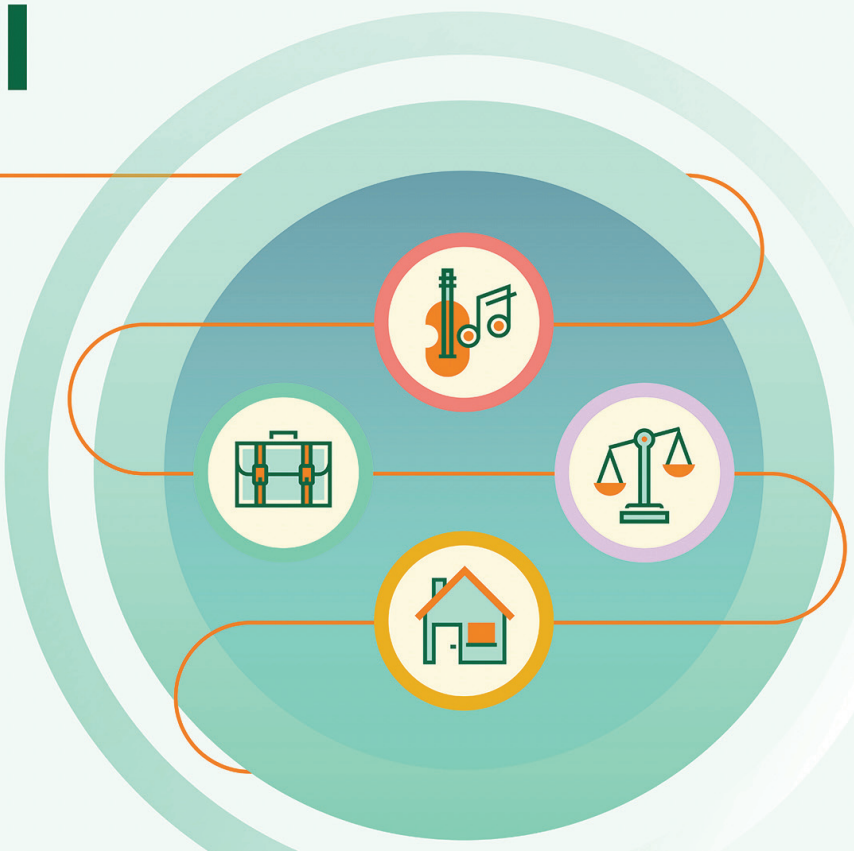
NapoliSana Campania
ORGANO UFFICIALE ORDINE DEGLI INFERMIERI DI NAPOLI
Anno XXIX - n° 2 - Giugno 2023

NSC Nursing
Inserto di ricerca infermieristica
pp. 35-141

Mancano diecimila infermieri

WORLD AUTISM AWARENESS DAY 2023

Transformation: Toward a Neuro-Inclusive World for All



APRIL 2

10 A.M. – 1 P.M. EST

C'è bisogno di più infermieri. Non bastano solo le diagnosi

l'editoriale di Teresa Rea

Se vogliamo mantenere un servizio sanitario di qualità per la nostra cittadinanza dobbiamo pensare di portare più assistenza infermieristica nei nostri ospedali e sul territorio. Non solo diagnosi, insomma. Ma cure. E prendersi cura vuol dire seguire gli ammalati, assisterli anche oltre la stessa malattia. Come fanno gli infermieri. Dentro e fuori gli ospedali. Lo abbiamo detto in una recente lettera inviata al Governatore De Luca. Bisogna investire su una nuova figura d'infermiere, valorizzarne le competenze e incentivarne la crescita.

Perché per avere più infermieri c'è bisogno di investimenti per le assunzioni sia di nuovi colleghi, perché ne mancano fino a diecimila, sia di personale di supporto. Quegli stessi infermieri che stanno cambiando, giorno dopo giorno, come una rivoluzione silenziosa la sanità in Italia. Stiamo parlando di quella infermieristica basata su modelli organizzativi dove il nuovo paradigma sanitario si fonda sulla costruzione di reti di prossimità territoriale, determinando uno spostamento dei setting assistenziali dai luoghi tradizionali di cura, come gli ospedali, verso strutture territoriali più sostenibili e accessibili, che possano favorire l'integrazione sociosanitaria e la continuità dei percorsi di cura. L'assistenza sanitaria nel complesso deve essere caratterizzata dalla multi-professionalità e interdisciplinarità delle attività assistenziali. Il vecchio stereotipato infermiere che assolve mansioni stabilite dal medico non c'è più. Al suo posto ci sono infermieri che prendono in carico l'ammalato portando a compimento un percorso di cura e assistenza che finirà con la guarigione e con le dimissioni. Ecco la direzione che deve prendere la sanità vista dagli infermieri.

I nuovi modelli organizzativi sono stati sviluppati con l'obiettivo di aumentare la soddisfazione dell'infermiere al fine di produrre una maggiore efficienza. Ma anche per offrire ai pazienti servizi sanitari più adeguati alle loro esigenze. Spetterà al governo intervenire sugli stipendi bassi e sulla valorizzazione economica dell'esclusività delle professioni infermieristiche. Ma si può fare in Campania un recupero degli infermieri che mancano (6500 senza contare quelli che andranno in pensione e quelli che serviranno per le Case della salute e per la sanità territoriale), sul riconoscimento delle competenze specialistiche; sull'evoluzione del percorso formativo universitario. Su quest'ultimo aspetto, gli ultimi dati d'iscrizione ai test per le professioni sanitarie diffusi dall'Università Federico II parlano chiaro. E poi ci sono le aggressioni e i sempre più frequenti episodi di violenza contro infermieri e operatori sanitari. Senza contare un regime di precarietà e d'incertezza occupazionale che rende la professione poco appetibile. Pochi infermieri significa mancata e cattiva assistenza ai cittadini. Non è un caso che il ministro della salute Orazio Schillaci abbia parlato di stipendio e riconoscimento. Come nel caso di altre professioni sanitarie, c'è infatti in Italia un problema di carenza di personale infermieristico che mette a rischio la stessa capacità del Ssn di assicurare l'assistenza. Il ministro ha parlato della prospettiva di sviluppo di una sanità più sostenibile, in cui gli infermieri ricoprono un ruolo attivo attraverso "il prezioso lavoro di cura e assistenza che ogni giorno svolgono sia a livello ospedaliero che territoriale". E ha ricordato i passi recentemente compiuti dal Governo in questo senso, per "un disegno di riordino più ampio che punta a rendere la sanità pubblica più attrattiva. E con essa, ovviamente, anche la professione infermieristica.

