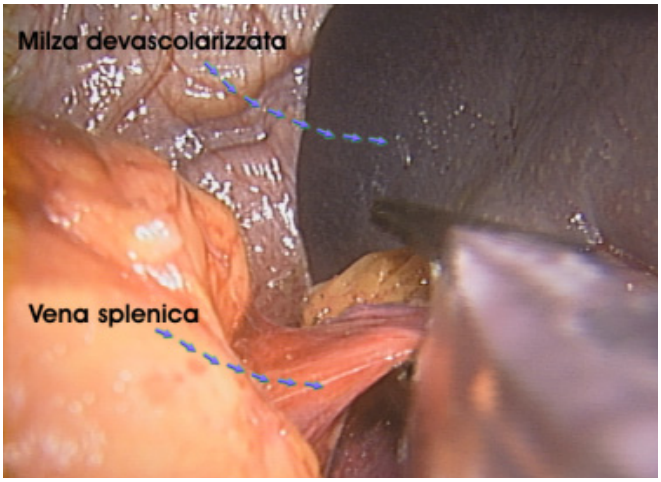
Cal.2/0 ago3/8

Note di tecnica operatoria:

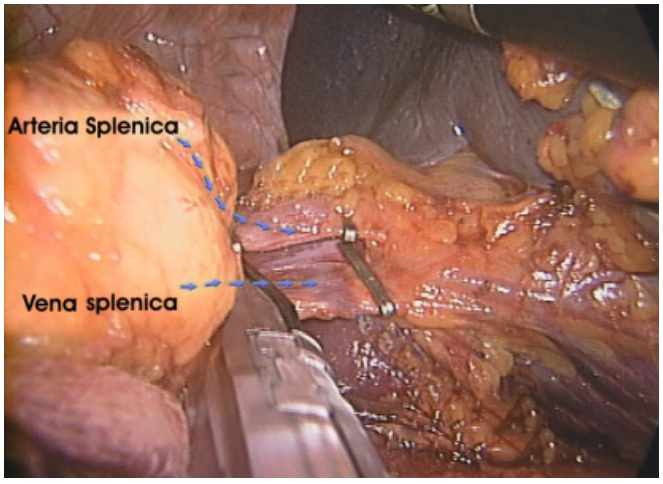
Pneumoperitoneo open-veress-assistito.
Preparazione polo inferiore milza previa interruzione e sezione dei rami polari di essa.
Mobilizzazione della flessura splenica della milza.
Apertura della retrocavità degli epiplon si evidenzia la coda del pancreas e si ricerca l'arteria e la vena splenica.
La **arteria splenica** viene solo clippata ma non sezionata (questo consente di ridurre il volume della milza).
Sezione dei vasi brevi gastrici.
Sezione del legamento spleno-diaframmatico.
Notata la **devascolarizzazione** della milza con il cambiamento del suo colore, si procede alla chiusura e sezione tra clips della vena splenica e successiva sezione dell'arteria già clippata.
Si procede infine alla sezione dei legamenti posteriori (spleno-pancreatico e splenorenale).
Controllo emostasi.
Si posiziona drenaggio nella loggia splenica.
Estrazione della milza dopo posizionamento di un sacchetto di 15mm.
L'estrazione della milza, nelle **patologie benigne**,avviene previa **morcellizzazione**.
(la milza viene triturata all'interno del sacchetto con il morcellizzatore o semplicemente con una pinza ad anello).
Nelle **patologie maligne** viene estratta intera, attraverso una minilaparotomia sovrapubica.



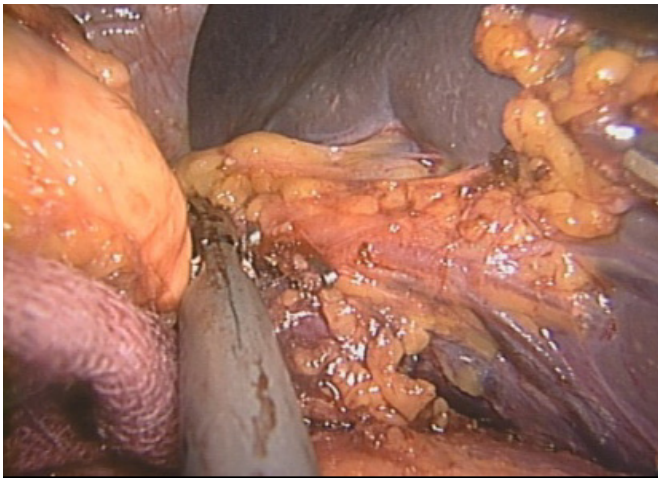
Legaturara arteria splenica



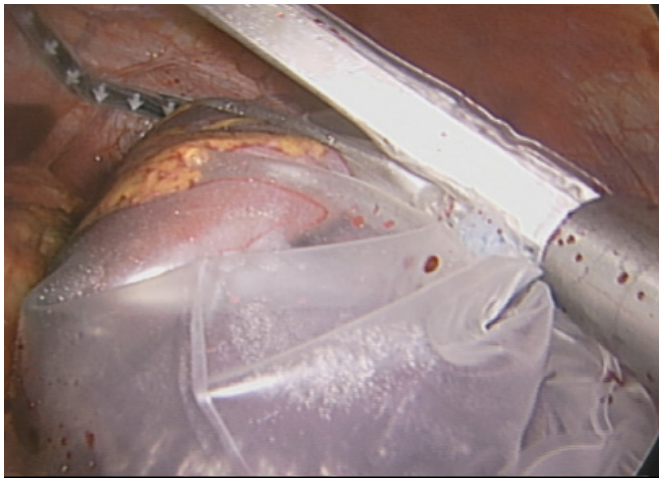
Devascolarizzazione Milza



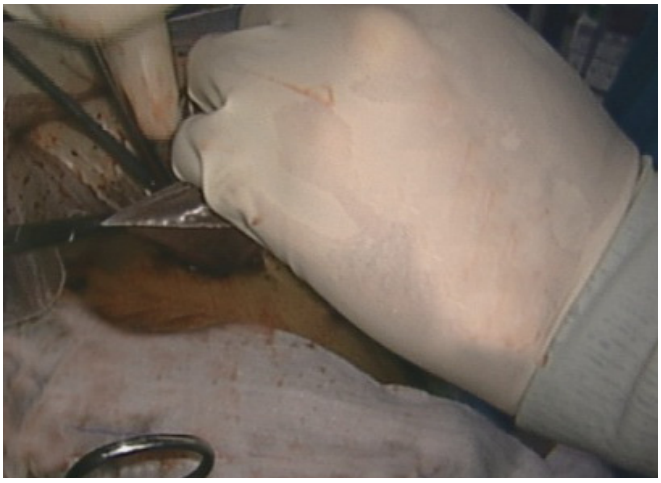
Legatura vena splenica



Sezione arteria e vena splenica



Posizionamento sacchetto15mm



Morcellizzazione della milza

Fase post-operatoria:

Dopo l'intervento di splenectomia laparoscopica, è previsto un ricovero ospedaliero, che può andare da un minimo di due giorni a un massimo di sei. La durata della degenza è in base allo stato di salute del singolo paziente operato.

A dimissione avvenuta, è necessario stare a riposo assoluto per almeno una settimana. Durante questo periodo, è doveroso seguire alla lettera i consigli del medico, il quale vieterà anche le attività quotidiane più semplici e comuni, come farsi il bagno, guidare ecc.

Il completo recupero avviene, solitamente, nel giro di 4-6 settimane.

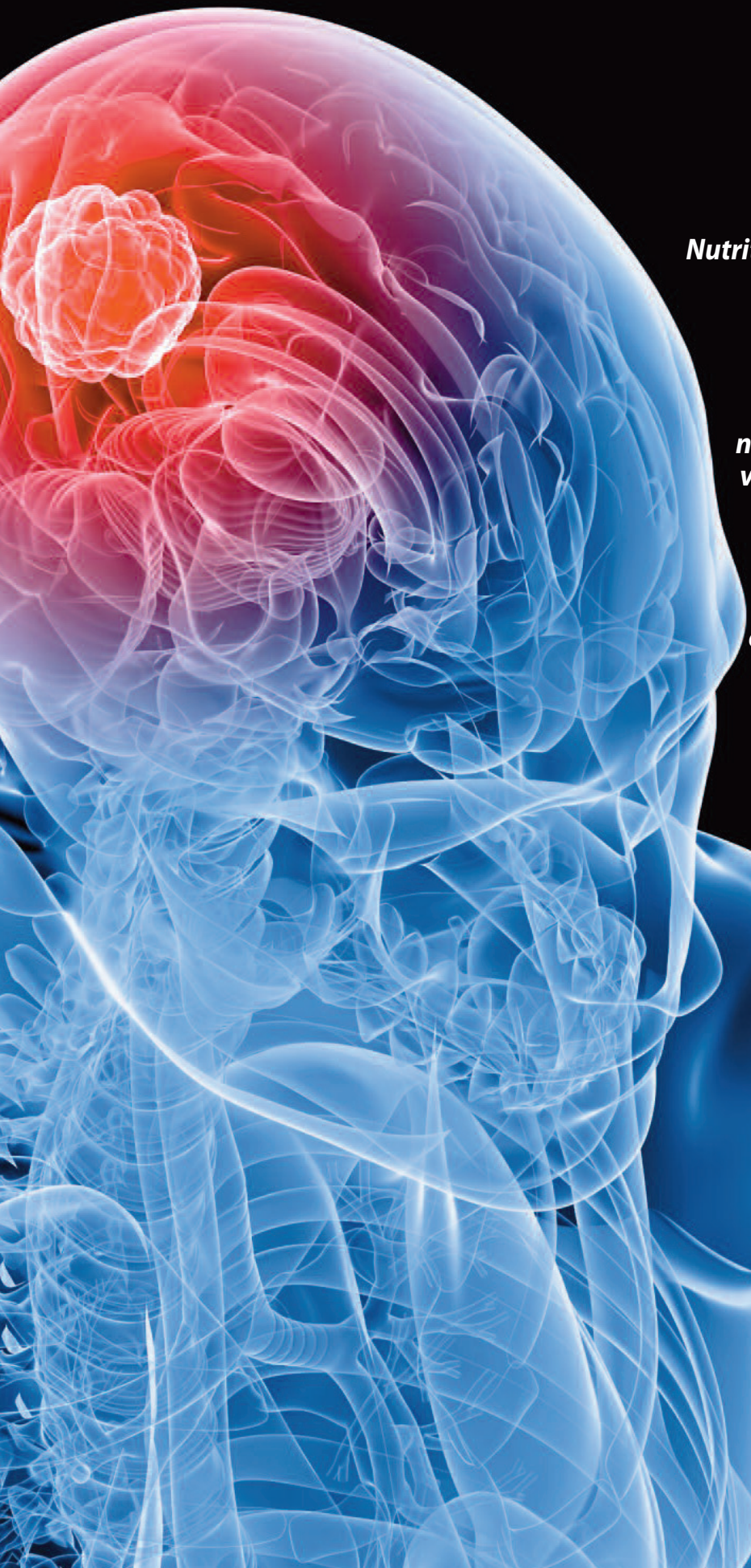
VIVERE SENZA MILZA

Vivere senza la milza è possibile, a patto che si seguano tutti i consigli medici del caso, ovvero:

- Vaccinarsi contro il batterio pneumococco e, annualmente, contro il **virus influenzale**
- Sottoporsi a controlli periodici del sangue
- Rivolgersi al proprio medico curante, ai primi segni di infezione

Risultati

Il successo della splenectomia dipende, principalmente, dal disturbo di base che ne ha richiesto l'attuazione. In altre parole, per fare un esempio pratico di quanto appena detto, un soggetto con una grave leucemia otterrà dei benefici parziali dall'intervento, in quanto l'asportazione della milza serve solo ad attenuare la sintomatologia; viceversa, un individuo con un grave trauma alla milza, una volta operato di splenectomia, potrà guarire completamente e risolvere ogni disturbo.



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NUTRITION EDUCATION MODELS IN PREGNANCY TO INCREASE KNOWLEDGE AND DIETARY PATTERNS: A SYSTEMATIC REVIEW

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Review article

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ABSTRACT

Background. The misconception of nutritional principles causes dietary oversight, resulting in an excess or deficit of energy and specific nutrients essential for the proper course of pregnancy and a child's healthy growth. This review aims to evaluate the effectiveness of nutrition education in improving knowledge and dietary change conducted in pregnant women.

Methods. This review study complies with the 2009 PRISMA guidelines. The studies included in this review are mainly studies with experimental designs. Databases used in searching relevant literatures such as PubMed, ScienceDirect, Willey online Library, Web of Science, Cochrane, and Proquest that were published from 2010 to 2021, full text, English version, experimental studies. Two review authors conducted studies screening based on the eligibility criteria, and extracted important points in the studies included. Quality of the studies included were assessed using EPHPP.

Results. A total of 10 studies were identified in this review. Six studies in the high quality, and four studies in moderate quality. Overall outcomes of the studies included are Knowledge, Attitude, practice, dietary practice, awareness, hemoglobin blood level, and Gestational Weight Gain (GWG).

Conclusion. Nutrition education in many methods has a power to improve knowledge, and dietary change of pregnant women. It implies the need for future large high quality trials using a standardized approach to measuring and reporting similar findings across studies.

Keywords : *Pregnancy, Pregnant women, Education, Nutrition*

INTRODUCTION

Pregnancy is one of the most notable moments in a person's life, and at that time, diet is essential [1]. So far, maternal malnutrition or failure to meet nutritional needs has caused specific health problems for both mothers and newborns [2]. Due to insufficient and unbalanced nutrition, problems such as anemia, osteomalacia, and pregnancy toxemia often arise, and the chances of stillbirth in newborns, premature delivery, congenital abnormalities, and mental retardation increase [3,4]. Furthermore, poor maternal nutritional quality causes developmental maladaptation in the fetus [5]. This results in long-term structural, physiological and metabolic changes and an increased risk of cardiovascular, metabolic, and endocrine diseases in adults [6].

Poor eating habits are a leading contributor to the development of overweight and obesity across the world [7,8]. The frequency of home-cooked meals has decreased over the last five decades, while consumption of foods produced outside the house (i.e., fast food and restaurant food), often higher in calories, fat, and salt, has grown [9,10]. Consumption of home-cooked meals regularly is linked to better diet quality over the lifespan [11,12]. As a result, increasing the frequency of home-prepared meal intake is a significant health habit to target for preventing overweight and obesity in adults and children, and it has been the topic of extensive research over the last two decades [13,14].

International authorities define *pregnancy* as a moment of highly nutritional needs to promote mother and fetal growth [15]. Nutritional support needed in pregnancy includes carbohydrates, fiber, protein, and micronutrients, such as vitamin A, vitamin B complex folate, and iron [16]. However, a study in Canada found that people have insufficient micronutrients through food, such as high levels of iron (97 percent), vitamin D (96 percent), and folate (70 percent) intake [17]. Therefore, stakeholders intended to present food and nutrition education to encourage a

balanced diet based on food culture's valorization [18]. Food and nutrition education is an essential strategy for upgrading health because it encourages people to identify and tolerate their cultural discrepancies and empowers them to complete decisions concerning their health care [19]. Antenatal nutrition education is related to better eating patterns and a healthier pregnancy [20]. Healthy fetal growth and development, cognitive capacity, and immunological function are promoted by optimal nutrition throughout pregnancy [21]. Pregnant women's adherence to dietary guidelines decreases due to a lack of nutrition expertise and insufficient information from health providers [22]. Before and during pregnancy, the mother's behavior becomes a determining factor for both the mother and her child [23,24]. Many dietary mistakes can be caused by a lack of understanding of nutritional principles, resulting in an excess or deficit of energy and specific nutrients essential for the proper course of pregnancy and a child's healthy growth [25,26]. Adequate diet, in combination with sufficient physical activity and the avoidance of harmful habits, enhances the chances of a healthy pregnancy [27,28]. One of the previous systematic reviews on pregnant women's compliance in following dietary guidelines during pregnancy stated that knowledge was an essential predictor concerning adherence to the given nutritional guidelines [29].

It is essential to assess how successful nutrition educations are in improving the nutritional status of pregnant women especially their knowledge and dietary.

This systematic review aimed to assess the efficacy of nutrition education in knowledge and dietary change during pregnancy and their implications for future research. Therefore, the question for this review is, "what kind of nutritional education model is good for increasing knowledge and changes in the diet of pregnant women?".

METHODS

Design

When reporting this systematic review, the standards outlined in the Preferred Reporting Items for Systematic Reviews and Meta-Analyses statement were followed [30].

Eligibility Criteria

The participants, intervention, comparator, outcome, and study design (PICOS) criteria outlined in Table 1 were used to select studies for inclusion in this review.

Criteria	Inclusion criteria
Participants	Healthy pregnant women in any gestational weeks
Intervention	Health education or promotion
Comparisons	Treatments with a single arm and interventions with many arms (with a comparison intervention or nonintervention control group)
Outcomes	Knowledge, Weight gain, awareness, behavior, dietary changes
Study Design	Experimental studies (eg, randomized controlled trials, quasi-experimental, pre- and post-test study with no control)

Table 1. *Studies Criteria based on PICOS*

Type of Studies

The studies included in this review use experimental designs such as Randomized Controlled trials (RCT) and Quasi-experimental. Participants in the study should be pregnant women in any trimester of pregnancy.

Search Strategy

The following databases (platforms) were searched: PubMed, ScienceDirect, Willey online Library, Web of Science, Cochrane, and Proquest in the time frame between 2010 to 2021. We also searched the gray literature database for additional information such as Google Scholar, conference proceedings, and BASE. The keywords used are based on the Medical Subject Headings (MeSH) standard. Using Boolean operators and a combination of keywords used, namely: ((("pregnancy nutrition"[Title/Abstract]) OR ("pregnancy nutrition knowledge"[Title/Abstract])) AND ((("health education"[Title/Abstract]) OR ("nutritional education"[Title/Abstract])) OR ("health promotion"[Title/Abstract]))) AND ((((("knowledge"[Title/Abstract]) OR ("attitude"[Title/Abstract])) OR ("practice"[Title/Abstract])) OR ("awareness"[Title/Abstract])).

Study selection

Two review authors independently assessed the titles and abstracts of the retrieved studies to see if they met the eligibility criteria (RUS and ASJ). The full-text publications for the remaining studies were obtained and evaluated for eligibility which obtained and read full texts of the studies that potentially met the inclusion criteria. The first ineligibility criterion from the following list determines why a publication was excluded: study design, population, intervention, and results. The first authors decided disagreements from review authors regarding the feasibility of the study (SUR and SOE), and this procedure was followed throughout the review.

Data Extraction and Quality Assessment

Two authors (SUR and SOE) independently extracted data in duplicate from studies that met the

inclusion criteria to avoid any chance of misinterpretation of conceptualizations in each study.

Data were synthesized in two ways: (1) research design and intervention strategies were presented. (2) the findings of each study were analyzed qualitatively by collecting the main findings with the design and intervention applied. Furthermore, data extraction was carried out to provide a brief description of the articles' substance, such as the characteristics of the respondents and the characteristics of the study. Data extracted included author, year, country, participant, study design, Intervention, outcome, and main findings. The researchers then examined each extraction and any discrepancies were discussed until consensus was reached.

The quality of the articles included was measured using an assessment tool for the Effective Public Healthcare Panacea Project (EPHPP) [31] which allows experts to apply this tool to articles on any public health topics. This tool uses STRONG, MODERATE, and WEAK categorizations based on the assessment results on eight components, namely Selection Bias, Study Design, Confounders, Blinding, Data Collection Methods, Withdrawals, and Drop-outs, Intervention Integrity, and Analyzes. Articles in the STRONG category are the article reached four strong from the EPHPP component without any of the components being considered weak, the MODERATE category if four components reach strong. One component is rated "weak," and for the WEAK category, it is given if two or more components reach a "weak" value.

Data synthesis

Data from the included studies could not be pooled for meta-analysis because to the substantial diversity in the methodological design of the investigations. Consequently, the narrative synthesis of the included study findings was provided using the Synthesis without Meta-analysis in Systematic Reviews: Reporting Guideline [32].

RESULTS

Search Results

The process of searching for articles up to the determination of articles that meet the inclusion requirements can be illustrated in Figure 1.

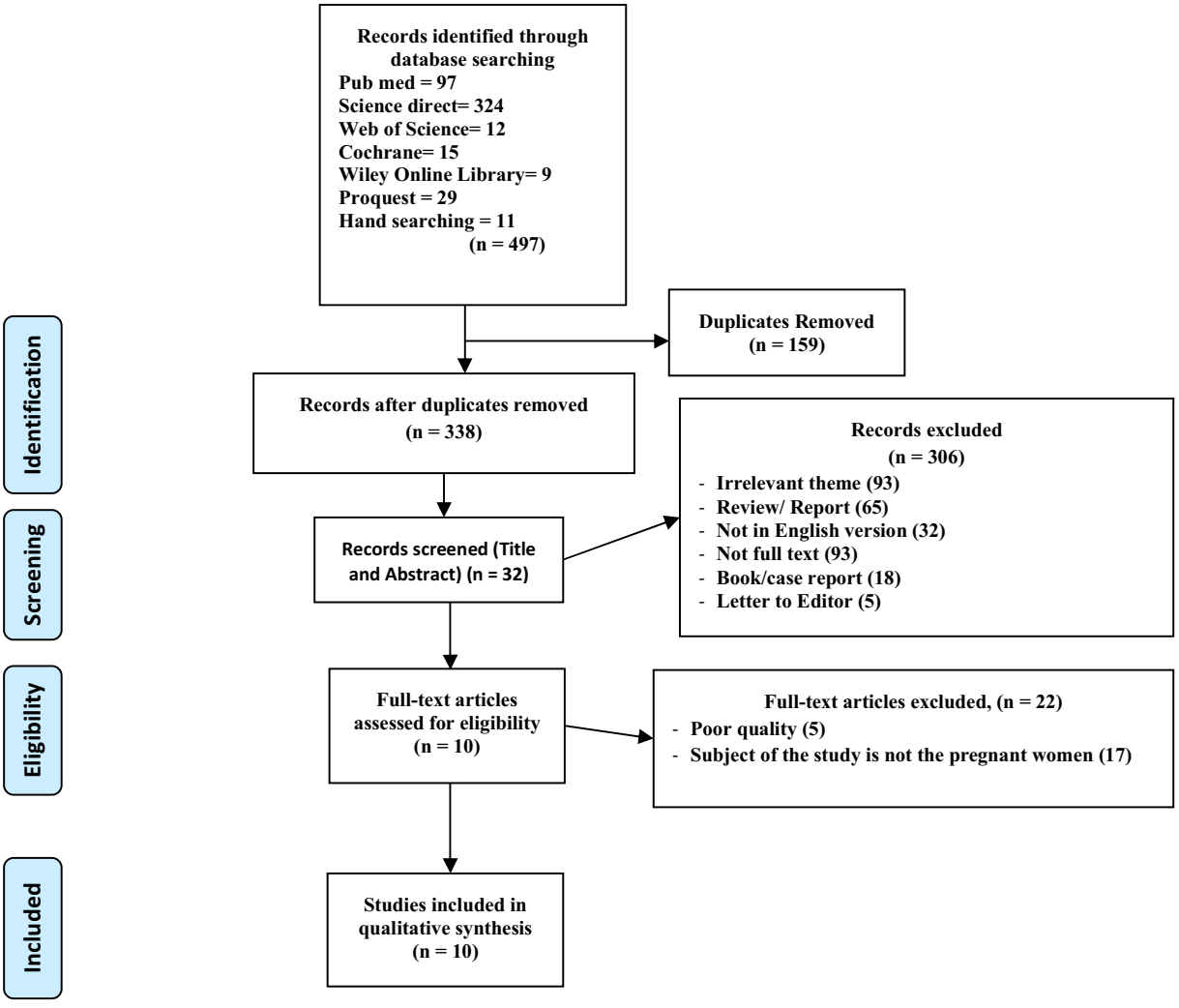

Figure 1. *PRISMA Flowchart for Literature Search*

Search results from five databases yielded 486 articles according to the keywords applied, and then 159 articles were eliminated because they were duplicates, leaving 327 articles. Furthermore, the screening stage was carried out on the remaining articles; as many as 295 articles were excluded because they did not discuss the nutrition status in pregnancy. At the end of the screening, ten articles met the inclusion criteria (Table 2). Those were included in the moderate and robust categories based on the EPHPP assessment tool for article quality assessment.

Author, year	Country	Participants	Design	Intervention model	Evaluation strategy	Outcomes	Main findings	Study quality
Oliveira et al., 2018 [33]	Brazil	Intervention: 76, Control: 79 of pregnant women	RCT	A booklet entitled Healthy Diet during Pregnancy with Regional Foods. The dimensions were 148 mm x 210 mm, and the publication had eight pages.	The Brazilian Food Insecurity Scale	KAP	Knowledge (P < .001) Attitude (P < .001) Practice (P < .001)	High
Demilew et al., 2020 [34]	Ethiopia	356 pregnant women	RCT	Community-based guided counseling using the HBM and the TPB through a home visit on non-working days (40 to 60 minutes each session) for eight months	Questionnaire (FFQ) through one-to-one interviews	attitude, subjective norms, self-efficacy, perceived control, intention, knowledge, and dietary practices	Dietary practice (P < .001)	High
Diddana et al., 2018	Ethiopia	Intervention: 69, Control: 69 pregnant women	RCT	Nutrition education every 15 day	Questionnaire	Knowledge, and dietary	Knowledge (P < .001)	High

[35]				in 5 months		practice	Dietary practice (P < .001)	
Al-Tell et al., 2010 [36]	Palestine	102 (51 intervention; 51 control) pregnant women aged 20 – 30 y.o	Quasi-experimental	The complementary nutritional intervention (CNI) in 10 sessions	Interviewing - questionnaire	Hemoglobin blood level	Improve of Iron supplementary use, hemoglobin level, and perception	Moderate
Fallah et al., 2013 [37]	Iran	100 pregnant women age 16 to 40 y.o	Quasi-experimental	Nutritional education	Interviewing - questionnaire	Awareness	Improved knowledge (P <.001)	Moderate
Goodarzi-Khoigani et al., 2017 [38]	Iran	Intervention= 88, Control= 86 of primiparous pregnant mothers	RCT	The nutrition education intervention design, based on Pender's HPM experimental group, included three 45–60 min training sessions in 6–10, 18, and 26 weeks of pregnancy.	Recording daily food intake	Dietary pattern	Improved food servings (P<.001)	High
De Stephano et al., 2010 [39]	Somalia	28 refugees pregnant women	RCT	Video based Health education (3-4 min per topic)	Questionnaire	Acceptability of the educational video Knowledge	Acceptable Improved knowledge	Moderate
Shakeri, 2013 [40]	Iran	280 pregnant women	Quasi-experimental	Lecture held in 8 sessions each planned for three sections taking 90 minutes	BASNEF model questionnaire	KAP	Knowledge (P<.001) Attitude (P<.001) Practice (P<.001)	Moderate

Baruth et al., 2019 [41]	USA	43 pregnant women 14–20 weeks gestation		the SELF intervention (Supporting hEaLthy Futures: Creating a Healthy Family by Investing in YourSELF) for 4 weeks	Self Monitoring using FitBit Charge to monitor physical activity (daily) and an Eat Smart Precision digital scale (model ESBS-01) to monitor weight.	Gestational Weight Gain	no significant difference in GWG (P = 0.87)	High
Olson et al., 2018 [42]	USA	465 in control group, and 930 in intervention (1395) ofpregnant women	RCT	e-health intervention for 12 months	Online surveys using EARLY questions	Gestational Weight Gain Behavior change	No effect on GWG	High

Table 2. *Extraction of Literature Included*

Description of studies included

The articles reviewed in this study are located in several countries such as Iran [37], Ethiopia [34], USA [41], Brazil [33], Palestine [36], and Somalia [39]. Study design including Randomized Controlled Trial (RCT) [33–35,38,39,42], and Quasy experimental [36],[37,40,41].

Characteristics of participants

All reviewed studies included pregnant women with variations in gestational age including below 36 weeks (Oliveira et al., 2018), below 16 weeks [34,35] below 20 weeks [41,42], 14-16 weeks [36], 6-10 weeks [38], 18 – 24 weeks [40], 14-20 [41]. Two studies were not applied the gestational age [37,39].

Description of interventions

Some studies provided booklet regarding Healthy Diet during Pregnancy [33], Counseling regarding dietary practice [34], Nutrition education (theoretical session, poster, brochures, flipchart, and whiteboard) [35,37,40], theoretical and practical [36], the nutrition-education intervention based on Pender's HPM [38], video health information [39], exercise, self-monitoring, facebook private group [41], web-based health information [42].

A booklet entitled "Healthy Diet during Pregnancy with Regional Foods (Alimentação Saudável na Gravidez com os Alimentos Regionais)" was used as the main intervention which contains the concept of healthy nutrition, allowed and avoided foods during pregnancy, the benefits of healthy dietary habits for mothers and babies, food hygiene, and recipes with regional foods. The intervention group participated in the individual intervention in a private room, in a single session, with an average duration of 20 minutes. During the meeting, the booklet was introduced, read, and the patients kept a copy to take home [33].

The counseling model has also been used in a study in Ethiopia. The intervention package was community-based guided counseling using the HBM and the TPB. The core content of counseling guide including meal frequency, portion size with increasing gestational age and taking diversified meals, consumption of iron/folic acid supplementation, iodized salt use, reducing of a heavy workload, taking day rest, use of impregnated bed nets, and health services. Counseling was given monthly using a counseling guide and leaflets with core contents. Individual Nutrition counseling was given through a home visit on non-working days. Each counseling session lasted for 40 to 60 minutes. Participants attended four counseling sessions during pregnancy. The first counseling was given before 16 weeks of gestation, the second and third counseling sessions were given during the second trimester of pregnancy, the fourth

counseling was given during the early third trimester of pregnancy. The control group received nutrition education given by the health system [34].

Nutrition education intervention recorded in three studies was given to pregnant women between 1 and 4 months at baseline. The education was given every 15 days for 5 consecutive months. For intervention group, education intervention was given based on Health Belief Model theory: (1) susceptibility of the pregnant women and fetus to malnutrition due to inappropriate dietary practices nutrient deficiency or over nutrient intake; (2) severity of malnutrition such as wasting/thinness and overweight/obesity and high risk of fetus to intrauterine growth retardation, brain development, and cognitive function due to macro- and micronutrient deficiency; (3) benefits of right eating or dietary practices on women nutritional status and fetus health, (4) barriers to practice appropriate good dietary practices; and (5) self-confidence/efficacy to follow right dietary practices. The education was provided using theoretical session, poster, brochures, flipchart, and whiteboard. For the control group, nutrition education was given by trained community health volunteers based on the general usual nutrition education which is currently provided by health extension workers [35]. Fallah et al [37] conducted face-to-face nutritional education which contains two to four lessons based on a nutrition package by Iranian ministry of health. Another study by Shakeri [40] nutrition education conducted in groups of 12 people, held in 8 sessions each planned for three sections taking 90 minutes. An educational CD, educational booklet, tract, and pamphlet about the advantages of good nutrition for mothers and embryo, appropriate ways of doing activities during pregnancy, and false beliefs were given to the participants. Furthermore, lecture, question and answer, group discussion, and film screening methods were used to educate the patients. Paticipants in control group received the routine prenatal instructions [40].

The complementary nutritional intervention (CNI) program proposed by Al-Tell and colleague, it was developed based on the educational principles using the principles of health belief model that aimed to behavior change. The program composed of two parts that were presented within 16 hours and through 8 grouped sessions, in addition to another 2 individualized/ follow-up session for each woman. The content of the theoretical part consisted of 60% of program hours, and the practical part consisted of 40% of program hours. The study also used educational booklet for additional materials. It included information regard iron deficiency anemia in term of causes, complication, treatment inhibitors and promoters of iron absorption and examples of prepared meals rich of iron [36].

Khoigani and colleague conducted nutritional education based on the Pender's HPM for intervention group, included three 45 – 60 minutes training sessions in 6 – 10, 18, and 26 weeks of pregnancy. Each participant had a meeting with the study nutritionist at the time of enrollment for nutritional assessment. In the first session, the dietary pattern, including the average daily servings of five food groups, was explained to the participants. In the second session, practical steps (goal‐setting techniques) to increase self‐efficacy [38].

Destephano et al evaluated the use of DVD to spread information about caesarean birth, episiotomy, nutrition and exercise, the father's role, preparation and prevention, and pregnancy myths and facts. Each video topic ranged from 3 to 4 min in length, incorporated traditional songs and poetry, and had English subtitles [39].

Baruth et al used the social cognitive theory to develop SELF intervention (Supporting hEaLthy Futures: Creating a Healthy Family by Investing in YourSELF). The intervention included four key components: Exercise is Medicine™, self-monitoring, opportunities for support, and walking groups (optional). In self monitoring, Participants were given a FitBit Charge to monitor their

physical activity (daily) and an Eat Smart Precision digital scale (model ESBS-01) to monitor their weight. Participants were instructed to weigh themselves once a week using the scale provided, and enter their weight into their FitBit account [41].

Participants (control and intervention groups) in Olson et al [42] trials given access to the intervention website and to the placebo control website. The self-directed, integrated online and mobile phone behavioral intervention was designed using the Integrative Model of Behavior Prediction and the Behavior Model for Persuasive Design based on a non-electronic pregnancy lifestyle intervention. Participants in intervention group received access to three behavior change tools including a weight gain tracker, a diet and a physical activity goal-setting and self-monitoring tool, as well as, health information including tips, articles, frequently asked questions; a description of pregnancy and parenting-related resources available in the local community; a blogging tool; and an event and appointment reminder [42].