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Speciale occupazione

In Campania mancano dieci

Agli oltre seimila e trecento mancanti calcolati dalla Fnopi, ci sono da aggiu
(Rapporto Crea) necessarie per presidiare il territorio e popolare Case e Ospe
preoccupati per carichi di lavoro dei colleghi e per servizi ai cittadini. Defic

di **Pino de Martino**

Ufficialmente il buco di organici calcolato da Fnopi supera solo di poco le sei mila unità (6300). Ma considerando i nuovi pensionamenti e le risorse umane necessarie per "mettere a terra" micro ospedali, case di comunità e quanto previsto dal Pnrr nella revisione territoriale del Sistema sanitario nazionale (rapporto Crea), si superano ampiamente le 10mila unità. Bisogna infatti considerare, come fa il Centro per la Ricerca Economica dell'Università di Tor Vergata, i tanti infermieri che mancano già nel Sistema sanitario regionale per effetto del blocco del turnover (6299), e sommare a questi quelli che serviranno a popolare le nuove strutture destinate dal Pnrr al territorio. Ecco come si arriva ai 10mila infermieri mancanti in Campania. "*Sono numeri impietosi, che collocano la Campania tra le regioni d'Italia con il più grave deficit di personale infermieristico"*, commenta Teresa Rea, presidente dell'Ordine delle professioni infermieristiche di Napoli snocciolando i dati diffusi per regioni dalla Federazione nazionale degli ordini delle professioni infermieristiche e quelli della ricerca del Crea (il Centro per la Ricerca Economica Applicata in Sanità dell'Università di Tor Vergata).

Rea - "*Sono numeri da far saltare sulla sedia e che ci preoccupano per la scarsa qualità dei servizi offerti al cittadino e per i carichi di lavoro dei colleghi*", osserva Teresa Rea. La presidente dell'Ordine delle professioni infermieristiche di Napoli ha segnalato ai vertici della Regione il grave deficit professionale. E ricorda: "*Scontiamo ritardi storici legati agli oltre dieci anni di commissariamento, al conseguente blocco delle assunzioni, e a un preoccupante invecchiamento della professione".*

Regione per regione - Secondo i dati Fnopi, in Italia mancano in totale più di 63mila infermieri. Al Nord ne mancano 27mila, segue il Sud con un gap di 23.500, infine 13mila al Centro. Anche se la carenza di infermieri è un problema che riguarda tutto il Paese, esistono dunque importanti differenze tra le singole Regioni. Sempre la Fnopi ha elaborato una stima delle risorse mancanti in ogni Regione. Eccola: Abruzzo: 1759; Basilicata: 512; Calabria: 2140; Campania: 6299; Emilia Romagna: 4217; Friuli Venezia Giulia: 1443; Lazio: 6992; Liguria: 2040; Lombardia: 9368; Marche: 1267; Molise: 478; Piemonte: 4077; Puglia: 4825; Sardegna: 1775; Sicilia: 5707; Toscana: 3717; Umbria: 965; Valle d'Aosta: 116; Veneto: 4533. Numeri che collocano la Campania su un podio negativo subito dopo Lombardia e Lazio. E il Sud infondo alla classifica per macroregioni.

Ocse - Anche l'Ocse (L'Organizzazione per la Cooperazione e lo Sviluppo Economico) ha confermato la carenza d'infermieri in Italia. Secondo l'Istituto economico il rapporto infermieri-abitanti è di 5,5-5,6 infermieri per mille abitanti, uno dei più bassi in Europa, dove la media è di 9,7 per mille. Cifre che collocano l'Italia fuori dagli standard internazionali anche per quanto riguarda il rapporto tra medici e infermieri. Questo dovrebbe essere di 1:3, invece in Italia si ferma a 1:1,5.

Pnrr - Ci sono però stime anche più gravi: secondo il 18esimo Rapporto Sanità del Crea messo a punto dall'Università di Roma Tor Vergata, mancherebbero ben 250mila infermieri. Bisogna infatti considerare che oltre al gap dato dagli infermieri che mancano

mila infermieri

ngere pensionamenti e le risorse umane
edali di comunità. Rea: *"Siamo seriamente*
it professionale segnalato alla Regione".

già nel Sistema sanitario nazionale, quella dell'infermiere è una delle figure principali per attuare la revisione della sanità pubblica prevista dal Pnrr: secondo il Crea solo a questo fine servirebbero tra i 40mila e 80mila infermieri in più rispetto agli attuali.

Posti letto - Manca il personale, ma anche strutture e posti letto. Centomila almeno. E come se questo non bastasse in dieci anni in Italia – dal 2011 al 2021 – sono state chiuse 125 strutture ospedaliere, che rappresentano circa il 12%. *"Con queste cifre e con il continuo definanziamento del sistema sanitario nazionale - osserva la presidente Rea - il diritto alla salute è in grave pericolo"*

Presto in pensione 100mila professionisti

L'allarme lanciato da Fnopi. Ogni anno si laureano 10-12 mila infermieri, personale insufficiente per coprire il turnover fisiologico che toccherà nei prossimi dieci anni le 100mila unità. La presidente Mangiacavalli: *"Oggi non abbiamo la possibilità concreta di immettere un numero così alto di infermieri. Bisogna ragionare sull'attrattività, altrimenti saremo destinati a reclutare personale dall'estero".*

pdm - Entro 8-10 anni lasceranno il servizio circa 100mila infermieri, aggravando il deficit di infermieri in Italia tra i più gravi d'Europa e che s'aggira intorno alle 70 mila unità. Considerando che ogni anno si laureano 10-12 mila infermieri, non immetteremo personale sufficiente per coprire il turnover fisiologico. Quindi non avremo la possibilità concreta di immettere un numero adeguato di infermieri. È questo il bilancio, ma anche l'allarme, lanciato dal Fnopi nel corso dell'evento 'L'economia della sanità, l'economia per la salute', organizzato dall'Health & Science Bridge del Centro Studi Americani. Secondo Mangiacavalli, «se non ragioniamo sull'attrattività siamo destinati a reclutare personale infermieristico dall'estero. Ciò - precisa - potrebbe non essere un male; il problema è che questi colleghi non arrivano dai Paesi che hanno una formazione infermieristica simile a quella italiana che è una formazione di altissimo livello». Il paradosso, secondo la presidente Fnopi, è che mentre «i nostri infermieri li formiamo in Italia e li mandiamo all'estero, noi stiamo andando a reclutare, con modalità a mio avviso da rivedere e da presidiare meglio, persone che, se nel loro Paese di origine sono abilitati all'esercizio della professione, in Italia potrebbero forse essere di supporto agli infermieri».