Quality Assessment

Assessment of the methodological quality of studies resulted in 6 studies with a high quality score [33–35,38,41,42] and 4 studies with a moderate quality score [36,37,39,40].

Description of Outcomes

Outcome measures reported in the included studies were Knowledge, attitude, practice [33–35,37,39,40], Dietary practices [34,35,38], Gestational Weight Gain (GWG) [41,43], behavior change [42], Hemoglobin blood level [36]. One study collected the result of outcomes measurement immediately after the intervention [39], Three studies conducted the evaluation in

two times for 6 weeks [40], 5 months [36], and 8 months [42]. The rest of the studies evaluated the outcomes in the range of one to five months [33–35,37,38,41].

As mentioned in Oliveira et al study, the knowledge was considered adequate when used to prepare varied meals and/or juices, knew three or more types of regional foods, and mentioned at least two types of meals prepared with regional foods. The attitude was considered adequate when pregnant women prefer to use regional foods and know the advantages. The practice was considered adequate when pregnant women referred to use regional foods at least twice a day [33]. In Diddana study, knowledge measurement is based on the Health Belief Model consists of 15 nutrition question [35]. In Fallah study, Knowledge as a primary outcome was measured before the intervention and two posttests within three weeks interval [37]. Another study in Iran with knowledge and attitude as primary outcome completed the evaluation immediately and 6 weeks after the educational intervention for the samples of experimental and control groups [40]. For dietary practice outcome, assessment used a food frequency questionnaire (FFQ) collected between 36 to 37 weeks of gestation. Women who didn't attend all counseling sessions were considered non-adherent to the guideline. But, women who withdraw from participating in the study were labeled as lost to follow up [34]. In Diddana study, dietary practice variable was collected by using 17 dietary habit questions [35].

DISCUSSION

Overview study included

This review provides evidence that interventions with a health education on pregnancy issue can improve pregnant women knowledge, attitude, practice, dietary pattern, awareness, hemoglobin level, and weight gain outcomes. There is somewhat more persuasive evidence that health

education interventions are favorably linked with healthy living change during pregnancy of pregnant women as participants due to the number of RCTs that revealed significant findings. Because of the high variability of research designs and methodology utilized in the included papers, meta-analysis cannot be conducted. Furthermore, the goal of this evaluation was to serve as a first step in identifying evidence-based treatments that would help transfer prenatal nutrition research and guidelines into practice. Although the evidence highlighting the importance of nutritional status during pregnancy has been documented, and numerous practice guidelines, including the recently consolidated inter-professional practice guidelines, have existed for some time, there is still a significant gap in translating this evidence to pregnant women through health promotion efforts. Overall, there are few dietary promotion treatments during pregnancy, and only 10 interventions have been assessed on specified health outcomes, according to this analysis.

Overall, the studies comprised a wide range of pregnant women from six different nations, resulting in some findings. Furthermore, all of the research was done in a communal context. A previous evaluation noted that complete prenatal care treatments should be available in remote regions or with less infrastructure and that their duties and those of trained CHWs should be harmonized across nations to assure basic levels of care [44]. Pregnant women who did not take advantage of offered interventions, so missing out on the possibility of a better pregnancy outcome, exemplified the lack of access to services in remote regions [45].

We recommend that maternal and family health service managers at the national, state, and local levels devote resources to adapting and testing existing culinary nutrition programs or, as appropriate, developing new culinary nutrition programs tailored to these life stages, as a result of the potential benefits of culinary nutrition interventions during pregnancy and postpartum

identified in this review. Culinary nutrition programs for pregnant or postpartum women might be incorporated into existing health education programs or offered separately. A workforce with culinary nutrition expertise in maternity and family health care would be required to support such initiatives.

Nutrition Education

For this group is included in the demographic group prone to nutrition and health concerns, nutrition education is crucial during pregnancy [46]. According to cross-sectional research, pregnant women's understanding of nutrition during pregnancy went from 53.9 percent to 97 percent after receiving nutrition education, while their pregnancy-specific dietary practices increased from 46.8 percent to 83.7 percent [47].

Besides knowledge, GWG is also an important issue to be discussed In both the short and long term, excessive GWG is linked to unfavorable health outcomes for mother and child health [48]. Excess GWG is linked to an increased risk of hypertensive disorders [49], glucose intolerance [50] and and poor delivery outcomes during pregnancy [51]. It also predicts more significant baby morbidity and fetal development, such as birth weight, big for gestational age, and macrosomia, among other things [52].

Olson et al., [42] In their experiment, a self-directed, integrated online and mobile phone behavior modification intervention failed to show a beneficial effect on the proportion of the sample with excessive total GWG when compared to an information-only placebo control condition (which is included in this review). It was most likely discovered because the intervention was self-directed. That may have been a wrong decision. Structured, personalized

treatments were more likely to be successful in promoting dietary change, according to a recent assessment of the research on e-behavioral nutrition interventions [42].

One research included in this review, which focuses on the hemoglobin blood level as an outcome, was done in Palestine. Compared to the control group, the study found a substantial beneficial link between dietary behaviors and improved hemoglobin levels. Compared to the control group, there was also a good connection between maternal hemoglobin levels in the third trimester and tiredness levels in the study group [36]. According to review research, nutrition education such as counseling, web-based, and text messages may enhance pregnant women's adherence to iron supplements. The research also stressed the significance of a more extended trial period to assess the intervention's effectiveness correctly [53].

According to the World Health Organization, pregnant women who reside in areas with high nutritional deficits should get some primary nutritional treatment. Nutrition counseling on a healthy diet, energy and protein dietary supplements, iron and folic acid supplementation (all settings), calcium supplementation to reduce the risk of pre-eclampsia in settings where dietary calcium intake is low. Zinc supplementation is only recommended for pregnant women in the context of rigorous research, and multiple micronutrient supplementation is all recommended in settings where 20% or more of women are underweight. Nonetheless, in areas where nutritional shortages are common, several micronutrient supplements include iron and folic acid, may be recommended for maternal health [54].

CONCLUSION

Nutrition education in many methods has a power to improve knowledge, and dietary change of pregnant women. However, there is a need for future large high quality trials using a

standardized approach to measuring and reporting similar findings across studies. A future study might use a double-blind RCT approach with larger sample size and a variety of nutritional outcomes. Longer duration in implementing the trials will improve the outcomes of the study as expected.

Limitation

Our study has several flaws, including a lack of access to the most often recommended databases for searching relevant literature and, ultimately, trial trials. Some research relied on self-reported outcome measures, which might be vulnerable to various biases (e.g., recall bias and response bias). Because some of the studies are of intermediate quality, their conclusions should be read with care. We should also consider that non-English paper were not considered and included in this review, with a potential bias to not identify as many eligible studies as possible.

Conflict of interest statement

The author(s) declares no conflict of interest.

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KNOWLEDGE AND ATTITUDES BETWEEN NURSES, MIDWIVES AND STUDENTS ABOUT VOLUNTARY TERMINATION OF PREGNANCY: A SCOPING REVIEW OF THE LITERATURE

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Review article

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Background: Voluntary termination of pregnancy (VTP) is influenced by ethical convictions, religious orientations and knowledge of the law. The latter is essential for students to be improved in University curricula, in order to develop attitudes among future nurses and midwives with the objective to reduce stigma and reluctance in providing VTP. Previous research has shown that nursing and midwifery students' attitudes and knowledge can be improved.

Aim: The aim of this study is to describe literature regarding knowledge and perception about abortion and voluntary termination of pregnancy in several countries of the world among nurses, midwives and university students.

Methods: This is a scoping review of the literature conducted by following the recommendations of the PRISMA-ScR Statement. The authors selected studies in MEDLINE, Scopus, CINAHL, PsycINFO, Academic Search Index, Science Citation Index and ERIC, published in English and Italian in the last decade. Quality assessment was performed using the Jadad scale.

Results: Initially, 434 studies were selected. A total of 11 articles met the inclusion criteria. The articles included in the scoping review deal with the issue of abortion from different perspectives. From the analysis it emerged that the barriers for VTP are the lack or inadequate knowledge of the legislation and of the practical / technical phases of the procedure.

Conclusions: Health professionals and students have different perspectives and attitudes toward VTP. Nurses and midwives have inadequate knowledge of procedures and legislation. Therefore, it is recommended to implement university curricula on the topic.

Keywords: knowledge, attitudes, voluntary termination of pregnancy, nurses, midwives, students.

INTRODUCTION

Abortion, originated as birth control, is the termination of pregnancy before 20 weeks of gestation or with the foetus weight less than 500 gr at birth [1,2]. It can happen when at least three events occur: spontaneous or habitual abortion (also called Voluntary Termination of Pregnancy - VTP), criminal or illegal abortion, and therapeutic or legal abortion [3]. In the last decades of the 20th century, many countries all over the world legalised this practice. The World Health Organization (WHO) states that 3 out of 10 (29%) of all pregnancies, and 6 out of 10 (61%) of all unintended pregnancies, ended in an induced abortion [4]. In many societies, a deep conflict about the legality and morality of abortions manifests itself in restrictive laws and strong antiabortion attitudes. Women, including adolescents, with unwanted pregnancies often resort to unsafe abortion when they cannot access a safe one. Barriers to accessing safe VTP include: restrictive laws, poor availability of services, high cost, stigma, conscientious objection of health-care providers and unnecessary requirements, such as mandatory waiting periods, mandatory counselling, provision of misleading information, third-party authorization, and medically unnecessary tests that delay care [5,6]. Kumar et al. [7], defined abortion stigma as “a negative attribute ascribed to women who seek to terminate a pregnancy that marks them, internally or externally, as inferior to the ideals of womanhood”. According to this definition, women who experience VTP challenge social norms regarding female sexuality and maternity, and their doing so elicits stigmatising responses from the community. Where opposition to abortion is widespread, abortion-related stigma is likely to negatively influence women’s abortion experience.

Increased knowledge and improved attitudes among health care providers and university students have the potential to reduce stigma and reluctance to provide abortion [6]. In a recent study conducted by O’Shaughnessy et al. [8], it was reported that “low levels of knowledge among staff suggests that training is required to ensure the provision of a safe and effective VTP service”. Midwifery and Nursing schools do not provide termination of pregnancy education or, if they do, it

is inadequate and so, most staff were left to navigate this procedure without support or prior practice.

Termination is only possible in the rarest of cases: when the pregnancy poses a serious risk to the woman's life or in the event of foetal malformations [7]. In Italy, as in many countries, it is set at 12 weeks' gestation according to the law No. 194 enacted on May 22nd, 1978. Before that date, VTP was considered illegal by the criminal code [9]. The law regulates VTP with the aim of guaranteeing the bio-psycho-social integrity and well-being of women. A woman can have an abortion within the first 90 days, or within the fourth and fifth months only for therapeutic reasons [9]. Conscientious objection status does not exempt the professional from assisting the woman before and after the procedure, but from carrying out only those procedures directed towards and aimed at the termination [10-13]. The nurse can raise a conscientious objection to assisting the VTP with a declaration that can be withdrawn at any time [9]. Termination is a woman's right, and the staff involved must act in accordance with the law and the woman's right to free choice. A better understanding of factors influencing perceptions may be useful in determining the curricula of university programs and in giving nurses and midwives the tools to cope with their own beliefs towards late abortions [14-16]. Thus, this review seeks to contribute to research on abortion stigma by exploring literature regarding attitude, knowledge and perception differences toward abortion among nursing, midwifery and students, assessing the scientific evidence available to date and thereby delineating directions for future research.

METHODS

Identification of Relevant Studies

A scoping review was chosen as the research methodology [17]. This supports what is referred to as a systematic approach to the synthesis of evidence, helping to identify gaps for future studies. In this case, the goal is to determine the strength of the evidence using a consistent best practice

approach. The search of the international literature was conducted in accordance with the PRISMA-ScR Statement (PRISMA extension for Scoping Reviews)[18] and was conducted within some main databases of biomedical interest: MEDLINE, Scopus, CINAHL, PsycINFO, Academic Search Index, Science Citation Index and ERIC. The review was carried out from October 2021 to February 2022. The keywords used were *"knowledge; attitude; perception; nurse; student; abortion; midwife and questionnaire"*. The latter were useful in formulating the research question according to the PCC (Population, Concept and Context) methodology (Table 1).

POPULATION	Nurses, Midwives, and Students
CONCEPT	Knowledge, Attitudes and Perceptions
CONTEXT	Voluntary Termination of Pregnancy

Table 1. Clinical research question identified through the PCC methodology

Study Selection and Eligibility Criteria

Research question: *"What are the differences in knowledge and attitudes between nursing and midwifery staff and the corresponding university students?"*. The search string was created using the Boolean operators (AND and OR), the terms MeshTerms and the truncation function, to ensure maximum search sensitivity and specificity:

(Knowledge OR Attitude OR Perception) AND (Abortion) AND (Nurse OR Midwife OR Student) AND (Questionnaire OR Assessment)

The study population were nurses, midwives and nursing and midwifery students. The primary studies concerning the assessment of attitudes, perceptions and knowledge about abortion between the two groups and the efficacy and validity of these arguments within the degree programs were considered eligible. The studies included experimental or quasi-experimental studies and

observational studies. Since grey literature (i.e., unpublished conference proceedings or theses or dissertations) was not considered, other potentially relevant studies were not included in this review. The selection criteria listed below were met to identify suitable studies for the purpose of this review.

Inclusion criteria

- Literature from the last 10 years.
- Italian or English language.
- Experimental and observational studies: RCT (Randomised Controlled Trial), quasi-experimental research designs, pretest-posttest, cross-sectional.
- Nurses, midwives and corresponding university students.

Exclusion criteria

- Other healthcare professionals, physicians, medical students or students of other healthcare professionals.
- Grey literature.
- Qualitative and mixed-methods studies.

Data Extraction

In the first phase, the results obtained from the research were imported into a software for the management of bibliographic references and duplicates were eliminated. In the second phase, each article uploaded to the database was carefully and independently examined. Initially, they were analysed by reading their title and abstract and, according to the previously established eligibility criteria, the irrelevant ones were excluded, while those relevant for full-text reading were selected. Thanks to the in-depth reading, it was possible to exclude the articles that did not answer the

research questions. Two reviewers worked independently. The following data was collected for each article: study title, first author, year of publication, study sample and study design, objective, assessment and a summary of the results. The approach used to group the articles was thematic: the main objective of the thematic analysis is to identify similar concepts in the collected dataset, exploring their relationships of meaning. These reports can be used to further develop and corroborate the interpretation of theories that seek to investigate the phenomena studied [19].

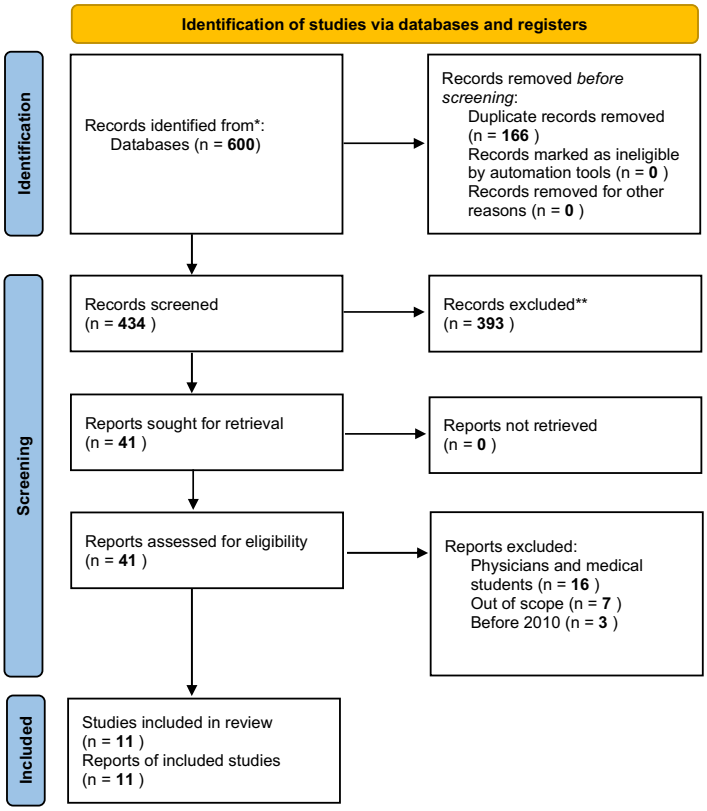
Quality Assessment

The quality of the studies was assessed usingthe Jadad Scale [20], focusing on methods for random allocation, double blinding, and withdrawals and dropouts. Total scores ranged from 0 to 5 points, where studies with 0-2 points were considered poor quality and those with 3-5 points represented high-quality evidence [20].

RESULTS

Initially, 434 articles were selected with duplicates removed (Figure1). Of these, 11 met the inclusion criteria and underwent the review process. The main information of the relevant articles was organised in a data extraction table (Table 2). Studies were conducted in 11 different countries: Belgium, Ghana, Iran, Brazil, Israel, Spain, Ethiopia, Finland, Canada, Pakistan and South Korea. This demonstrates a notable absence of literature in Italy. The studies included a sample ranging from a minimum of 74 to a maximum of 647 participants. The most recent one dates to 2020, while the oldest one dates to 2010. From the analysis it emerged that the barriers for abortion treatment are the lack or inadequate knowledge of the legislation and of the practical/technical phases of the intervention [21-24]. The possession of skills is often not enough as in the study by Romina et al. [22] where it emerged that there was no significant relationship between the knowledge of the law and the care performance of health professionals while a statistically significant relationship was

observed between their opinion of abortion and their active collaboration[22].



*Consider, if feasible to do so, reporting the number of records identified from each database or register searched (rather than the total number across all databases/registers).
**If automation tools were used, indicate how many records were excluded by a human and how many were excluded by automation tools.

Figure 1. - PRISMA 2020 flow diagram for new systematic reviews which included searches of databases and registers only.

Personal and religious beliefs have been considered to have a profound influence on opinion and behaviour, in some cases resulting in the inability to take care of the patient for fear of remorse [21; 25-27]. The presence of moral and/or religious values in health workers was significantly correlated with the occurrence of the request for conscientious objection (CO) [21-26].

TITLE, AUTHORS, YEAR	SAMPLE AND STUDY DESIGN	AIM	ASSESSMENT	RESULTS
Knowledge, attitude, and practices regarding miscarriage: a cross-sectional study among Flemish midwives. M. De Roose et al. (2017)	N = 647 midwives Cross-sectional study.	To examine the knowledge, attitude and practices (KAP) of midwives regarding miscarriage.	A semi-structured, self-administered questionnaire.	Several barriers regarding miscarriage care, e.g., lack of knowledge, incapability and fear of being overwhelmed by their own feelings, were found.
Midwifery tutors' capacity and willingness to teach contraception, post-abortion care, and legal pregnancy termination in Ghana. G. Voetagbe et al. (2010)	N = 74 midwives Exploratory study.	To assess the capacity and willingness of midwifery tutors to teach contraception, post abortion care and legal termination in Ghana.	Structured self-administered questionnaires.	Only 18.9% of the participants knew all the legal indications under which safe abortion could be provided. It was also revealed that personal and religious beliefs greatly influence teaching of abortion care.
Relationship of Knowledge and Attitude Towards Legal Abortion Laws with the Performance of Midwives in Qazvin, Iran S. Romina et al. (2019)	N = 122 midwives Descriptive-correlational study.	To assess the relationship of knowledge and attitude towards legal abortion laws with the performance of midwives in Qazvin, Iran.	Four questionnaires: demographic characteristics, knowledge, attitude, and performance questionnaires.	Half of the midwives had good knowledge about abortion laws; however, their attitude was mostly negative. In addition, their performance was reported as average. There was no significant relationship between the knowledge and midwives' performance, but a significant statistical relationship was observed between their attitude and performance.
Perspectives of healthcare workers on the morality of abortion: a multicentre study in seven Brazilian public hospitals. D. Barbosa Cacique et al. (2019)	N = 254 participants Quantitative, multicenter study	To evaluate the perspectives of physicians, nurses, social workers, psychologists and pharmacists on the morality of abortion.	The questionnaire "Mosaic of Opinions on Induced Abortion".	The inadequate knowledge on Brazilian abortion laws was the only determinant negatively associated with morality about abortion.
Nurses' and nursing students' attitudes towards late abortions. M. Ben Natan, et al. (2011)	N = 100 participants Descriptive study.	To compare the attitudes of nursing students and nurses working in maternity wards towards late abortions.	A self-report questionnaire constructed based on the literature review.	Differences in attitudes were found between nursing students and nurses. Their personal religious belief, as well as the reasons for practicing abortion were influential in determiningtheirattitudes.

Knowledge, attitude and practice (KAP) of health providers towards safe abortion provision in Addis Ababa health centers. E.M. Assefa (2019)	N = 405 nurses and midwives A cross-sectional study.	To assess health providers' knowledge attitude and their practice of safe abortion services.	A structured self-administered questionnaire.	The majority claimed to know the law; however, many failed to understand the details. Type of profession and seniority were important in providers' knowledge about abortion. Being male and having high knowledge significantly influenced providers' attitude.
An ethical issue: nurses' conscientious objection regarding induced abortion in South Korea. C. Mee Ko et al. (2020)	N = 167 Nurses Cross-sectional study.	To explore perioperative nurses' attitudes towards conscientious objection regarding abortion.	A self-reported survey method.	Religion, conscientious objection and nurses' right to conscientious objection were significantly associated with supportive attitudes toward abortion.
Opinions on conscientious objection to induces abortion among Finnish medical and nursing students and professionals. P. Nieminen et al. (2015)	N = 177 Nursing students N = 131 Nurses Descriptive study.	To study how Finnish nursing students and professionals assess conscientious objection.	A structured survey.	While the respondents mostly seemed to consider the continuation of adequate services important if conscientious objection is introduced, the viewpoint was often focused on the staff and surgical abortion procedure instead of the patients.
Health professionals' practices and attitudes about miscarriage. J. Engel et al. (2016)	N = 72 Nurses N = 38 Midwives Descriptive study.	To explore relationships between attitudes, beliefs and practices of healthcare professionals caring for women and families experiencing miscarriage and to identify gaps and barriers in follow-up services and supports.	The survey questionnaire was developed ad hoc for this study.	Attitudes, beliefs and behaviours of healthcare professionals influence access to care. They felt less knowledgeable and prepared about abortion and how to provide support. There is a need to develop knowledge and confidence to enable professionals to effectively care for women experiencing abortion.
Knowledge, attitude, and practices of mid-level providers regarding post abortion care in Sindh, Pakistan. M. Baig et al. (2017)	N = 116 nurses and midwives Cross-sectional study.	To determine the knowledge, attitudes and practices of mid-level providers regarding post abortion care.	The questionnaire was prepared by the research team in English, and it was reviewed for content validity by five experts.	There is a need for providing comprehensive training and mentorship to the groups of midwives about post abortion care and building strong networks to enable improved referral processes.

Healthcare professionals' attitudes towards termination of pregnancy at viable stage. E. Roets et al. (2020)	N = 92 nurses and midwives Descriptive study.	To study attitudes towards late termination of pregnancy of all tertiary nurses and midwives involved in late termination of pregnancy practice.	They adapted the questionnaire used in a similar previous study on neonatologists' and neonatal nurses' attitudes towards end-of-life decisions in the neonatal period.	nurses and midwives practicing late termination of pregnancy have a high degree of tolerance towards it, despite sociodemographic factors.

Table 2. Data Extraction Table.

In South Korea, where about half of the population declared themselves irreligious, Chung Mee Ko et al. [26] assessed the opinions of 167 nurses regarding CO; the majority replied that patients' rights to health care should take priority over nurses' right to refuse health care, concluding that the nursing profession should seriously consider whether it is necessary to insist on nurses' right to CO and should be actively involved in the determination process of new abortion laws and related policies [26]. Nieminen et al. [6] studied CO among Finnish nursing students and practitioners. Most of them seemed to consider the continuation of adequate services to patients in the event of the introduction of CO as crucial, while emphasising the surgical act over patient support. Despite their views and beliefs, health workers sometimes faced a conflict with their commitment to care; in the work of Ben Natan et al. [15], they stated that bioethical dilemmas, as well as the reasons for abortion, influenced their ability to actively collaborate during the termination of pregnancy [15]. Nurses attitude and ability to actively participate in late abortions were found to be strongly conditioned by the level of religious observance [21-22]. The study by Roets et al. [28] found that in several neonatal intensive care units in Belgium, healthcare workers practicing late abortion had a high degree of tolerance towards late termination of pregnancy, regardless of the patient's socio-demographic factors, so much so that they asked the institutions to provide for a change in legislation [28].

Ben Natan et al. [15], however, found that nursing students had more prejudices towards late abortions than experienced nurses, evidence in line with the study conducted by Assefa et al. [24] where it turned out that a predictor of a positive attitude towards VTP was seniority [24]. The role of health workers is very important, especially on a psychological level, even more so when they must help women to deal with a negative event such as a miscarriage. To this end, Engel et al. [27] suggested that health workers should receive specific training to be able to support women and their families [27]. Previous research has shown that university education programs do not provide the tools necessary to achieve the objectivity required in preparation for abortion and that this may have contributed to anti-abortion attitudes and misconceptions about legal regulations that are common among students[10]. Same results emerged from the work of Baig et al. [29] who studied the knowledge, attitudes and practices of midwives in post-abortion care services [29]. The work highlighted the need to provide comprehensive training and mentoring to midwives and students, building strong networks to enable the development of broader initiatives to reduce the stigma of abortion.

DISCUSSION

Although the total number of studies investigating abortion stigma among undergraduate students and nurses and midwives such as nurses and midwives is low, results indicate that knowledge, personal and religious beliefs significantly affect attitudes about VTP. This is in line with the findings by Madziyire et al. [10] where incomplete comprehension of abortion laws highlights the urgent need for providers education as a key step in reducing stigma and mortality associated with unsafe abortion [10]. Additionally, the lack of expertise evidenced by most of the studies, suggest that even nurses and midwives who have good intentions may unwittingly disseminate misinformation. One study underlined the fact that type of profession and seniority were important in providers' knowledge about abortion. Also, being male and having high knowledge significantly

influenced providers' attitude. The same findings were highlighted by Hammarstedt et al. [30] who stated that gynaecologists and midwives were less restrictive towards legal abortion the more experience they had, being especially influenced by recently obtained experience within the last year [30]. Claims of conscientious objection must be ethically justified, and not become a strategy to hide prejudices or fear of lawsuits and moral accusations. Such an instrument cannot be an obstacle for women to have access to abortion [31]. Humanized care in the abortion process is part of the reproductive and sexual rights of women, and ensuring it is a duty of all health professionals.

Abortion laws and practice differ between cultures, religions and countries. The Finnish healthcare system is relatively liberal regarding the right for induced abortion until the 12th gestational week. Despite lively discussion, there is no legislation in this country on the possibility of CO [32]. Post-abortion care is important especially in countries like Pakistan, where half of pregnancies are unintended. Demand for abortions is high in Jamaica, but many doctors refer clients to another provider. Patient assessment is good, but support services need improvement [33]. This has been reported in other surveys in other countries. In Ghana, for example, only 45% of surveyed physicians said that they would perform abortions, whereas another 36% said that they would provide counselling prior to abortion but not the procedure itself [33]. Women deserve a well-prepared, informed personnel and similarly, students deserve a thoughtfully inclusive curriculum that accurately addresses ethical topics, as most programs do not require sexual health courses as a part of their curriculum [34-35].

CONCLUSION

The role of the health professional assisting the woman who decides to undergo a voluntary termination of pregnancy is very important, especially in the phases before and after the intervention. Assistance must always be provided with respect for the woman's dignity, confidentiality and freedom of choice. Nurses need to provide a source of support for the woman by

establishing a relationship based on trust. Health professionals and students have different perspectives and attitudes toward VTP. Nurses and midwives have inadequate knowledge of procedures and legislation. It is important that the health professional realises the crucial importance of their role in the woman's grieving process to ensure good care.

Limitations of the study

Our study has some limitations that should be mentioned. In our analysis, only research articles published in English and Italian were included, which may have produced a language bias regarding the conclusion, as some scientific papers were published in other languages. Additionally, only studies published in peer-reviewed journals were included; this criterion was meant to ensure reporting quality but may mean that relevant grey literature was missed.

Practical implication

Nurse sneed to have adequate training in the bereavement context: they should know what interventions implement and what to avoid. The aim of the scoping review was to analyze the international panorama regarding abortion as a point of departure on which to develop an Italian study to compare legislation knowledge, attitudes and perspective differences among students and nurses and midwives. Therefore, it is recommended to implement university curricula on the topic.

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Conflict of interests

The authors declared no conflict of interest.

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DEVELOPMENT AND EFFECTIVENESS OF AUGMENTED REALITY-BASED LEARNING FOR HEALTH SCIENCE STUDENTS: A SYSTEMATIC REVIEW

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Review article

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ABSTRACT

Background and Objective: The rapid development of technology makes it easier for teachers to continue to be interactively connected with students, for example, by using Augmented Reality technology. We conducted this review intending to investigate the diffusion and the effectiveness of AR technology as a learning media for students from various health fields.

Materials and Method: This systematic review was conducted using the Preferred Reporting Items for Systematic Reviews and Meta-Analyses Protocols) Checklist. We used some databases including PubMed, Google Scholar, Wiley Online Library, and Sciencedirect to search relevant literature with eligibility criteria, namely articles published in the period 201-2021, and discuss the development of Augmented Reality -based applications for learning students in the field of health

Results: The studies included are on the development of AR-based learning applications carried out to improve the clinical skills of health students (Medicine, Nursing, and Midwifery). Various types of application development are carried out including anatomy, Endotracheal Intubation, AR Prototype for Medical Surgery, Intravascular Neurosurgery, injection skills, and Laparoscopic.

Conclusion: The use of Augmented Reality as a learning medium really helps improve the understanding and skills of students majoring in health sciences.

Keywords: Development, Augmented Reality, Health-Science, Students

INTRODUCTION

The use of technology in the education of health science students has evolved over the years. These trends are mainly evolving in response to the challenges facing health education [1]. The use of simulation in health education has been applied in the last 50 years [2]. Augmented reality technology is an example of virtual reality technology developing rapidly in nursing education [3].

Augmented Reality (AR) technology refers to virtual elements to display the actual physical environment to create mixed-reality files in real-time. It complements and enhances the perceptions that humans acquire through their senses in the real world [4]. AR provides various levels of understanding and interaction, which can help students in e-learning activities [5]. For example, in an AR learning environment, motivational factors related to attention and learning satisfaction are rated higher than slide-based learning [6]. Today's development of smartphone technology makes AR technology more accessible to students and lecturers; for example, mobile learning (m-learning) using AR has become a trend [7].

Simulations using AR technology can replicate real-world aspects so that a safe learning environment is available for students where they can practice until the expected skill competencies are achieved [8]. Simulation has become an integral part of nursing curricula [9], which involves using patient simulators, trained people, real-life virtual environments, and role play [10].

Technological advances over time have increased the realism and authenticity of the simulated environment, leading to increased reactions, satisfaction, learning attitudes, cognitive and affective outcomes among health students in general [11].

Clinical health services have also used AR because it provides an internal picture of the patient, without the need for invasive procedures [12–15]. Medical students and professionals need more situational experience in clinical care, especially for patient safety, so this shows that there is a real need to continue developing the use of AR in health education.

The focus of studies on AR in recent years [16,17] has highlighted the belief that AR provides medical students with rich contextual learning to help achieve core competencies, such as decision making, work for effective teams, and creative adaptation of global resources to address local priorities [18], AR provides more authentic and engaging learning opportunities for various learning styles, providing students with a more personalized and exploratory learning experience

[19]. The security of the patient will also be awake if an error occurs during skills training with AR [20].

Objective

This review was conducted to describe the development of AR technology as a learning medium for students from various health fields. This study is expected to be a reference material for teachers in learning strategies.

METHOD

Review Protocol

The research design is a Systematic Review, using the PRISMA-P 2009 (Preferred Reporting Items for Systematic Reviews and Meta-Analyses Protocols) Checklist.

Searching strategy

To search for literature using the PubMed database, Google Scholar, Wiley Online Library, and Sciencedirect using the keywords "Developing" AND "Augmented Reality" AND "Clinical practice" AND (Medical OR Nurse OR Midewifery) "College student".

We categorize the search into five categories that are considered to represent the topic of Augmented Reality development, namely AR typology, AR features and advantages, AR user perceptions, AR effectiveness in supporting learning, and AR design. Each category was analyzed to identify the best lessons, experiences, and evidence related to the design and development of AR.

Eligibility Criteria

The articles included in this review use the development method, with the subject of the trial being health students. In addition, the articles used are in English and full text, published in the period 2010–2020. Furthermore, the data obtained are then analyzed using quantitative descriptive methods and a narrative is produced that explains the study results.

The study results were documented to identify the effectiveness of using augmented reality in student health learning.

Study Type

The studies included in the criteria for this review are only limited to studies on the development of Augmented Reality technology for student learning in the health sector. Articles entered are in English, full text, and is not a thesis or dissertation.

Type of Participant/Population Target

The participants used were health students (Medicine, Nursing, Midwifery) who did clinical practicum (Clinical Skill). There are no restrictions on age, gender, level/semester, as long as participants do clinical practicum learning (clinical skills).

Article Quality

Quality assessment was carried out on six journals that met the inclusion and exclusion criteria using the JBI Critical Appraisal Checklist criteria. Journals are good if they meet at least 80%, moderate if they meet 50–80% and weak if they meet less than 50% of the criteria. Articles are used in good to moderate categories for further data synthesis, namely, grouping similar extracted data according to the results to be measured to conclude.