Investire sulle professioni - "Non è possibile alcun rilancio della sanità pubblica senza un serio investimento sul capitale umano che rappresenta la spina dorsale del nostro Servizio Sanitario Nazionale". È quanto riferisce in una nota il Ministro della Salute, Orazio Schillaci rispondendo a specifiche domande sul fabbisogno infermieristico, assumendo precisi impegni: "Siamo impegnati a valorizzare al meglio il nostro personale sanitario e sociosanitario e a fare in modo che possa lavorare con maggiore serenità, in condizioni di piena sicurezza e con rinnovato entusiasmo". "Abbiamo intrapreso un percorso che proseguirà nella direzione di migliorare le condizioni di lavoro – afferma -: più sicurezza, più gratificazioni, più opportunità di crescita professionale all'interno del Servizio sanitario nazionale". Schillaci ha anche sottolineato la necessità di arginare la fuga all'estero dei professionisti: "Sono tanti gli infermieri che hanno preferito lasciare l'Italia. Vogliamo creare i presupposti per fare in modo che siano incoraggiati a tornare e soprattutto che i più giovani, già dalle scuole superiori, scelgano di investire il proprio futuro in quella che è 'la più bella tra le arti belle'", richiamando così una frase di Florence Nightingale, fondatrice dell'assistenza infermieristica moderna.

Politica sanitaria

Con l'ultimo decreto-legge, n. 34, si è disposto aumenti per gli infermieri e anticipato l'indennità di pronto soccorso senza attendere il 2024. E poi assunzioni anche senza specializzazione diretta e contratti libero professionali per gli specializzandi. E' quanto prevede il provvedimento per contrastare i pronto soccorso affollati e potenziare la sanità territoriale. "Sostenere economicamente le professioni sanitarie – ha detto il

"Contro le urgenze ir

Il Ministro della Salute annuncia provvedimenti contro l'ingolfamento delle em di pronto soccorso. Il ministro Schillaci: *"Il 70 per cento degli accessi ai reparti d'*

Chi aggredisce un infermiere rischia fino a 5 anni di carcere

Al via i nuovi incentivi contenuti nel decreto bollette approdato sulla Gazzetta ufficiale per provare a trattenere medici e infermieri impegnati nei pronto soccorso. Stipendi più alti e prepensionamenti. Carcere fino a cinque anni per chi aggredisce personale sanitario e procedura d'ufficio. Stanziati 200 milioni

pdm - Stipendi più alti; l'opzione di scegliere il part time a fine carriera e poi la possibilità di incassare pensioni più pesanti. Ecco i nuovi incentivi contenuti nel decreto bollette pubblicato sulla Gazzetta Ufficiale per provare a trattenere medici e infermieri nella trincea del pronto soccorso da dove vogliono fuggire tutti, a cominciare dalle nuove leve. Non solo: contro la piaga delle aggressioni in corsia scatterà la procedura d'ufficio (senza bisogna della querela) e chi colpisce un sanitario rischierà da due a cinque anni di carcere.

Emergenza P.S.- Il sistema del pronto soccorso in Italia versa in una condizione di reale emergenza nazionale, al punto che in molte strutture del Paese si corre un concreto e quotidiano rischio d'interruzione del servizio. L'ultimo decreto approvato dal Governo, che contiene diverse misure per i pronto soccorso, rappresenta il primo concreto riconoscimento della natura usurante dell'emergenza urgenza. Lavorare in questi reparti significa turni molto pesanti e spesso una scarsa gratificazione economica e professionale. L'impegno, allora, è quello di rendere più attrattivo il lavoro in pronto soccorso e fare in modo che si scelga di entrare e di restare nel servizio sanitario.

Pene più dure - Carcere fino a cinque anni per chi aggredisce persnale sanitario. Contro l'emergenza delle aggressioni nelle corsie a danno d'infermieri, medici e operatori sociosaniari negli ospedali - se ne contano 5mila negli ultimi 3 anni secondo le denunce ufficiali all'Inail - si modifica anche il codice penale. Il provvedimento inasprisce le sanzioni per le lesioni personali quando la persona offesa è esercente una professione sanitaria o sociosanitaria nell'esercizio o a causa delle funzioni o del servizio. In pratica scatterà la procedibilità d'ufficio (non servirà più per forza la querela del sanitario aggredito per far partire la procedura) e poi la reclusione viene aumentata da 2 a 5 anni anche in caso di lesioni non gravi o gravissime.

Le altre misure - In particolare il pacchetto di misure per i pronto soccorso prevede innanzitutto che l'indennità per il personale che lavora nell'emergenza-urgenza scatti subito dal 1 giugno e non più dal 2024 come previsto dalla manovra che per questo obiettivo ha stanziato 200 milioni. È previsto anche l'aumento della tariffe orarie per le prestazioni aggiuntive nei pronto soccorso che possono essere pagate fino a 100 euro lordi. Il decreto riconosce ai fini dell'accesso alla pensione di vecchiaia e alla pensione anticipata anche l'incremento dell'età anagrafica a cui applicare il coefficiente di trasformazione pari a due mesi per ogni anno di attività effettivamente svolta nei pronto soccorso per un limite massimo di ventiquattro mesi e per i pensionamenti fino al 30 giugno 2032. Per ovviare anche il tema della carenza di personale sanitario nei pronto soccorso fino al 2025 i precari che hanno lavorato «in area critica» per almeno 3 anni, potranno partecipare ai concorsi anche se «non in possesso di alcun diploma di specializzazione». E «in via sperimentale» gli specializzandi al di fuori dall'orario per la formazione potranno assumere incarichi libero-professionali nei pronto soccorso per un massimo di 8 ore settimanali e con un compenso pari a 40 euro lordi. Non solo sempre fino al 2025 chi lavora nei pronto soccorso e ha i requisiti per la pensione anticipata potrà chiedere il part time «fino al raggiungimento del limite d'età».

IL MINISTRO SCHILLACI

ngolfate potenziare il territorio"

nergene-urgenze. Aumenti salariali per gli infermieri e per il personale sanitario con anticipo al 2024 delle indennità

urgenza è definito codice bianco o verde, ossia non urgente. Proprio per questo la medicina territoriale sarà potenziata"

di **Pino de Martino**

ministro della Salute Orazio Schillaci - è fondamentale per riconoscere davvero quegli eroi che si occupano quotidianamente del valore più importante: la nostra salute", ha aggiunto.

Il territorio - Il sovraffollamento dei pronto soccorso è il sintomo di una malattia più grande, che possiamo fermare solo attraverso azioni concrete e strutturali. Da 10 anni, escludendo il periodo COVID, il definanziamento del sistema sanitario nazionale e, soprattutto, la mancanza di una visione organizzativa hanno impoverito la salute pubblica. Se oltre il 70 per cento degli accessi nei pronto soccorso è definito codice bianco o verde, ossia non urgente, significa che i cittadini hanno perso punti di riferimento territoriali e si riversano negli ospedali, dove l'attenzione è focalizzata verso le urgenze. Proprio per questo la medicina territoriale sarà potenziata.

Regioni virtuose - Il Pnrr stanzia fondi per le opere infrastrutturali. Bisogna lavorare per rendere questi luoghi delle vere case della comunità a cui rivolgersi per servizi sanitari con la collaborazione delle regioni, in particolare quelle virtuose che, ad esempio, hanno già stanziato i fondi del Milleproroghe per abbattere le liste d'attesa. Si sono disposte, infine, anche norme più dure contro la violenza negli ospedali, perché esercitare una professione non può mai diventare un rischio per chi lo fa.

Decreto 34 – Tra le nuove misure introdotte con il provvedimento che interviene sulla carenza del personale medico e infermieristico, con l'articolo 11 del decreto 34 si conferisce alle aziende e agli enti del Servizio sanitario nazionale la facoltà di ricorrere a prestazioni aggiuntive, la cui tariffa può essere aumentata. Inoltre, con la medesima disposizione si anticipa al 1° giugno 2023 l'indennità per chi lavora in pronto soccorso. L'articolo 12 prevede specifiche misure per il personale dei servizi di emergenza-urgenza e consente, fino al 31 dicembre 2025, ai medici che hanno maturato un'esperienza con contratti di lavoro flessibile nell'ambito dei servizi di urgenza, ancorché non in possesso del diploma di specializzazione, di poter accedere alle procedure concorsuali. Parallelamente, si è inteso consentire in via sperimentale ai medici in formazione specialistica, in deroga alle incompatibilità previste, su base volontaria, al di fuori dell'orario dedicato alla formazione, ulteriori attività libero professionali.

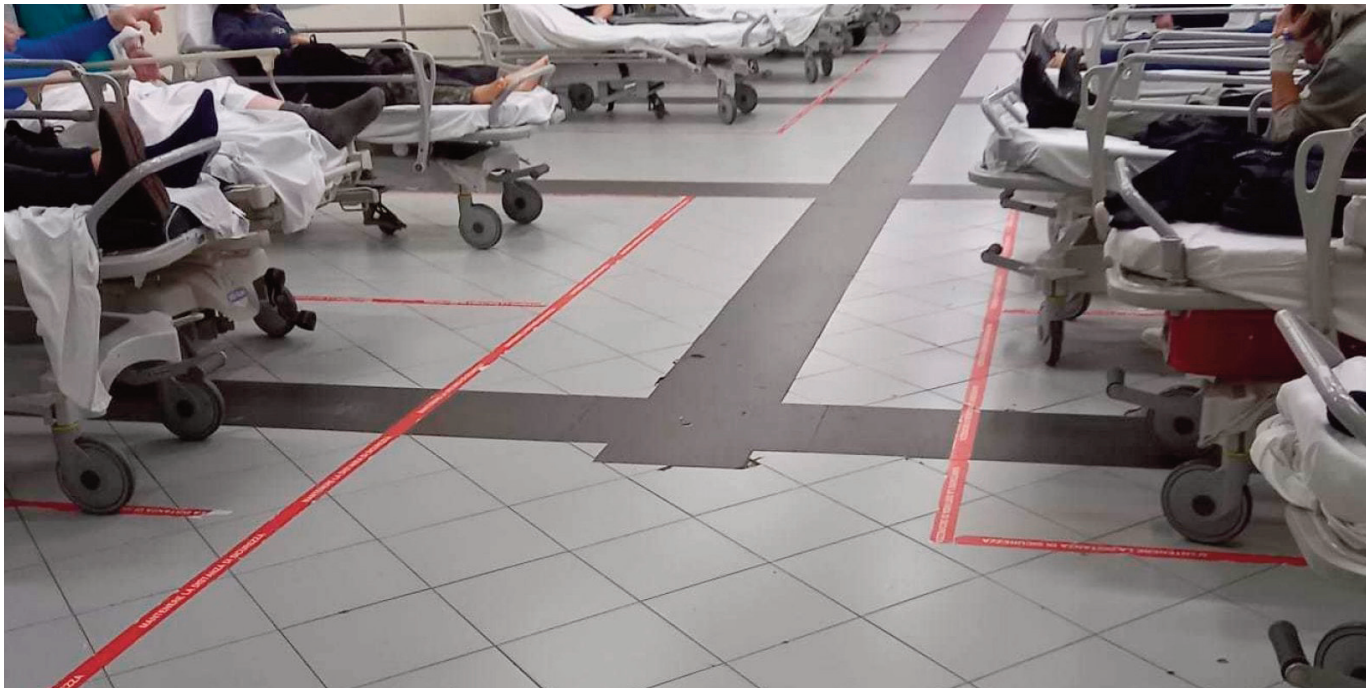
Pensionamenti anticipati - Inoltre, la disposizione in questione ha previsto la possibilità per il predetto personale di avere un pensionamento anticipato e di essere ammesso, previa autorizzazione dell'azienda, al rapporto di lavoro ad impegno orario ridotto. Inoltre, con l'articolo 14 si consente alle aziende di assumere, con contratto di lavoro subordinato a tempo determinato, con orario a tempo parziale, gli specializzandi, dal terzo anno, del corso di formazione specialistica. Infine, con riferimento agli episodi di violenza nei confronti del personale sanitario, s'innalzano i limiti della pena stabilita per il reato di lesioni personali.

Politica sanitaria

Mini-ospedali, neanche un euro per farli funzionare

Il Piano nazionale di ripresa e resilienza stanzia un miliardo di euro per la realizzazione e il collaudo di 400 ospedali di comunità. Mancano i fondi per la gestione: circa 1miliardo. La data di consegna è il 31 dicembre 2026. Trattative in corso con la Commissione europea per spostare la scadenza al 2029

di **Dario de Martino**



Tra i capitoli del Piano nazionale di ripresa e resilienza che più preoccupano il governo e il ministro del Pnrr e degli Affari Ue Raffaele Fitto, ci sono anche gli ospedali di comunità. Si tratta di punti sanitari intermedi tra il ricovero ospedaliero e gli interventi domiciliari che, nello schema che prevede la "rivoluzione" della sanità territoriale italiana, devono occuparsi d'interventi sanitari a bassa intensità clinica.

Bassa intensità - Il Piano stanzia, infatti, un miliardo di euro per la realizzazione e il collaudo di 400 di queste strutture che dovranno occuparsi di piccoli episodi medici o del riacutizzarsi di patologie croniche, ovvero d'interventi sanitari a bassa intensità clinica.

Tempi lunghi - Si tratta di presidi di assoluta necessità, considerando lo scarso numero di professionisti sanitari disponibili e l'affollamento dei pronto soccorso. Ma i problemi sono due: mancano i fondi per la gestione (circa1miliardo) e i tempi per realizzarli sono più lunghi del previsto, anche a causa dei ritardi accumulati da molte Regioni già nella fase di progettazione di queste 400 opere (mancano gare, convenzioni e obbligazioni vincolanti). Gli ospedali di comunità sarebbero, infatti, tra quei progetti da "mettere a terra" entro il 31 dicembre 2026. Ma per i quali - nelle trattative in corso con la Commissione europea - si sta provando a spostare la data di scadenza più in avanti, lasciandoli rientrare sotto l'ombrello dei fondi di coesione, che hanno come orizzonte di completamento il 2029.