RESULTS

Literature Identification and Selection

There were 319 articles identified from four databases (Pubmed, Google Scholar, ScienceDirect, and Wiley Online Library) relevant to the review topic, where the assessment or screening was based on the title and abstract of the articles obtained. 66 studies were removed because they were duplicate. After screening the title and abstract, 219 studies were removed due to irrelevant theme, not AR topic, and proceeding types. At the eligibility stage, 28 studies were not fit the inclusion criterias.

Critical Appraisal

Based on the JBI Critical Appraisal Checklist, six pieces of literature are in the excellent category, and two pieces of literature are in the weak category.

To maintain the quality of the literature studies made, this review only uses six good-quality journals, and then data extraction will be carried out (Figure 1).

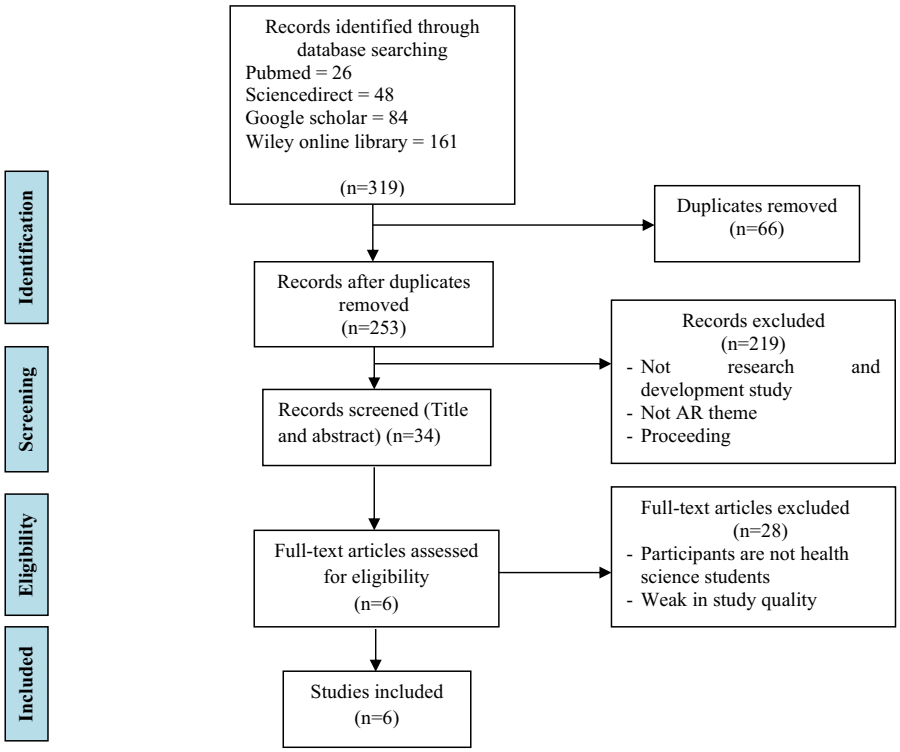

Figure 1. PRISMA Flowchart: Strategy for Searching for Development of Augmented Reality in Educational Situations for Health-Science Students

After bearing the assessment, screening, and feasibility, the authors agreed to include six studies in this systematic review of the literature. Furthermore, the extraction of data from each of the included literature we describe in the following table displays the critical information needed with the theme of the study.

Authors	Title	Purpose	Method	Sample	Results
1. Yukie Majima, Seiko Masuda, Takeshi Matsuda [21] JAPAN	Development of Augmented Reality in Learning for Nursing Skills	To develop a wearable learning support system that allows beginners to learn blood	Augmented reality equipment development	Nursing students	When practicing skills training, students can learn skills by following and imitating (tracing) expert technical drawings

		specimen collection skills			that are transparently displayed in front of them in real time. The prototype system verifies that training can be performed by overlaying the image on a simulated arm model.
2. Chien-Huan Chien, Chien-Hsu Chen, Tay-Sheng Jeng [22] CHINA	An Interactive Augmented Reality System for Learning Anatomy Structure	Using augmented reality (AR) technology to create an interactive learning system, which helps medical students to understand and memorize 3D anatomical structures easily with the support of real augmented reality.	Research and Development,	Medical Students (n=30)	The system is based on a complete skull structure that can be disassembled and reassembled. To be an effective training tool, the system must provide correct information to students, the skull includes the zygomatic bone, temporal bone, sphenoid bone, lower jaw, upper jaw, ethimoid bone, parietal bone, frontal bone, occipital bone, nasal bone, lacrimal bone , palatine, vomer,

					and inferior nasal concha. With clear pop-up labeling and interactive 3D models, students can easily get the associated position of each bone in different angles.
3. J. Ferrer Torregrosa, J. Torralba, M. A. Jimenez, S. Garcı´a, J. M. [23] Barcia	ARBOOK: Development and Assessment of a Tool Based on Augmented Reality for Anatomy	To build and develop ARBOOK based on TC and MRN images, surgery and images	Development of: ‘‘Augmented Reality Book (ARBOOK) Part I. Lower limb’’	Health Science students	To develop ARBOOK, it takes more than 100 TC images and the images are processed with OsiriX software and made 3D. The company LabHuman and VMV3D did the animation.
4. Zachary A. Drapkin, Kristen A. Lindgren, Michael J. Lopez, Maureen E. Stabio [24] USA	Development and Assessment of a New 3D Neuroanatomy Teaching Tool for MRI Training	To develop a computerized three-dimensional (3D) neuroanatomy teaching tool for identifying subcortical structures in magnetic resonance imaging (MRI) sequences of the human	A 3D model of the brain is created using MicroView to create an isosurface based on the grayscale values in a specific region of interest to create a 3D net that resembles the shape of a particular	Medical students	The end product is a set of digital 3D models of the internal brain structures that the user can freely rotate and zoom in on. Additionally, users can overlay this 3D model over coronal, sagittal, and axial MRI images of the same brain using the MicroView

		brain.	internal brain structure.		software. Users can enable/disable 3D objects so they appear or disappear as they scan through the brain MRI sequence. Furthermore, users can view 3D models separately (besides MRI) in 3D PDF documents. Users can rotate, zoom, add, or delete 3D objects one or more structures at once in this PDF document.
5. Maria Licci, Florian M. Thieringer, Raphael Guzman, Jehuda Soleman [25] SWITZERLAND	Development and validation of a synthetic 3D-printed simulator for training in neuroendoscopic ventricular lesion removal	To develop and validate a low-cost, patient-specific 3D printed simulator that can be used repeatedly to increase familiarity with endoscopic handling and to practice coordination skills.	Anonymous CT datasets from patients with enlarged CSF spaces were first downloaded from the image archiving and communication system (PACS) and further processed with Materialise Mimics medical segmentation	Neurosurgery Residents	Endoscopic ultrasonic resection of ventricular lesions using the Endoscopic Neurosurgical Pen (ENP) (Söring GmbH), an endoscopic ultrasonic aspirator whose length is guided through the GAAB endoscopic tract (28096 AGA, trocar: 28162 BS; KARL STORZ), equipped with an ultrasonic

			software (Mimics Innovation Suite v20; Materialise)		generator (SONOCA 300). ; Söring GmbH). This technique allows for simultaneous fragmentation and aspiration of the lesion, facilitating minimally invasive surgery for deeply located lesions.
6. Gazi Islam, Kanav Kahol, John Ferrara, and Richard Gray [26] USA	Development of Computer Vision Algorithm for Surgical Skill Assessment	To develop a video-based approach to observing long sequences of movements of the surgeon's hand and surgical tools in either surgical operations or surgical training, and then modeling and evaluating the skills demonstrated in the observations.	Research and development. Participants who performed Fundamental Laparoscopic Surgery (FLS) and their hand movements were recorded on video. Compute vision algorithm is in progress to analyze video.	Surgery residents	Computer vision has been implemented in two steps: 1) Glove/object detection: Hand and tool movement videos were analyzed using the Open Source Computer Vision (OpenCV) program. The program uses a histogram matching algorithm and quite accurately detects the purple glove from the hand motion video and the blue/pink object from the tool

					movement video (Figure 5). Gloves and detection tools are important because they reduce noise from other background motion captured on video. 2) Motion capture: After glove/object detection is complete, another Open CV program is used to capture motion data. The algorithm uses motion segmentation to show how the image changes over time. Handprints and object movement observations are performed and pixel data for each frame is captured to analyze the smoothness of the movement.

Table 1. *Data Extraction on Included Articles*

Characteristics of the studies included

The articles included in the inclusion criteria were six from several countries, including the USA as many as two articles, Canada 1 article, Sweden 1 article, Ireland 1 article, and Japan 1 article.

Overall, the article taken is a study on the development of AR-based learning applications carried out to improve the clinical skills of health students (Medicine, Nursing, and Midwifery). Various types of application development are carried out including anatomy, Endotracheal Intubation, AR Prototype for Medical Surgery, Intravascular Neurosurgery, injection skills, and Laparoscopic.

Critical Appraisal

Based on the JBI Critical Appraisal Checklist, six pieces of literature are in the excellent category, and two pieces of literature are in the weak category. To maintain the quality of the literature studies made, this review only uses six good-quality journals, and then data extraction will be carried out.

	Majima et al., 2019	Chien et al., 2010	Torregrosa et al., 2015	Drapkin et al., 2015	Licci et al., 2020	Islam et al., 2011
Is it clear in the study what is the 'cause' and what is the 'effect'?	Y	Y	Y	Y	Y	Y
Were the participants included in any comparisons similar?	Y	Y	Y	Y	Y	Y
Were the participants included in any comparisons receiving similar treatment/care, other than the exposure or intervention of interest?	NA	U	U	Y	U	Y
Was there a control group?	N	U	U	Y	U	Y
Were there multiple measurements of the outcome both pre and post the intervention/exposure?	Y	Y	Y	Y	Y	Y
Was follow up complete and if not, were differences between groups in terms of their follow up adequately described and analyzed?	Y	Y	Y	Y	Y	Y
Were the outcomes of participants included in any comparisons measured in the same way?	Y	U	U	Y	U	Y
Were outcomes measured in a reliable way?	Y	Y	Y	Y	Y	Y
Was appropriate statistical analysis used?	Y	Y	Y	Y	Y	Y

Table 2. *Summary of Critical appraisal based on JBI checklist*

AR system design

In Majimas' work, the learners can learn experts' nursing skills without moving their lines of sight. When practicing skills training, learners can learn skills by following and imitating (tracing) the images of experts' techniques that are dis-played transparently in front of them in real time. The prototype system verified that training is possible by overlaying images on a simulation arm model.

Chien and colleague The system is based on a complete structure of the skull which can be decomposed and reassembled. To be an effective training tool, the system has to provide correct information to the students, the skull includes zygomatic bone, temporal bone, sphenoid bone, mandible, maxilla, ethimoid bone, parietal bone, frontal bone, occipital bone, nasal bone, lacrimal bone, palatine, vomer, and inferior nasal concha.

Torregrosa and team developed an ARBOOK which includes a standard part of descriptive anatomy of the lower limb including osteology, arthrology, myology, nerve and vascular supply. Each part of the book includes bi-dimensional images and text about the muscles: origin insertion, vascular and nerve supply or action. It also includes a card for each anatomical figure that can be recognized by a digital webcam connected to a computer. The users can modify the actual position of the virtual structure by moving the card. To develop the ARBOOK, more than 100 TC images were needed and the images were processed by OsiriX software and 3D constructed. LabHuman and VMV3D companies performed the animation.

Drapkin study, an open-source T1 and T2 weighted simulated MRI dataset of a normal human brain constructed from a composite of 27 volumetric datasets of the same living subject was obtained from the BrainWeb simulated brain database. This dataset was viewed using GEHC MicroView software, version 2.1.2 (General Electric Healthcare, Little Chalfont, Buckinghamshire, UK). 3D models were constructed using MicroView to create isosurfaces based on gray scale values within a given region of interest to create a 3D mesh approximating the shape of a given internal brain structure. These computer graphic object composites were exported as a VTK PolyData file and edited using Maya software, version 2010 (Autodesk, San Rafael, CA) and were examined by two neuroanatomists and one neurologist for accuracy and compared to the Netter's Atlas of Human Neuroscience. The final edited versions were imported back into MicroView 2.1.2 as Wavefront OBJ files and overlaid on top of the original MRI

dataset. The final product was a set of digital 3D models of internal brain structures that can be freely rotated and zoomed by the user. To fabricate the 3D-printed models in Licci study, anonymized CT data set of a patient with enlarged CSF spaces was first downloaded from the picture archiving and communication system (PACS) and further processed with the medical segmentation software Materialise Mimics (Mimics Innovation Suite v20; Materialise). The DICOM CT data set consisted of native cross-sectional slices of bone and soft-tissue windows to display the relevant anatomical features. Further processing and segmentation of several anatomical structures according to tissue density (Hounsfield units) was worked out. The virtual cranial vault was designed with the help of the modeling software Materialise 3-Matics to be removable and equipped with realistic, neurosurgical burr holes for endoscopic access. The osseous skull was printed completely (2 parts) with a consumer Replicator+ 3D printer (MakerBot Industries) from polylactic acid (PLA; light gray), and the corresponding ventricle spaces were divided into 2 parts with a wall thickness of 3 mm in transparent PLA material. After printing a total of 5 skull models, the support structures were manually removed, and the two halves of the ventricular system were glued together. These were inserted into the skull model, and the cavity between the ventricular system and the bony skull was filled with 2-component silicone for stabilization.

In the Islam study, they proposed a novel video-based approach for observing continuous, long sequence of surgeon's hand and surgical tool movements in both surgical operation or surgical training, and then modeling and evaluating the skill demonstrated in the observation. Hand movement of entire surgical procedure is captured using inexpensive video camera. Video data of the tool movement can also be obtained for minimal invasive surgery (MIS). Both of the video data are analyzed using computer vision algorithm and then integrated to correlate with user's skill level.

For modeling the surgical skill, a stochastic approach is proposed that uses simple arithmetic mean and standard deviation of the processed data. Using this technique, observer-independent models can be developed through objective and quantitative measurement of surgical skills. Because of the non-contact nature of the tracking technique, the system is free from sterile issue and there is minimal interference with the skill execution, unlike other methods that employ instrumented gloves or sensor-based surgical tools.

AR for Nursing skills

There is one study that developed the teaching skills of nurses using AR technology. The skill learned in the study was performing intravenous injections [21].

AR for Anatomy learning

Three studies [22] developed learning methods based on AR technology. AR technology was used to create an interactive learning environment, which allows students to understand the 3D skull structure with visual support [14]. One of the studies gave their app the name ARBOOK, which can be presented in both, printed or electronic version. ARBOOK includes a standard part of descriptive anatomy of the lower limb including osteology, arthrology, myology, nerve and vascular supply [15]. Another study developed 3D Neuroanatomy Teaching Tool. The models were created of the ventricular system, thalamus, hypothalamus, pituitary gland, hippocam-pus, amygdala, fornix, caudate, putamen, globus pallidus, brainstem, cerebral peduncles, and cerebellar peduncles [16].

AR for Surgical training

There are two studies that develop training based on AR technology. The first study involved a neuroendoscopic ventricular lesion removal training [17], and the second study provided two laparoscopic graspers and performed the pegboard transfer exercise on the FLS [18].

DISCUSSION

It is undeniable that the advancement of Augmented Reality technology has had a significant impact on the health sciences. Professions requiring high precision and good psychomotor abilities certainly require more time to practice carrying out their actions. The presence of Augmented Reality technology in its various forms is proven to increase students' abilities and interests in dealing with the learning process.

Under certain conditions, especially during pandemic times where large-scale restrictions are imposed, direct meetings to carry out laboratory practicums are deemed possible, so there must be changes in strategies or effective learning methods for students in dealing with curriculum demands related to learning outcomes. A total of 6 eligible articles have been extracted to provide an overview of the development of Augmented Reality technology-based tools/tools in

many health science fields, including Medicine, Nursing,/Midwifery. From the article, the discussion will be described based on the field of development, software and hardware used,

Development area

Anatomy Learning

Two articles develop applications for learning body anatomy based on Augmented Reality [18]. Tried to develop a 3D interactive learning environment of bone structure with visual support. This application is equipped with pop up labels and interactive displays in 3D to make it easier for users to see the position of each bone at various angles. In addition, users are also facilitated with the help of each label with information about the bone so that students no longer need to open books to look for information about the designated bone. To use this 3D application, students/users need hardware devices such as laptops/PCs equipped with cameras and pointers. For testing this device, Chien and colleagues used 30 medical students who had never taken anatomy courses to hope that the participants' responses to this application would be of better quality. At the evaluation stage, participants revealed that the developed application was fascinating because it could provide a complete picture of the displayed bone structure and explain each pop-up label, making it easier to understand and memorize. In addition, another exciting thing is that the reassembled function in the application allows students to see the inner structure of the bone.