Costi di gestione - Più che i ritardi però, già segnalati anche dalla Corte dei conti nella relazione pubblicata a maggio scorso, il vero nodo da sciogliere restano i costi di gestione. Un po' come accaduto con i bandi degli asili nido, andati deserti perché i fondi del Pnrr coprono la costruzione ma non la gestione successiva, anche per gli ospedali di comunità non sono stati previsti soldi per la gestione corrente. Vale a dire che le Regioni dovranno poi accollarsi - assieme alle case di cura e alle strutture già esistenti – anche le spese delle 400 nuove opere. Una parte d'infermieri, medici e operatori arriveranno dalla riorganizzazione – spiegano al ministero della Sa-

lute - ma rischiano di essere tutte strutture vuote. Del resto, stando ad un documento dell'ufficio parlamentare di bilancio, le risorse aggiuntive necessarie sarebbero ingenti. Quando le risorse del Pnrr saranno esaurite - si legge - si dovrà rinvenire nei finanziamenti al Sistema sanitario nazionale più di un miliardo per dare continuità ai servizi di assistenza domiciliare e quando gli Ospedali di comunità saranno disponibili si dovranno reperire 239 milioni per il relativo personale. Una spesa corrente che rischia di far ritrovare in ginocchio molte delle Regioni che già oggi faticano a tenere in ordine i conti della sanità. Specie Campania, Sicilia e Puglia che hanno ottenuto rispettivamente l'11, il 10 e il 9 per cento dei fondi del Pnrr a disposizione.

De Luca: al Ssn servono subito 4mld Campania a rischio pronto soccorso

"Anche il ministro della Salute ne prende coscienza e dice finalmente che occorrerebbero 4 miliardi di euro per dare il respiro minimo alla sanità pubblica del nostro paese". Il presidente della Regione accusa il governo di scarsa considerazione verso la sanità pubblica e lancia l'idea di un movimento d'opinione per sollecitare l'invio dei fondi per la sanità. "Siamo ormai il paese d'Europa che ha gli stanziamenti più bassi per la sanità pubblica. E' una situazione drammatica - ha detto lanciando l'allarme: a breve rischiamo davvero di non poter tenere aperti i pronto soccorso nei prossimi mesi".

Ma nonostante gli appelli al governo, De Luca ricorda che in cassa per la sanità "non c'è un euro". Un deficit di che – dicono a palazzo Santa Lucia - "registriamo nonostante il recupero che abbiamo ottenuto lo scorso anno. Rimaniamo pur sempre la Regione che ha meno risorse nell'ambito del fondo sanitario nazionale e che ha 10-15.000 dipendenti in meno nella sanità pubblica rispetto alla media nazionale. Quindi veramente la situazione è pesante, dovremo combattere e creare un movimento di opinione per svegliare il Governo nazionale che mi pare estremamente distratto rispetto a due grandi servizi di civiltà, sanità pubblica e scuola pubblica».

Politica sanitaria

CORTE DEI CONTI

Bilanci sanità: "Nelle regioni del Sud il risultato migliore"

Nel complesso peggiorano i conti pubblici con un rosso da 1,47 miliardi. Lo dicono i magistrati della Corte dei conti nell'ultimo report sulla sanità. Nel rapporto si sottolinea che «il disavanzo è da ricondurre soprattutto alle Regioni a statuto ordinario del Nord». Sono invece le regioni del Mezzogiorno, pur se in deficit, a presentare «nel complesso il risultato migliore»

di Antonio Uccello

La sanità del Bel Paese tocca gli 1,47 miliardi di euro di deficit. Una voragine che secondo il report della Corte dei conti è da ricondurre soprattutto alle Regioni a statuto ordinario del Nord. Ed è mitigato grazie alle migliori performance del Sud, che pur se in disavanzo, «nel complesso presenta – dicono i magistrati contabili - il risultato migliore».

Peggiorano i conti - Sommando i bilanci presentati da tutte le regioni, i conti della sanità sono «in netto peggioramento», con un rosso in crescita che nel 2022 è arrivato appunto a 1,4 miliardi. E' quanto emerge dal Rapporto 2023 sul coordinamento della finanza pubblica della Corte dei Conti. «Il risultato di esercizio, misurato quale differenza tra le entrate previste dallo Stato per la copertura dei Lea e le spese sostenute per l'assistenza sanitaria, si presenta in netto peggioramento. Le perdite crescono, passando dai 1.025 milioni di disavanzo del 2021 a poco meno di 1.470 milioni (erano 800 milioni nel 2020)», si spiega nel report.

Male al Nord - «Il peggioramento dei risultati riguarda sia le regioni in Piano che quelle non in Piano. La variazione è più marcata nelle prime che vedono crescere le perdite (prima delle ulteriori coperture) da 115 milioni ad oltre 410 milioni. Le altre regioni registrano nell'esercizio una crescita più limitata, ma su livelli assoluti maggiori (dai 910 milioni del 2021 a 1.060 milioni)», spiega la Magistratura contabile. «Il peggioramento dei conti è da ricondurre soprattutto alle Regioni a statuto ordinario del Nord, che passano da un avanzo di 40 milioni del 2021 a un disavanzo di circa 178 milioni: un andamento essenzialmente dovuto a Piemonte, Liguria ed Emilia che presentano un disavanzo di 186 milioni.

Centro - Cresce di 150 milioni il disavanzo delle regioni del Centro: in miglioramento il risultato della Toscana, è il Lazio a presentare il peggioramento più marcato».

Sud migliore - Sono invece le regioni del Mezzogiorno a presentare «nel complesso il risultato migliore», pur se in deficit. «Si tratta tuttavia - si precisa - del risultato di andamenti diversi: il risultato della Calabria dovuto, tuttavia, al miglioramento del saldo mobilità connesso al blocco dell'assistenza fuori regione del 2020, compensa le perdite riferibili al Molise e alla Puglia. Crescono del 7 per cento le perdite delle regioni a statuto speciale del Nord.

Pnrr e risorse destinate alla salute. Il Sud sopra la media nazionale

pdm - Ammontano a 18,5 miliardi di euro le risorse destinate alla Salute dal Pnrr. E il Sud fa la parte del leone, vista anche la riserva in suo favore di almeno il 40% delle risorse oggetto del riparto del ministero della Salute. Tutte le regioni del Mezzogiorno si attestano, infatti, su valori superiori alla media nazionale di 149,8 euro. Tutte le Regioni del Centro e del Nord, ad eccezione del Friuli-Venezia-Giulia, sono invece sotto la media nazionale. Si va dai 188,2 euro pro-capite della Calabria, 185,6 della Sicilia, 183,8 della Sardegna e 182,3 della Campania, sino ad arrivare ai 131,5 del Piemonte, ai 128,7 dell'Umbria, agli 87,3 del Lazio".