Another application developed by Torregrosa and colleagues in 2014 called ARBOOK (Augmented Reality Book) focuses on the anatomical structure of the lower extremities. For its development, 100 TC photos/images are needed, then the images are processed using OsiriX software and 3D object creation. For validation, the questionnaire compiled for the ARBOOK evaluation consists of the categories of task motivation and attention, autonomous work, comprehensive spatial orientation, and 3D interpretation. . Next, an expert assessment will be carried out. Application testing involves first-year health students who have never taken an anatomy course. The test results show a significant difference between learning using ARBOOK and conventional learning. As has been stated in previous studies that the use of virtual materials in anatomy learning can provide good benefits for student learning achievement, especially regarding motivation and independence [27,28].

Augmented Reality technology was also developed in Neuroanatomy learning for MRI exercises

developed by Drapkin and colleagues in 2015. The developed application makes the brain image display into a 3D shape. This 3D model begins by using MicroView to form a primary image in the form of isosurfaces and then form a 3D model similar to the shape of the actual brain. The graph is then exported in VTK PolyData file format and edited using Maya software. The editing results are then given to neuroanatomists and neuroscientists to assess the accuracy of the image shape and compared with images on the ATLAS neuroscience Netter. The final image is then placed on top of the actual brain image from the MRI. Next, we entered the pilot phase, which was conducted on participants who were medical students at level 1. The trials showed that this 3D neuroanatomy teaching tool effectively trains medical students to read brain MRI and effectively teach students to identify internal brain structures.

Surgery training

In contrast to learning the body's anatomical structure, surgical skills in surgery require hand-eye coordination, which can be achieved with continuous practice [29]. In surgery, one is not enough to see what other people are doing when performing surgery; that is, to become skilled, it is necessary to "watch and do" [30].

One of the six articles included in this review is an Augmented Reality-based simulation development study for Neuroendoscopic Ventricular Removal exercises [25]. In this development study, a 3D-printed model of synthetic body tissue was created. The idea is based on the limited material for practical surgery such as tumour removal. By using this 3D-printed model, it is hoped that it can accommodate all residents to do exercises repeatedly because this model is reusable.

Overall, the surveyed participants agreed or strongly agreed (Likert scores of 4 and 5) on the realistic nature of the anatomical model of the skull and ventricular system, the technical suitability of the model, the camera view, which was similar to the actual surgical view. Participants also agreed or strongly agreed that the content validity of the simulator is a valuable tool for enhancing surgical competence for neuro-endoscopic procedures that helps develop coordinating skills and represent an excellent practical exercise tool for ventricular tumour removal.

Other Augmented Reality-based surgical simulations are also included in this study. The development study conducted by Islam et al. [26] aims to create a video-based approach to

observing surgeon hands and surgical instrument movements in surgery and surgical training. The data is captured with a video camera and then explored using a computer vision algorithm. Furthermore, by analyzing the basic statistical parameters, observer-independent performs objective and quantitative measurements of the surgical skills of the trainees. Computer vision is done through two steps, namely Glove/object detection and motion capture. This application is very suitable for remote assessment of student skills. Between the rater and the assessed, it is possible not to be in the room together; this allows the assessed participants to be calmer in the face of the assessment. Students can also receive virtual and interactive demonstrations of surgical procedures with surgeons carrying out the surgery so that students can experience real situations in the operating room.

Nursing skills

Majima, et all [21] developed a practicum learning system for nursing students based on Augmented Reality, especially in the act of taking blood specimens. In certain types of blood vessels, beginners find it difficult to insert the needle. It is the basis for this research. Through this development, beginners can learn the "art" in the veins and imitate the images displayed in front of them. In injection skills education, both instructors and students are usually very interested in holding a syringe. However, in reality, the teaching given is limited to fixation, and the left finger technique is taught, which is tailored to the characteristics of each patient's blood vessels that are difficult to insert a needle. How to repair and lengthen unstable blood vessels has not been entirely taught.

When practising skills training, students can learn skills by following and imitating (tracing) expert technical drawings transparently displayed in front of them in real-time. The prototype system verifies that training can be performed by overlaying the image on a simulated arm model.

CONCLUSION

The use of Augmented Reality as a learning medium really helps improve the understanding and skills of students majoring in health sciences. The many choices of models in application development provide opportunities for researchers to continue to innovate. Augmented Reality-

based learning applications in the future become an absolute thing along with the increasing development of technology.

Limitation

Many databases not used in this review, such as Scopus, Ebsco, IEEE, and others, are very credible for searching literature/articles. It is due to limited access to these databases. The use of gray literature such as google scholar conducted carefully with agreement of all authors.

The author also has limitations in understanding the software and programming languages used in the articles reviewed, so the authors cannot further discuss the application development process in the six articles reviewed.

Recommendation

This study provides a broad overview of the Augmented Reality-based application development process so that it can be a reference material for future teachers or researchers to be able to innovate in the development of Augmented Reality-based learning applications, for example, in the process of guiding final project students, or multiplying nursing action tutorials that are currently available. Not yet fully available in the form of an Augmented Reality application.

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Conflict of Interest

The author declares there is no conflict of interest in this study.

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Sleep Quality Related to Vigilance Among Nurses in Hospital:

A Cross Sectional Study

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ABSTRACT

Introduction: Sleep quality disorders may cause a decrease in concentration and work performance of individual. It is also believed that nurses with work shifts as health workers may run into sleep quality disorders. Several researches have shown the relationship between sleep quality and the work performance of nurses in shifts duty. This study aimed to determine the relationship of sleep quality and vigilance of nurses in shifts duty in Raden Mattaher hospital Jambi.

Methods: A cross sectional study was performed recruiting 97 nurses working shifts in 3 inpatients wards of the Raden Mattaher Hospital Jambi. Socio-demographic details and data nurses alertness were collected using ad hoc questionnaires, data sleep quality were collected using the Pittsburgh Sleep Quality Index. Relationships among sleep patterns and alertness variables were investigated**.** Data were analyzed by univariate and chi-square test (CI 95%). Statistical analysis was performed using the SPSS version 16.0.

Results: Results showed an average of 29.4 years of age. Respondents were mostly female, married with working time <5 years. The results of the bivariate analysis show there was not relationship between sleep quality and vigilance of nurses who undergoing shifts in Raden Mattaher hospital Jambi with p-value 0.35.

Conclusion: There was not a relationship between sleep quality and vigilance among nurses undergoing a shift in patients' rooms

Keywords: Nurses, Sleep Quality, Wakefulness, Shift Work Schedule

INTRODUCTION

The prevalence of sleep quality disorders every year tends to increase, one of the causes is fatigue due to excessive work volume [1–4]. Poor sleep quality may cause adverse effects workers physical and psychological health leading to negative consequence workplace such as mistakes and reduced performances [5–8]. Health professionals have been known to experience fatigue at times. The condition has also long been associated with reduced patient safety [9,10]; decreased satisfaction, health and well-being [11–13]; more conflict among team members [14]; risk of needle stick injuries [14,15] and increased staff turnover [10]. Nurses, the largest group of healthcare providers, are prone to relatively high acute burnout, chronic fatigue, and recovery from fatigue after shift changes [16]. It is closely related to the demands they face throughout the working day, such as physical, mental, emotional demands and pressures associated with shift and non-standard work schedules. These factors place hospital nurses very vulnerable to burnout and its accompanying effects [17].

Nurses are professional workers who use a shift work system, so it can be ascertained that sleep quality disorders can also occur in nurses who undergo shifts [18–20]. Shift work has an impact on disturbances in circadian rhythms [21], and the main one being sleep pattern disturbances that cause sleep deprivation and fatigue [22,23].

Vigilance is degree of readiness of a person in responding to something [24] A person's level of vigilance is needed at work. Accidents occur as a result of decreased levels of alertness [25]. Variables that affect the level of alertness are monotonous state, level of sleepiness, psychophysiology, distraction, and work fatigue. In the variable of sleepiness level, there are 3 indicator variables, namely, circadian rhythm, sleep quality, and sleep time [26,27]. Research results show that 78% of nurses who work shifts experience changes in sleep quality. Furthermore, poor sleep quality is one of the contributing factors to medical errors that occur in health services [28–30]. The impact of poor sleep quality has been widely studied. Sleep absence is an important

predictive factor influencing the occurrence of various chronic diseases such as hypertension [31] and cardiovascular disease [32], and diabetes [33]. Nurses' inconsistent sleep habits can have a severe impact on their health as well as their ability to do their jobs [34,35].

METHODS

Trial design

A cross-sectional study was made at the Raden Mattaher Hospital Jambi.

Participants

The population in this study was all shift nurses in 3 inpatient installations at Raden Mattaher Hospital Jambi with a total sample of 97 people with the criteria of nurses in the inpatient installation, not leave, having at least a minimum nursing diploma.

Intervention

A study questionnaire was made to collect socio-demographic details and a 24 items questionnaire was implemented to collect nurses' alertness data. to four point scored Likert scales (always, often, sometimes and never) were used for the self-assessment of nurses' alertness before, during and after care activities, with particular attention to missed cares, mistakes and documentation management. Nurses' sleep quality was assessed using the Pittsburgh Sleep Quality Index (PSQI) tool [36]. Authors declare that the PSQI (Indonesian version) permission to use was obtained by the copyright property.

The PSQI is widely considered the gold standard tool for sleep patterns evaluation and quality of sleep assessment. It provides a global score ranged from 0 to 21 where scores higher than 5 means poor sleep quality. Furthermore, it provides 7 sub-scores assessing sleep patterns: subjective sleep

quality, sleep latency, sleep duration, habitual sleep efficiency, sleep disturbances, use of sleeping medications, and daytime dysfunctions. The PSQI questionnaire was translated into Indonesian and tested for reliability with Cronbachs alpha result of 0.753. Data were collected by three interviewers who were unknown to the participants before the study.

Blinding

In this study, 3 enumerators were used to collect research data. The previous enumerators did not know the participants because they were students who had been trained by the researcher before collecting data.

Ethical Consideration

Before carrying out data collection, the researcher first took care of ethical permission. The authors state that this study followed all ethical clearance processes and was approved by the health research ethics committee of Jambi Universitys Faculty of Medicine and Health Sciences.

Statistical methods

Data were presented as numbers or percentages for categorical variables. Continuous data are expressed as the mean ± standard deviation (SD), or median with Interquartile Range (IQR). The chi square test and Fisher's exact test were performed to evaluate significant differences of proportions or percentages between two groups. Particularly Fisher's exact test was used where the chi square test was not appropriate. All tests with p-value (p)<0.05 were considered significant. Statistical analysis was performed using the SPSS version 16.0 application.

RESULTS

Ninety-seven out of one hundred twenty-two nurses working shifts in 3 wards) qualified nurses

completed their studies. The results of this study presented in the table 1.

Variable	Mean±SD	N=97	(%)
Age	29.40±5.85		
> 21- ≤ 32		45	46.4
> 32- ≤ 41		44	45.4
> 41- ≤ 51		8	8.2
Gender			
Male		28	28.9
Female		69	71.1
Marital Status			
Married		69	71.1
Unmarried		28	28.9
Working of Period			
≤5years		55	55.7
> 5 years		42	44.3

Table 1. *Demographic Data of Nurses Undergoing Shift*

Most of respondents were female (71.1%), married (71.1%) and have working of period ≤ 5 years (55.7%). These results showed the average age of the respondents was 29.40 years, and the age range was between 21-51 years (SD 5.85).

Table 2 shows the results of the assessment of the seven components of the respondent's sleep quality, it was found that the component of the use of sleeping pills (using pills) had the highest score in terms of not using, namely 97.93%, the second highest score was the component of the subject's sleep quality, namely the subjective average of respondents stated 86.6% had good sleep quality. The results also showed that most of the respondents had sleep disturbances as much as 65%, and as many as 40% had sleep efficiency in the range of 75-84%.

That most nurses (86.6%) have good sleep quality based on subjective sleep quality. In the second component (sleep latency), most of the respondents (51.5%) had a sleep latency of 1-2 hours, and merely a small portion (7.2%) had a sleep latency of 5-6 hours.

Variable	N	(%)
Subjective sleep quality		
Very Good 0	5	5.2
Fairly Good 1	84	86.6
Fairly Bad 2	8	8.2
Very Bad 3	0	0
Sleep Latency		
Sleep Latency 0	11	11.3
Sleep Latency 1-2	50	51.5
Sleep Latency 3-4	29	29.9
Sleep Latency 5-6	7	7.2
Sleep Duration		
> 7 hours	5	5.2
6-7 hours	32	33
5-6 hours	29	29.9
≤ 5 hours	31	32
Sleep Efficiency		
> 85%	26	26.8
75-84%	40	41.2
65-74%	17	17.5
<65%	14	14.4
Sleep Disturbance		
Sleep Disturbance 0	16	16.5
Sleep Disturbance 1-9	65	67.0
Sleep Disturbance 10-18	14	14.4
Sleep Disturbance 19-27	2	2.1

Sleep Medication		
Never	95	97.9
Less than once a week	2	2.1
Once or twice a week	0	0
Three or more times a week	0	0
Daytime Function		
Dysfunction of daily activities 0	33	34
Dysfunction of daily activities1-2	44	45.4
Dysfunction of daily activities 3-4	19	19.6
Dysfunction of daily activities5-6	1	1

Table 2. *Sleep Quality Components: Subjective and Objective Sleep Quality measures*

In the third component (sleep duration), most of the respondents, as many as 32% of respondents, had sleep duration < 5 hours and only five respondents (5.2%) had sleep duration > 7 hours. Furthermore, 26.8% of the fourth component had a daily sleep efficiency > 85%, and only 14 respondents (14.4%) had a daily sleep efficiency of 14.4%. This result is slightly different from the previous study [49], which showed that 73.5% of nurses have sleep efficiency >85%.

Sleep quality in terms of sleep disturbance components shows that most of the respondents (67%) have sleep disorders with a score of 1-9, then for the use of sleeping pills, most of the respondents (97.93%) have never used sleeping pills at all.

Sleep Quality	**Vigilance**			**Statistical index**	
	Desirable	**Undesirable**	**Total**		
	N(%)	N(%)	N(%)	**OR (CI 95 %)**	**chi-square (p-value)**
Good	35 (71.4)	14(28.6)	49(50.5)		
Poor	30(62.5)	16(37.5)	48(49.5)	1.5	0.87
Amount	65(67.0)	32(33.0)	97(100)	(0.64, 3.15)	(0.35)

Table 3. *The Correlation Between Sleep Quality and Vigilance Among Nurses undergoing Shift*

The results of statistical tests obtained a p-value = 0.35, so it can be concluded that there was not a significant relationship between sleep quality and vigilance among nurses who undergoing a shift in the hospital.

DISCUSSION

Statistically it was found that in this study, there was no relationship between sleep quality and nurses' work alertness, although descriptively it can be reported that Nurses with good sleep quality tend to have good vigilance, and contrarily, nurses who have poor sleep quality tend to have less vigilance (see table 3). It significantly affects the productivity of nurses at work, where nurses in carrying out their work with good vigilance will work with good performance compared to nurses who are less alert.

Nurses who work night and rotating hours have been proven to have more trouble staying awake on duty and make twice as many mistakes as those who work day and evening shifts. More than 20% of workers in industrialized countries work shifts, and about 10% of them are diagnosed with sleep disorders [37]. Many factors affect sleep quality, one of which is shift work. Individuals who work shifts or shifts have difficulty adjusting to changing sleep schedules [6].

Poor sleep quality mainly occurs in nurses who use shift work systems. A study by Murphy *et al.*, [38] found that shift work was significantly associated with poor sleep quality after controlling for variables of age, gender, and length of work.

This study also found almost the same proportion of respondents between respondents who had good and bad sleep quality, while most of the respondents had the desired of vigilance, which was around 67%. A systematic review study conducted by Dall'Ora *et al.* [39] found that shift characteristics are related to employee performance, and having sufficient rest time positively affects employee vigilance. Furthermore, Wahyuni [40] found a decrease in vigilance in night shift nurses with a proportion of decreased vigilance of 71.1%. However, statistically, it was not proven

to have a significant effect. The factor that influences the level of alertness before office hours is the sleep quality. Lack of sleep results in a person's condition is less energetic and not enthusiastic [41]. We report that research data show that nurses predominately have a sleep latency of 1-2 hours, and only a small proportion (7.2%) have a sleep latency of 5-6 hours. Sleep latency is the length of sleep from start to fall asleep [42,43]. One of the factors that can affect sleep latency is bedtime habits that can disrupt a person's sleep and have an impact on increasing sleep latency [44].

This result is in line with the results of a previous study [45] that most respondents (60.3%) shift nurses experienced sleep disturbances less than once a week. Of all the sleep quality components, the sleep disturbance component had the highest mean of 1.44 with a standard deviation of 0.90 in a study of nurses undergoing shifts in Jordan [46].