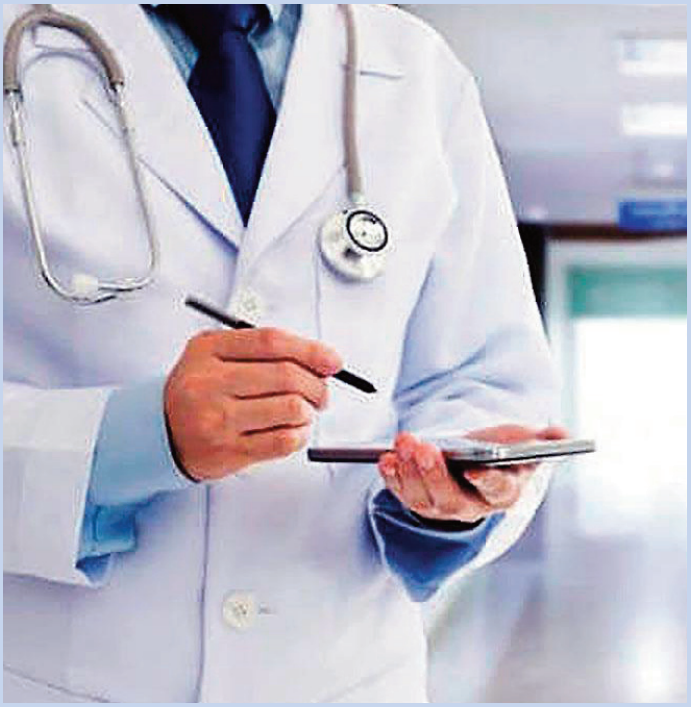
Il Pnrr - Il Piano nazionale di ripresa e resilienza prevede "oltre 4 miliardi destinati all'ammodernamento tecnologico degli ospedali, 4 miliardi per potenziare l'assistenza domiciliare e la telemedicina, 2 miliardi per l'attivazione delle Case della comunità, 437 milioni per un ecosistema innovativo del sistema salute, 1 miliardo per l'attivazione degli Ospedali di comunità, oltre 1,6 miliardi per rafforzare l'infrastruttura tecnologica e la capacità di raccolta dati del Servizio sanitario nazionale, circa 500 milioni per favorire l'approccio 'One Health', oltre 700 milioni per il potenziamento della formazione dei professionisti sanitari, oltre 500 milioni per il potenziamento della ricerca biomedica e circa 1,6 miliardi per aumentare il livello di sicurezza delle strutture sanitarie".

Missione salute – Guardando al finanziamento pro-capite 2022 richiesto dalle Regioni per i progetti relativi alla Missione Salute, tutte le Regioni del Mezzogiorno si attestano su valori superiori alla media nazionale di 149,8 euro. Tutte le Regioni del Centro e del Nord, ad eccezione del Friuli-Venezia-Giulia, sono invece al di sotto della media nazionale. Si va dai 188,2 euro pro-capite della Calabria, 185,6 della Sicilia, 183,8 della Sardegna e 182,3 della Campania, sino ad arrivare ai 131,5 del Piemonte, ai 128,7 dell'Umbria, agli 87,3 del Lazio". E' la stessa Corte dei Conti, ad affermare che "i valori pro-capite dimostrano che le Regioni del Mezzogiorno, almeno sul piano delle iniziative programmate, hanno saputo cogliere la finestra di opportunità loro offerta dal Pnrr e dal Pnc (Piano nazionale complementare). Opportunità che, "vista anche la riserva in loro favore di almeno il 40% delle risorse oggetto del riparto del ministero della Salute (D.M. 12/1/2022), se attuata effettivamente, consentirà di avviare quel processo di correzione delle sperequazioni infrastrutturali tuttora presenti nei territori, in linea con il terzo asse strategico del Pnrr Italia.

Assistenza sanitaria pubblica in crisi ma non è solo un problema di risorse

In sette regioni, soprattutto al Sud, non sono garantiti i livelli essenziali di assistenza, cioè le cure a carico del Ssn. In più le Regioni sono in ritardo nella spesa dei fondi stanziati per il recupero delle liste d'attesa. La denuncia di Salutequità: "In alcune Regioni c'è un problema grande di competenze"

pdm - «Non è solo un problema di risorse. Leggendo i dati messi in fila dalla Corte dei conti si capisce, infatti, che non basta aggiungere soldi visto che poi, come è accaduto per il recupero delle liste d'attesa, non vengono spesi tutti». Ma il deficit riguarda anche i livelli essenziali d'assistenza (Lea). E, complessivamente, le competenze di chi governa la salute nelle regioni. A sottolineare la grave crisi di sistema che attraversa la sanità pubblica è "Salutequità", il laboratorio per l'analisi, l'attuazione e l'innovazione delle politiche sanitarie, diretto da Tonino Aceti. "In alcune Regioni – sottolinea l'organismo - c'è "un problema grande di competenze. Si tratta di malattie ataviche del Servizio sanitario ormai cronicizzate che il nostro Paese si trascina anno dopo anno e che dopo il Covid sono ancora tutte lì alla luce del sole." Per questo - sottolinea Tonino Aceti - serve un ruolo centrale del ministero che deve essere più forte nell'accompagnare chi sta indietro e penso che in questo senso andrebbe potenziato anche il ruolo dell'Agenas". Per Aceti tra l'altro le criticità sia sui conti, che sul rispetto dei Lea riguardano «molte Regioni a statuto speciale. Per questo prima di andare avanti sulla strada dell'autonomia differenziata bisognerebbe fare un supplemento di indagini per capirne gli effetti e i rischi»



Lea - Sulle cure prestate dal Ssn ben sette Regioni, soprattutto al Sud, risultano insufficienti, anche se il rapporto della Corte dei conti presenta «ancora stime provvisorie» relative al 2021. Tuttavia, sul rispetto dei livelli essenziali di assistenza in tutte le Regioni si evidenzia «un miglioramento generale dopo la battuta di arresto dell'anno precedente, con 14 regioni che raggiungono la sufficienza in ciascun livello di assistenza», contro le 11 del 2020, ma le 15 del 2019. «Permangono però forti criticità, soprattutto nelle regioni meridionali» e così sono sette le Regioni che non assicurano adeguatamente le cure ai cittadini almeno in una macro area: Calabria e Valle d'Aosta risultano insufficienti in tutte e tre le aree (ospedale, territorio e prevenzione), la Sardegna in due (territorio e ospedale), Sicilia e Bolzano sono "bocciati" sulla prevenzione e il Molise nell'assistenza ospedaliera e la Campania in quella territoriale.

Liste d'attesa – Sono ancora da spendere ben 152 milioni dei fondi stanziati per provare ad arginare il buco nero delle cure perse durante la pandemia. In pratica è stato speso solo il 69% dei fondi a disposizione, con forti differenze tra macroregioni: il Nord è al 92%, il Centro al 57% e il Sud con solo il 41% speso. E così il target di recupero dei ricoveri ospedalieri è stato raggiunto solo al 66% a livello nazionale (72% Nord, 78% Centro e 40% Sud), mentre per gli screening fondamentali per la prevenzione il target di recupero è stato raggiunto a livello nazionale solo al 67% (91% al Nord, 27% al Centro e il 44% al Sud). Infine per il recupero delle prestazioni ambulatoriali (visite ed esami) il recupero si ferma al 57% del target nazionale con forti differenze locali: 81% al Nord, 79% al Centro e uno striminzito 15% al Sud. «Se ne trae - conclude la Corte dei conti - un quadro che nel complesso, oltre a segnare un gap nelle prestazioni sanitarie ancora significativo in maniera più diffusa delle attese nell'uscita dalla pandemia, offre una immagine molto netta di come la crisi sanitaria abbia contribuito ad aumentare le differenze di performance tra aree del Paese."

Politica sanitaria

"Una professione che

Istituzioni politiche e sanitarie responsabili del disamore. Gli infermier poche opportunità di carriera; insufficiente numero di posti disp

L'Opi Napoli punta il dito contro la scarsa attenzione alla professione da parte delle istituzioni sanitarie e non, responsabili in buona parte del fenomeno. "*Alla scarsa valorizzazione professionale – dicono gli infermieri di Napoli - si sono aggiunti turni massacranti dovuti ad una carenza di organici ormai endemica (vedi pagina 6 e 7). Ma anche scarse prospettive di carriera; carichi di lavoro eccessivi; insufficiente numero di posti disponibili nei corsi di laurea; bassi stipendi rispetto alla media europea; invecchiamento della popolazione infermieristica.*

Calo d'interesse - "Si registra purtroppo un preoccupante calo d'attrattività della professione infermieristica. E questo riguarda soprattutto i giovani, visto che, come riporta una recente indagine, un cittadino su due riconosce l'alto valore sociale dell'infermiere". Ed allora secondo gli infermieri di Napoli "è necessario intervenire sugli stipendi bassi, sulla valorizzazione economica dell'esclusività delle professioni infermieristiche; sul riconoscimento delle competenze specialistiche; sull'evoluzione del percorso formativo universitario. Su quest'ultimo aspetto, gli ultimi dati d'iscrizione ai test per le professioni sanitarie diffusi dall'Università Federico ll parlano chiaro. *E poi ci sono le aggressioni e i sempre più frequenti episodi di violenza contro infermieri e operatori sanitari. Senza contare un regime di precarietà e d'incertezza occupazionale che rende la professione poco appetibile. "Pochi infermieri – osservano all'Opi - significa mancata e cattiva assistenza ai cittadini*".

Bassi stipendi - L'Oecs, l'Organizzazione per la cooperazione e lo sviluppo economico, ha calcolato quanto guadagnano gli infermieri italiani rispetto ai loro colleghi europei. È emerso che lo stipendio medio degli infermieri in Italia è pari a 28.400 euro a fronte di

Scarse attese di carriera Giovani poco interessati

Per gli infermieri la carenza di personale e la scarsa attrattività della professione sono due aspetti strettamente collegati tra loro. "Il tema della carenza di personale è solo la punta dell'iceberg", ha detto la presidente Fnopi Barbara Mangiacavalli. "Sicuramente oggi la professione infermieristica non è più attrattiva in Italia. Questo perché i giovani scelgono percorsi che trovano più rispondenti alla loro idea di sviluppo di carriera". Ecco perché se non si mette mano strutturalmente al modello organizzativo della sanità pubblica, gli infermieri resteranno congelati in un appiattimento professionale che agli occhi dei giovani non è per nulla attrattivo".

Meglio all'estero - Non è un caso – dicono alla Fnopi - se "abbiamo 20mila infermieri che lavorano all'estero e che non hanno nessuna intenzione di tornare in Italia. Hanno trovato uno sviluppo di carriera e una valorizzazione delle loro competenze che in Italia non ci sono". Germania, Spagna, Belgio e Svizzera. Sono queste le destinazioni più ambite dagli infermieri italiani che decidono di trasferirsi all'estero per stipendi più alti e condizioni contrattuali più vantaggiose. È un fenomeno iniziato nel 2012 e che sembra non fermarsi. Le nostre università formano professionisti molto competenti che preferiscono esercitare fuori dal Belpaese.

diventa sempre meno attrattiva”

ri di Napoli lamentano la grave carenza di personale; bassi stipendi; scarsa valorizzazione professionale; ponibili nei corsi di laurea. Oecs: *stipendio medio infermieri in Italia 28.400 euro. Media Ue 35.300*

di **Pino de Martino**

una media Ue di 35.300 euro. La stima si riferisce al reddito medio annuo lordo, comprensivo di contributi previdenziali e tasse sul reddito, ma con esclusione di straordinario e calcolato a parità di potere di acquisto.

Carichi di lavoro - Oltre alle poco allettanti condizioni salariali e lavorative, un’importante voce nel rendere poco attraente la professione è il sovraccarico di mansioni assegnato al singolo infermiere, anche a causa della grave carenza di personale e dell’inadeguato ricambio generazionale. Secondo le stime di Fnopi, oggi in Italia gli infermieri attivi iscritti all’albo sono circa **395mila**, su un totale di 460mila iscritti. Di questi 270 mila sono dipendenti del Servizio sanitario nazionale (Ssn), 45mila sono liberi professionisti e 80mila lavorano per strutture private.

Università - È vero che per la laurea in infermieristica 2022-2023 sono stati previsti 1.383 posti a bando in più rispetto a quanto indicato in precedenza, superando per la prima volta il numero dei 19mila posti (19.375). Ma, nonostante ciò, le immissioni in ruolo nei prossimi anni continuano a essere insufficienti per coprire il vuoto lasciato in gran parte dai pensionamenti. Inoltre, come segnalato dalla Federazione nazionale ordini professioni infermieristiche (Fnopi), il problema a livello universitario riguarda soprattutto la mancanza di corsi di specializzazione, che impedisce a chi esercita questa professione, o progetta di farlo, di ambire a una carriera e a una realizzazione professionale. Per questo, chiede Fnopi,»serve un percorso formativo clinico-specialistico che apra alla crescita professionale e renda più attrattiva la professione».

Rivedere i modelli organizzativi con le reti di prossimità territoriale

Il tradizionale modello organizzativo è ormai inefficace per rispondere alle esigenze di salute della popolazione. Il nuovo paradigma sanitario si fonda sulla costruzione di reti di prossimità territoriale, determinando uno spostamento dei setting assistenziali dai luoghi tradizionali di cura, come gli ospedali, verso strutture territoriali più sostenibili e accessibili che possano favorire l’integrazione sociosanitaria e la continuità dei percorsi. L’assistenza nel complesso deve essere caratterizzata dalla multi-professionalità e interdisciplinarità delle attività assistenziali.