Nurses' poor sleep quality leads to a number of negative health outcomes. Nurses suffering from poor sleep quality were more prone to develop burnout [47], depression and anxiety [48]. In addition, poor sleep could impair cognitive performance, such as concentration and memory, which may lead to poor work performance and even affect patients' safety [49-51].

Effective measures, such as education on sleep hygiene [48], yoga [52] and cognitive-behavioral therapy for insomnia [53], should be considered to improve nurses' sleep quality, quality of life, and patients' safety.

CONCLUSION

The current study found that sleep quality was not a significant factor contributing to nurses' vigilance and medical error. Nevertheless, we still suggest that hospital managers should apply a 15-30 minute rest period during work shifts for nurses and pay attention to work rotation times, especially night shifts as a strategy to increase vigilance to prevent fatigue, sleepiness, and work errors.

LIMITATION OF STUDY

This study was only conducted in 3 hospital wards, so it cannot be compared with the same conditions in different hospitals. No intervention was carried out in this study to improve nurses' sleep quality and increase alertness while working. Other factors that influence Precautions, such as lighting conditions, environment, pills, caffeine, and other ingredients, were not studied.

Authors' contribution

All authors equally contributed to preparing this article.

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Conflict Of Interest

The authors declare that there was no conflict of interest in this research.

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Technological innovations in cardiac electrostimulation:

Professional updating and cultural evolution of nurses

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Commentary

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Cardiology made enormous advances in the treatment of extremely severe diseases such as heart failure. Specifically, interventional cardiology has been enriched, over the years, with increasingly complex aids that have contributed in improving the quality of life and survival of patients suffering from this disease. These advances in technique compel the interventional cardiologist being constantly updated on new procedures and therapy. As a result, both the ward nurses and those supporting the cardiologist in the surgery room, must acquire the knowledge that allows them to be always in step with the fast-changing times.

The aim of this commentary is to underlining the importance of a continuous updating of nurses by emphasizing that their role has been changing over the years and that these professionals, along with the physicians, must stay up-to-date regarding technological innovations, within the limits of their specific skills.

Keywords: Heart failure; Cardiac Contractility Modulation; Nurse updating

Introduction

Nurses of interventional Cardiology unit must acquire more and more skills because of the evolution of technology and subsequently of the complexity of implantable devices. The acquisition of skills is a continuous process and requires constant effort. Therefore, not only the physician, who remains the main operator, must constantly update himself on new techniques and procedures, but also nurses who assist him in and out the operating room, must acquire the scientific mentality that allows them to get highly specialized technical knowledges. In the field of interventional cardiology, advances in technology made care approach increasingly complex, before, during and after an interventional procedure. In such a large and constantly evolving field, nurses should necessarily acquire all the skills for the assistance process and should consequently have the ability to analyze, decide and execute the most appropriate and safe care services, supported by solid evidence of effectiveness. Cardiac Contractility Modulation (CCM) therapy, delivered by OPTIMIZER SMART®, is part of the non-pharmacological therapy for treatment of heart failure with reduced or moderately reduced ejection fraction, in symptomatic patients (NYHA class II-IV) despite optimized medical therapy [1]. It is an important technological innovation for the treatment of this severe disease. The CCM acts by delivering a high-energy non-excitatory bipolar signal, synchronized with local electrical activity, in the ventricular absolute refractory period, by means of two active-fixation leads, placed on the IVS and spaced from each other by no more than 1 cm. Both leads can have a sensing and therapy delivery function. In the implantation phase, is very important to be meticulous in positioning the leads so that they have a sensing greater than 4 mV at the PSA. In the short and long term, this treatment increases left ventricular contractility. As result, the CCM therapy improves clinical status, functional capacity, quality of life and prevents hospital admissions of carefully selected patients [2]. The selection of the patient to whom implant this device, takes place by evaluating his quality of life and the frequency of hospitalizations for heart failure. Quality of life is assessed by the MLWHFQ questionnaire. A score over 30 in a patient in

NYHA II class is indicative of severe lack of autonomy and is a significant element in the decision to implant such device (Fig. 1). The interventional procedure does not differ from those implemented for the implantation of other cardiac devices. The difference is about the periodic checking of the implanted device, performed by the cardiologist with the help of a biomedical engineer, who analyze the data by a portable computer loaded with a specific software, by which, electrical parameters and therapy delivery time are tested. The therapy delivery time must be at least 7 hours per day and a parameter to pay attention to is the percentage of therapy delivery, which must be as high as possible and not fall below 80%. [3].

Discussion

Many papers describe implantation procedure and the role of nurses [4-5-6]. After the surgery, nurse takes the patient back to the ward and performs an ECG. Nurses who record the ECG should be able to understand whether the device is properly working or not. The typical ECG of a patient implanted with a CCM device shows a ‘spike’ in the absolute refractory period of cardiac cycle: the ‘R wave’ of QRS complex. (Fig. 2). Nurses should know that the presence of a ‘spike’ on the ‘R wave’ of the QRS complex is not a non-capturing sign or a sensing defect: it is the proper operating of the device itself. This knowledge is important in order not to alarm the patient and inappropriately alert the cardiologist. The day after implantation, nurses should check the surgical wound, evaluate whether there is a hematoma or not and if medical attention is required. Then the patient can undergo to a chest x-ray to evaluate the position of the leads and to exclude a PNx, if the subclavian vein puncture has been performed without echo guide [7]. OPTIMIZER SMART® is powered by a weekly-rechargeable battery through an induction mini-charger, rechargeable itself, delivered to the patient. At bedside, physician and nurses instruct the patient, with the assistance of biomedical engineer, regarding its use. It is important, in this phase, that nurses as well assist the patient and reassure him about the easiness of device recharging procedure. Patient should charge

the device battery weekly and it is advisable to suggest him to always recharging the device on the same day and at the same time, specifying however that it is not a life-saving device, but an electrical therapy provider. This avoids the worry of postponing or anticipating the charging process. Nurses get involved in many ways in interventional procedures: they manage the pre-operation care and technical setup; help the physician in the surgical room; check the correct functioning of the device and, if complications are detected, alert the physician and look for a quick solution to them. In order to perform these tasks, nurses should know how the device acts and which complications might occur after intervention, so they can be able to deal with them without any anxiety. In 2014 in order to assess critical care nurses' knowledge and practice regarding implantable cardiac devices in Egypt, was published a paper by which authors showed that Critical care nurses have inadequate knowledge and practice regarding implantable cardiac devices [8]. Unfortunately, things have not changed over the years. In 2017, in order to assess cardiology nurses' knowledge and confidence in providing education and support to ICD recipients, Steffes et al. published a paper. The result was surprising: authors proved that the ICD knowledge of US nurses in 2015 was similar to that reported in the United Kingdom in 2004 [9-10], with limited knowledge about the complexities of modern ICD devices. Such deficits in knowledge may affect the quality of education provided to ICD recipients in preparing them to live safely with an ICD. A survey published in 2021 by Fitzimons et al, showed that many nurses felt not being living up to their job and emphasize the importance of in continuing cardiovascular nursing education and of their professional updating[11]. Nowadays, the nurses should be a complete professional and should have the technical and care skills required to obtain the best result in interventional procedures, as regard the new generation devices as well. Consequently, the interventional cardiology/electrostimulation nurses are required to have not only care skills, but also the knowledge of devices. In CCM therapy, electrical stimulation is delivered to the cardiac muscle during the absolute refractory period. In this phase, the electrical signals activate the mobilization of calcium ions in the cardiomyocytes. The

mechanism of action of the CCM can be summarizing as follows: CCM signals applied during the absolute refractory period cause an increase of cytosolic calcium during the systole, resulting in improving the cardiac contraction [12]. The mechanism of action explains the typical ECG of a patient with CCM and the nurses must be able to recognize it in order not urgently alert the doctor. This is the reason why nurses as well should know it. Furthermore, nurses have to be aware about the effects of such therapy. A few seconds after the delivery of the therapy, normalization of the activity of the proteins that are involved in regulation of intracellular calcium, occurs. After a few hours, there is a progressive normalization of the abnormal expression of fetal gene program, which is a characteristic of heart failure. Reverse remodeling has been demonstrated within 3 months, with reduction of mechanical and neuro-hormonal stress and increase of left ventricular ejection fraction. CCM restores the structure and function of damaged cells to their normal state [13]. Due to this action, CCM improves clinical outcomes in terms of exercise tolerance and QOL at 6 months [14], and this is the reason why guidelines published in 2016 and the Consensus HFA ESC 2019, state that CCM can be considering in selected patients with HF [15]. In 2020, Giallauria et al. evaluated the three currently available randomized controlled trials of CCM therapy for treatment for patients with heart failure. This comprehensive meta-analysis made the authors conclude that CCM provides statistically significant and clinically meaningful benefits in measures of functional capacity and HF-related quality of life [16]. The latest ESC guidelines on heart failure (2021) suspend the judgment on CCM (*'under evaluation'*), since its effect on the long-term mortality rates of patients with heart failure has not evaluated yet in a randomized controlled multicenter trial [17]. However, it is noteworthy that some preliminary studies showed that CCM improves clinical outcome in terms of exercise tolerance and QOL. Besides, it improves long-term survival, compared with the mortality predicted by the Sattle Heart Failure Model Score and reduces hospitalizations by 75%. [18]. Due to these considerations, we highlighted that the cardiology nurses have not an adequate preparation. Because of this, patient care inevitably suffers. This is the reason why we believe that it

is mandatory for the nurse to be updated both about procedures and about devices. They should have adequate knowledge about the indications and the mechanism of action of devices. Furthermore, as regard the CCM, it is mandatory for the cardiology nurses, the knowledge of the typical ECG of a patient implanted with such device.

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There are no competing interests for this study.

Authors' contribution

Dr. C. Uran: Investigation, conceptualization, resources, preparation and translation of the paper. Dr. M Falco; P. Piscitelli; Dr. G. Bombace; Dr. P. Eterno: Preparation

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MINNESOTA LIVING WITH HEART FAILURE® QUESTIONNAIRE

The following questions ask how much your heart failure (heart condition) affected your life during the past month (4 weeks). After each question, circle the 0, 1, 2, 3, 4 or 5 to show how much your life was affected. If a question does not apply to you, circle the 0 after that question.

Did your heart failure prevent you from living as you wanted during the past month (4 weeks) by -	No	Very Little				Very Much
1. causing swelling in your ankles or legs?	0	1	2	3	4	5
2. making you sit or lie down to rest during the day?	0	1	2	3	4	5
3. making your walking about or climbing stairs difficult?	0	1	2	3	4	5
4. making your working around the house or yard difficult?	0	1	2	3	4	5
5. making your going places away from home difficult?	0	1	2	3	4	5
6. making your sleeping well at night difficult?	0	1	2	3	4	5
7. making your relating to or doing things with your friends or family difficult?	0	1	2	3	4	5
8. making your working to earn a living difficult?	0	1	2	3	4	5
9. making your recreational pastimes, sports or hobbies difficult?	0	1	2	3	4	5
10. making your sexual activities difficult?	0	1	2	3	4	5
11. making you eat less of the foods you like?	0	1	2	3	4	5
12. making you short of breath?	0	1	2	3	4	5
13. making you tired, fatigued, or low on energy?	0	1	2	3	4	5
14. making you stay in a hospital?	0	1	2	3	4	5
15. costing you money for medical care?	0	1	2	3	4	5
16. giving you side effects from treatments?	0	1	2	3	4	5
17. making you feel you are a burden to your family or friends?	0	1	2	3	4	5
18. making you feel a loss of self-control in your life?	0	1	2	3	4	5
19. making you worry?	0	1	2	3	4	5
20. making it difficult for you to concentrate or remember things?	0	1	2	3	4	5
21. making you feel depressed?	0	1	2	3	4	5

Figure 1. *The Minnesota questionnarie 21 items*

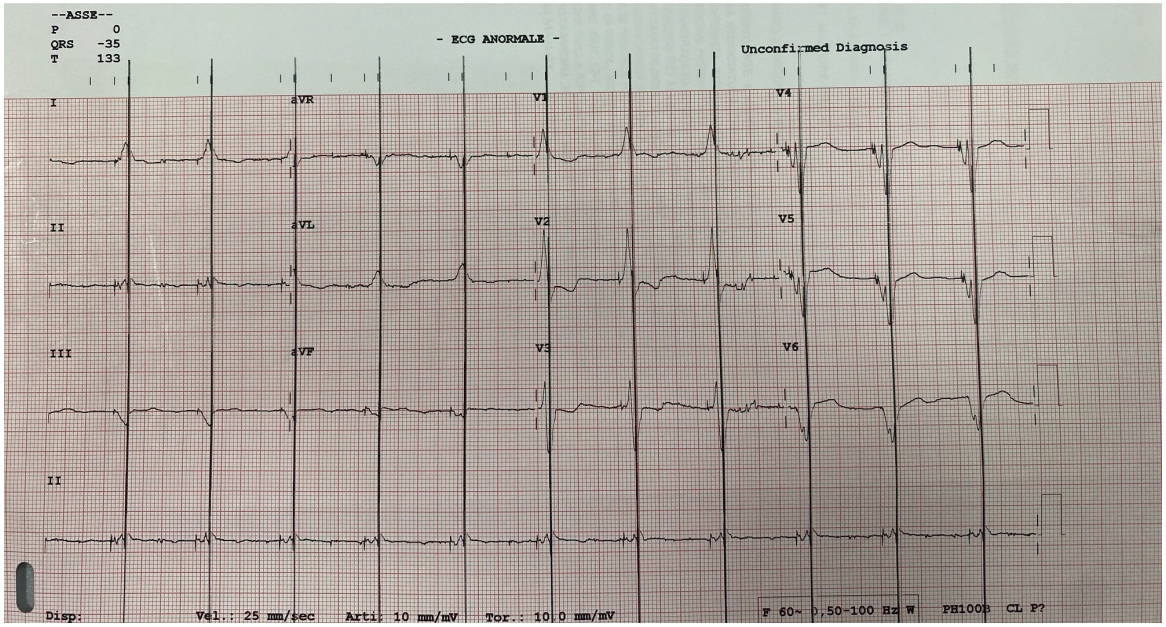

Figure 2. *ECG of a patient with a CRT-D system, implanted with the CCM device*

ECG	Electrocardiogram
ESC	European Heart Association
HF	Heart failure
HFA	Heart Failure Association
ICD	Implantable Cardioverter Defibrillator
IVS	Interventricular Septum
MLWHFQ	Minnesota Living with Heart Failure Questionnaire
NYHA	New York Heart Association
PNx	Pneumothorax
PSA	Pacing System Analyzer
QoL	Quality of life

Table of abbreviations

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The Influence of Consuming *Sauropus Androgynus L. Merr, Moringa Oleifera Lam, and Vigna Cylindrica (L) Skeels* on Breastfeeding Mothers: Randomized Controlled Trial

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Original article

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Background: Much scientific evidence shows the benefits of L. Merr, Moringa Oleifera Lam, and Vigna Cylindrica (L) Skeels. The leaves of these plants can be easily found in almost all of Indonesia and are a local food ingredient for Indonesian people. This study analyses the effect of the consumption of Sauropus Androgynus L. Merr, Moringa Oleifera Lam, and Vigna Cylindrica (L) Skeels on increasing the production of breastmilk while breastfeeding.

Methods: The research design used in this study was one group pretest-posttest design. The sample was taken by purposive sampling with 37 breastfeeding mothers with children aged <40 days who met the inclusion criteria. The intervention was to provide products processed as daily dishes, namely " sayur bening "with a composition of 150 grams of each plants (L. Merr, Moringa Oleifera Lam, and Vigna Cylindrica (L) Skeels), then measure the milk production by looking at how much the amount of breast milk increases after consuming the product for five days in a row, with the same seasonings. Data analysis using Wilcoxon test.

Results: The number of respondents in the study was 37 people with an age range between 19-39 years, with a child age range of 4-40 days, and the number of children owned by the respondents between 1-5 people. Analysis using the Wilcoxon test, it was found that all respondents (100%) experienced an increase in breastfeeding with p-value < 0.05, the same result was also shown in the comparison of birth weight with children's body weight after being given the intervention.

Conclusion: Consumption of Sauropus Androgynus L. Merr, Moringa Oleifera Lam, and Vigna Cylindrica (L) Skeels was statistically proven to differ in the amount of breast milk expenditure significantly. Kathree processing is adapted to everyday cooking so that postpartum nursing mothers can easily accept the taste and appearance.

Keywords: Sauropus Androgynus L. Merr, Moringa Oleifera Lam, Vigna Cylindrica (L) Skeels, Breastfeeding, Mothers

Introduction

Breast milk makes the world healthier, smarter, and more equal [1–3]. The benefits of breastfeeding can reduce the incidence of infection, increase intelligence, possibly protect against overweight and diabetes, and prevent cancer for mothers [4,5]. The Lancet report on maternal and child nutrition states that 800,000 child deaths can be prevented through breastfeeding and calls for breastfeeding support, but says that almost worldwide report a decrease in the rate of exclusive breastfeeding, including Indonesia. The reasons why women avoid or stop breastfeeding range from medical, cultural, and psychological reasons to physical discomfort and discomfort [6,7]. These things are not trivial, and many mothers without support turn to bottle feeding of formula. Multiplying across populations and involving multinational commercial interests, this situation has catastrophic consequences at the level of breastfeeding and the next generation's health [8–10].

The mother's nutritional status during breastfeeding is an effect of the nutritional status of the mother before pregnancy and during pregnancy (weight gain during pregnancy). Maternal weight gain during pregnancy depends on the nutritional status of the mother before pregnancy [11,12]. One of the most common factors associated with the failure of exclusive breastfeeding is the factor of breastfeeding that has not come out in the first week after delivery and the mother's view that her milk production is not enough. Exclusive breastfeeding for six months is one of the global strategies to improve infants' growth, development, health, and survival. Although there are many benefits of exclusive breastfeeding for babies, mothers, families and communities, its coverage is still low in various countries, including Indonesia [13,14]. The Basic of Health Research 2010 data shows that the coverage of exclusive breastfeeding for infants up to six months is only 15.3% [10].

Hereditary habits that have become local cultural wisdom in the Danau Sipin District area are various vegetables that are believed to increase breast milk, including banana hearts, long bean leaves, katu leaves, moringa leaves and many more. While in 2019, Lake Sipin was chosen to be the winner of the National Clean and Healthy Behavior Competition, the vegetables above have

become regional local wisdom, with a variety of dishes derived from moringa, katu, long beans, kates. Danau Sipin District consists of 5 Kelurahan. There is 1 community health centre, namely the Putri Ayu Community Health Center. For January - September 2019, the target number of exclusive breastfeeding was 458 mothers, who gave exclusive breastfeeding 256 mothers, who did not give exclusive breastfeeding 49 for various reasons, while those who did not visit 153.

Various studies have been conducted to increase breast milk, including by giving oxytocin massage and the results are also significant. The culture of eating various vegetables such as katu leaves, Lembayung leaves (long beans) and banana flower, moringa and green beans related to their function as lactagogues is still focused on extracting and scientifically proving the function of long bean leaves and katu, moringa and kates leaves as lactagogue Traditionally processed form, namely as clear or boiled vegetables, stir-fry [5,15].

Danau Sipin sub-district in the work area of Putri Ayu Community Health Center which has a work area of 5 sub-districts. There is one coordinating midwife who is ready to participate in this research. Likewise, the head of the Driving the Empowerment of Family Welfare and his team and cadres. The leaves of long beans, katuk, and moringa are very potential to be developed both in terms of their benefits as lactagogues and the nature of these plants, which are very easy to grow with a short harvest life. Its use is still limited among Javanese and Malay tribesmen, with the processed form only as clear vegetables or boiled alone or mixed. However, not all villages have Moringa leaves, or Long bean leaves, all the time.

So far, breastfeeding mothers only consume L.Merr leaves which are used as laktagogums, whereas L.Merr leaves or also known as lavender leaves have greater benefits. Likewise, Moringa Oleifera Lam, and Vigna Cylindrica (L) Skeels leaves both contain laktagogums and saponins as well as polyphenols that can increase prolactin levels. Prolactin is a hormone that plays a major role in breast milk production [16-20]. Therefore, the development of functional supplementary food products for nursing mothers containing kathree leaves, namely Lembayung, katu, and moringa in

the form of ready-to-eat products.

This study aims to analyze the effect of consumption of Kathree (Sauropus Androgynus L. Merr, Moringa Oleifera Lam, and Vigna Cylindrica (L) Skeels) on increasing the production of breast milk in postpartum mothers.

Materials and Methods

Trial design

The Randomized Controlled Trial with design of this study was one group's pretest-posttest design, namely a research design that contained a pretest before being given treatment and a posttest after being given treatment.

Participants

The sample is mothers who have babies aged < 40 days in the working area of Putri Ayu Health Center. Sampling was done by purposive sampling with 37 mothers who breastfed children aged <40 days who met the inclusion criteria. The inclusion criteria for the sample were healthy mothers and babies, primigravida mothers, while the exclusion criteria were mothers suffering from depression. The sample of this study was randomly selected from 105 postpartum mothers who visited the community health center polyclinic.

The data used in this study is secondary data from the documentation of quarterly reports at the Putri Ayu Health Center and the Jambi City Health Service which was carried out in December 2019-September 2020. The dependent variable of the study was the production of breast milk, measured by criteria 1) Frequency of urination, newborns who get enough Breast milk then urinate for 24 hours at least 6-8 time. 2) Characteristics of urination, clear yellow urine color. 3) Frequency of bowel movements, bowel patterns 2-5 times per day. 4) Color and characteristics of bowel movements, in the first 24 hours the baby excretes bowel movements which is dark green, thick and

sticky, which is called meconium and beyond is golden yellow, not too runny and not too thick 5) The number of hours of sleep for babies who have enough breast milk for 2-4 hours. 6) Baby's weight. Signs of adequacy of breast milk in infants are: weight gain of more than 10% in the first week. As explained earlier that the questionnaire on breast milk production uses 6 question items, if the respondent answers yes, he will be given a score of 1 and if he answers no, he will be given a score of zero. Breast milk production questionnaire using the Guttman scale with a score range of 0-1. Breast milk production is said to be smooth if at least 4 of the 6 indicators observed in infants. If the value is less than 4 it is said no smoothly.

Intervention

Participants were given an intervention in the form of food consisting of 150 grams of each plant (L. Merr, Moringa Oleifera Lam, and Vigna Cylindrica (L) Skeels (Herbarium Medanense (Meda). The dose of food (vegetables) was determined based on the daily requirement of vitamins and minerals for postpartum mothers, namely 150 grams of vegetables consumed. 3 times a day for 7 days, if toxic effects occur during consumption of vegetables, the mother and baby will be referred to the clinic. Input (Q1) is the production of breast milk, then the mother is given Kathree vegetables (X) as an intervention, after that comes the output (Q2) in this case changes in breast milk production.

Randomisation

Sample selection using a simple random method

Blinding

In this study, 3 enumerators were used to collect research data. The previous enumerators did not know the participants because they were students who had been trained by the researcher before

collecting data.

Statistical methods

Data were presented as numbers or percentages for categorical variables. Continuous data are expressed as the mean ± standard deviation (SD), or median with Interquartile Range (IQR). The data obtained were analyzed by univariate and bivariate, from the normality test (Kolmogorov Smirnov) obtained abnormal data so that the analysis used the Wilcoxon test.

All tests with p-value (p)<0.05 were considered significant. Statistical analysis was performed using the SPSS version 16.0 application.

Ethical Consideration

Registered prospective respondents have signed an informed consent and there is no incentive to participate in the study and the anonymity of participants is guaranteed. Before carrying out data collection, the researcher first took care of ethical permission. The authors state that this study followed all ethical clearance processes and was approved by the health research ethics committee of Ministry of Health Polytechnic of Jambi, Indonesia, and registration number: LB.02.06/2/18/2019.

Results

The results of the univariate analysis, which aims to determine the frequency of each variable studied, can be seen in the table 1.

Table 1 shows that most respondents in group aged 20-30 years amounted to 14 people (37.8%).

Majority of respondents'education level is low education as much as 70.3%, the dominant occupation of respondents is housewives as much as 51.4%.

Characteristics	n	%
Age		
20-30 y.o	14	37.8
30-40 y.o	13	35.2
Education Level		
High (> High School)	11	29.7
Low (< High School)	26	70.3
Occupation		
Housewives	19	51.4
Civil servant	11	29.7
Entrepreneur	7	18.9

Table 1. *Frequency Distribution of Respondents' Characteristics*

The normality test results showed that the data on the measurement of the amount of breast milk expenditure before and after the intervention was abnormal data. The results showed that all respondents (100%) experienced an increase in breastfeeding with p-value < 0.05. Statistically, there is a significant difference between before giving Kathree and after. The results can be clearer as in the table below.

Expenditures	Median (Q1- Q3)	Wilcoxon test
Before intervention	4 (2-4)	0.000
After intervention	5 (5-6)	

Table 2. *Wilcoxon Test Analysis Results about Breast Milk Production*

According to the Wilcoxon test, 37 respondents experienced an increase in the amount of milk expulsion. The results of this study prove that dietary factors such as L. Merr, Moringa Oleifera Lam, and Vigna Cylindrica (L) Skeels, with a p-value < 0.05. Based on the results of this study, out of the five respondents, the baby's body weight increased by around 300 - 400 grams for 7 days of administration of purple leaf. Thus it can be stated that the provision of processed mauve leaves affects the increase in breast milk production for postpartum mothers.

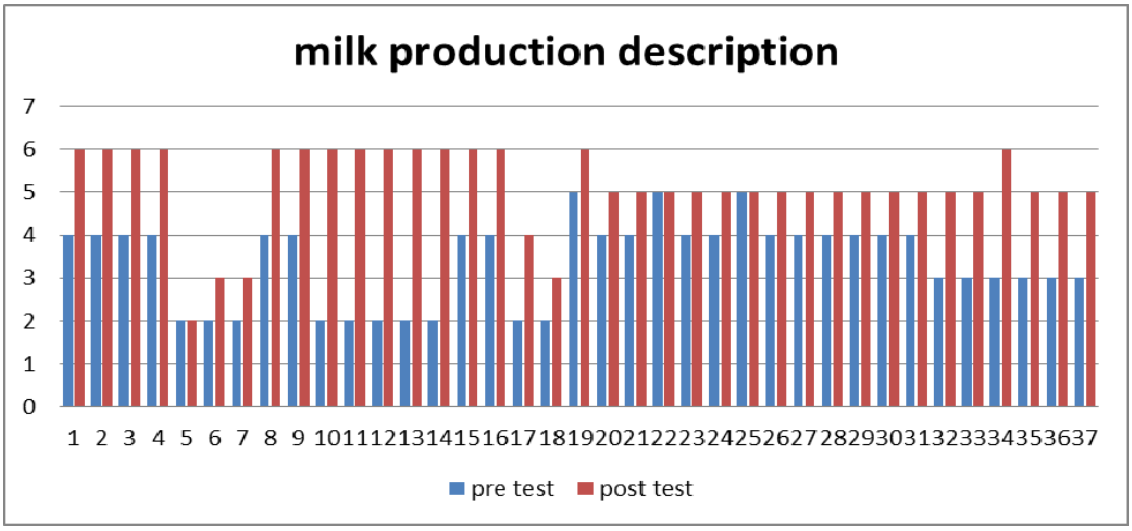

Figure 1. *Description of milk production*

Figure 1 shows the fluctuation of post partum breast milk production before giving Kathree and an increase in milk production after the intervention.

Discussion

This study proves that food factors have a significant effect on breast milk production in addition to psychological factors and baby's suction power. Kathree gift which consists of Moringa leaves, katuk leaves, and long bean leaves, also known as mauve leaves.

Moringa oleifera Lam (synonym: Moringa pterygosperma Gaertner), commonly known as Moringa, is the most popular Moringacae clan species. Moringa oleifera grows in the form of three and is long-lived (perennial) with a height of 7-12 meters. It also has sympodial branches that point upward or oblique and tend to grow in line and lengthwise. Can grow both in the lowlands and highlands to an altitude of ± 1000 m above sea level, often planted as a barrier or fence in the yard or field.

Moringa oleifera is a local food ingredient that can be developed in the culinary of breastfeeding

mothers because it contains phytosterol compounds that function to increase and accelerate milk production (lactagogum effect). Increased breast milk production, increased nutritional intake of infants, which is expected to impact the nutritional status of infants [21-22].

Moringa leaves contain high amounts of vitamin A, vitamin C, B vitamins, calcium, potassium, iron and protein which are easily consumed and assimilated by the human body. In addition, Moringa is also known to contain more than 40 anti-oxidants [23]. This content is needed by postpartum mothers who breastfeed. Breastfeeding mothers need more nutrients than during pregnancy. During breastfeeding, she needs extra energy to restore her health condition after giving birth, daily activities such as breast milk formation. In the first month after giving birth, milk production is generally abundant so that it comes out a lot and is sucked by the baby, so the mother is hungry and thirsty faster. In order for the number of calories to be balanced with the needs, adequate nutrition is needed because the energy will be reprocessed to form breast milk. During breastfeeding, the mother produces about 800-1000cc of breast milk [9,24,25].

Breast milk also contains protective compounds that can prevent babies from infectious diseases. Breastfeeding also has a tremendous emotional effect that can affect the inner relationship between mother and baby and affect the psychological development of the baby. Exclusive breastfeeding can optimize the baby's growth. Factors that influence breastfeeding are mothers who are well supported by their families and lactation education which can increase their knowledge, attitudes and behavior to provide exclusive breastfeeding for up to 6 months [24,26-28].

Previous research conducted by Zakaria [21] in Maros District on 70 breastfeeding mothers 6 weeks after giving birth showed that giving Moringa leaf extract and powder could increase breast milk volume, but the increase in the group that received the extract was higher than the group, get powder, but does not affect the quality of breast milk (iron, vitamin C and vitamin E).

Moringa oleifera is one of the alternative plants that are believed to have the potential to reduce malnutrition, hunger, prevent low birth weight, increase maternal hb levels, prevent DNA damage

due to stress and prevent anemia in pregnant women [25].

Research by Situmorang [29] by giving katuk leaf stew to nursing mothers as much as 3x1 with 150 cc of katuk leaf stew. Katuk leaves are useful for increasing breast milk, for fever, and many other things. Based on research, katuk leaf infusion can increase milk production in mice. Katuk leaf root infusion has a diuretic effect at a dose of 72 mg / 100 g BW. Katuk vegetable consumption for nursing mothers can prolong the time to breastfeed the baby. The process of boiling katuk leaves can eliminate anti-protozoa properties. Katuk leaf infusion levels of 20%, 40%, and 80% in mice did not cause congenital defects and did not cause reabsorption. Raw katuk leaf juice is used for natural body slimming in Taiwan. The protein content in katuk leaves is nutritious to stimulate the release of breast milk. While the steroid and polyphenol content in it can function to increase prolactin levels. Thus the production of breast milk can increase. The steroids together with vitamin A also promote the proliferation of new alveolar-alveolar epithelium. Thus, there will be an increase in the number of elveoli in the gland which will automatically increase milk production. One of the reasons women do not give breast milk to their babies is that there is not enough milk to not be satisfied with breastfeeding. This is one of the factors that exclusive breastfeeding fails so that the mother gives formula milk to her child [12].

From the research results of Rahmawati [24] conducted a study on giving katuk leaves on increasing the production of sheep's milk. From the results of these studies, it turns out that the 20% katuk leaf extract solution given in vitro can increase milk production> 20%. The milk composition did not change, there was an increase in glucose metabolism activity by> 50%.

Suyanti & Anggraeni, [30] also states that giving katuk leaf decoction which is drunk 3 times a day (150cc in 1x drink) for 7 days can increase milk production by 50-120 ml. The Man Whitney statistical test p value <0.05 showed a significant effect of katuk leaf decoction on breast milk production based on the baby's weight gain. Mothers with sufficient breast milk can be seen from the frequency of weight gain for babies on day 10 [27].

Long bean plant (Vigna cylindrica (L) Skeels) is one plant that people believe can enlarge breasts and increase milk production. This plant has a proliferative effect on breast cells because it contains phytoestrogens, which are natural estrogens found in plants. This compound can stimulate proliferation if it binds to estrogen receptors. Long bean leaves contain 34 kilocalories of energy, 4.1 grams of protein, 5.8 grams of carbohydrates, 0.4 grams of fat, 134 milligrams of calcium, 145 milligrams of phosphorus, and 6 milligrams of iron. In addition, the Long Bean Leaves also contain as much vitamin A as 5240 IU, vitamin B1 0.28 milligrams and vitamin C 29 milligrams [5,31].

In the future, the plants from this research can be used as an alternative therapy for pregnant women who lack milk production. In addition to the effects or side effects that have not been widely reported, these three plants are very easy to find and inexpensive.

Conclusion

Moringa leaves, katuk leaves and long bean leaves were statistically proven to have significant differences in the amount of breastfeeding. Kathree processing is adapted to the form of everyday cooking so that postpartum nursing mothers can easily accept the taste and appearance. Kathree can easily be found in almost all over Indonesia, and is the local wisdom of the Indonesian people.

Study limitations

In our research, it has limitations such as the number of participants being fewer, and in this study there were 3 types of plants used for the intervention and no data analysis was carried out on each type of plant so that the efficacy of each plant could not be known, so in the future it is necessary further research

Author contributions

AGW and J contributed on concepting and designing the research. AGW and INA searched

literature, analyze and interpret the data. AGW and J contributed to the paper's conceptualization, critical revision, and edited the overall improvement. All authors drafting manuscript, read and approved the final submitted paper.

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Conflict of interest

There is no conflict of interest to declare.

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