Ecco la direzione che deve prendere la sanità vista dagli infermieri. I nuovi modelli sono stati sviluppati con l’obiettivo di aumentare la soddisfazione dell’infermiere al fine di produrre una maggiore efficienza. Ma anche per offrire ai pazienti servizi sanitari più adeguati alle loro esigenze.

OpiNapoli informa

Dialisi, delibera Regione riduce addetti Gli infermieri di Napoli bloccano l'atto

Accolta la richiesta degli infermieri di Napoli. Lettera alla Regione per contestare la delibera e per istituire un tavolo di discussione ad hoc

di **Pino de Martino**

"È stata accolta con la dovuta tempestività la richiesta degli infermieri formulata al presidente della Regione Vincenzo De Luca di bloccare la delibera (189/2023 del 19 maggio 2023) con la quale s'intendeva ridurre drasticamente il numero d'infermieri addetti nei Centri dialisi, passando da un rapporto di 1 infermiere ogni 4 ad 1 ogni 5 pazienti". Ne ha dato notizia la stessa presidente dell'Ordine delle professioni infermieristiche di Napoli Teresa Rea commentando con soddisfazione l'accoglimento da parte della Regione Campania delle motivazioni degli infermieri di Napoli. "L'Opi di Napoli – osserva la presidente Rea - sottolinea positivamente il blocco della delibera da noi sollecitato, considerando la dialisi un importante trattamento salvavita che va potenziato e non depauperato, dedicando ad esso più addetti e maggiore qualità assistenziale".

Un tavolo ad hoc - Con il blocco dell'atto amministrativo è stato assunto anche l'impegno espressamente richiesto dall'Opi Napoli di istituire un tavolo ad hoc per una ridiscussione dell'intera materia, concordando in una riunione con le parti la soluzione per la grave crisi che attraversa l'ambito della dialisi campana. A rappresentare la Regione Campania il funzionario dirigente, dr Ugo Trama che ha prospettato l'istituzione di un tavolo tecnico in nefrologia per affrontare i gravi problemi che riguardano il trattamento di dialisi con tutti i soggetti interessati.

La lettera - A contestare il provvedimento con il quale la Regione Campania intendeva ridurre il numero d'infermieri nei Centri dialisi era stata proprio la Presidente Rea in una lettera indirizzata allo stesso presidente della Giunta regionale Vincenzo De Luca. Una missiva nella quale si sono esposte le forti preoccupazioni da parte degli infermieri in ordine alla Delibera della Regione Campania con la quale si autorizzavano le strutture private a ridurre il numero di infermieri che si dedicano ai pazienti dializzati. In tutta Italia il rapporto pazienti-infermieri nei centri di dialisi è di tre pazienti per un infermiere. Solo in Campania il rapporto era di quattro pazienti per un infermiere dedicato. Con la Delibera n. 189/2023 il rapporto sarebbe diventato di cinque pazienti per un solo infermiere. Il provvedimento risulta fortemente penalizzante sia per gli infermieri che per gli assistiti, "atteso che la dialisi è un trattamento salvavita, che non la si può interrompere e che chi la esegue deve recarsi con trasporto privato o un'ambulanza presso il Centro di dialisi di riferimento mediamente 3 volte a settimana per essere assistito da medici ed infermieri mediante l'utilizzo di dispositivi medicali complessi". Anche in considerazione del fatto "che negli ultimi anni tali pazienti sono spesso di età più avanzata; fragili e presentano molteplici comorbidità; alterazioni dello stato nutrizionale; limitazioni dell'autonomia motoria o disabilità fisica ed alterazioni dello stato mentale, associate talora a stato depressivo. Che tali condizioni molto spesso alterano gli assetti organizzativi e la gestione assistenziale, senza contare l'impegno eccezionale di personale infermieristico con competenze specialistiche ed un team multiprofessionale. In ragione di tutto questo, dicono gli infermieri, si ritiene che la Delibera in oggetto sia in forte contraddizione rispetto agli scenari sopra descritti, in quanto riduce i parametri assistenziali degli infermieri che ogni giorno assistono i pazienti in emodialisi all'interno delle strutture private. Pertando, si dice infine nella lettera con la richiesta di blocco dell'atto e istituzione di un tavolo ad hoc, "se l'obiettivo dell'Ente Regione è quello di garantire un'assistenza sanitaria sempre più di qualità, tale delibera non risponde affatto a quest'esigenza, non avendo in conto delle ricadute complessive che coinvolgono il personale e perché mina pericolosamente l'interazione con i pazienti, accentua l'insoddisfazione lavorativa ed il burnout, impattando in modo importante sulla qualità generale dell'assistenza erogata".

12 MAGGIO

GIORNATA INTERNAZIONALE dell'Infermiere 2023

L'Opi di Napoli apre le porte della sede e sarà in piazza con attività di educazione sanitaria e promozione della salute rivolte alla cittadinanza

10:00 – 16:00

PIAZZA CARITÀ 32, NAPOLI

In sede

INCONTRO CON I NEO LAUREATI

Verranno affrontate tematiche inerenti il ruolo dell'Opi e la comunicazione sanitaria, sarà presentato l'aggiornamento dell'app OPI Napoli e si terrà la premiazione del contest artistico

ORIENTA PROFESSIONE

Open day della sede OPI per gli studenti del 3° anno di infermieristica e infermieristica pediatrica e per infermieri e infermieri pediatrici iscritti presso OPI NAPOLI

PROIEZIONE

del documentario

SIMULATORE DI REALTÀ VIRTUALE

di ambienti di lavoro infermieristici (PS, OBI, T. Intensive, Rianimazioni etc)

In piazza

- Rilevazione dei parametri vitali
- Test per dosaggio glicemia
- Ecografia per tutela patrimonio venoso
- Dimostrazione pratica disostruzione vie aeree e RCP
- Esecuzione test per HIV
- Promozione screening e vaccinazioni
- Dimostrazione delle attività CIVES

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12 maggio 2023

OpiNapoli informa

Salute e prevenzione, g incontrano i citt

In occasione della Giornata internazionale dedicata alla professione, l'Ordine deg iniziative. "Abbiamo scelto di vivere questa giornata stando tra la gente, surrog sistema pubblico non riesce a garantire". ha detto la presidente Teresa Rea illustrar vazione dei parametri vitali e educazione sanitaria con stand tra la gen

di **Pino de Martino**

"Benvenuti a casa vostra". Esordisce cosi Teresa Rea, presidente dell'Opi Napoli, aprendo i lavori della "Giornata internazionale dell'infermiere". Giornata celebrativa organizzata dall'Ordine delle professioni infermieristiche partenopeo.

Cittadini - "Festeggiamo questo giorno speciale con l'orgoglio di professionisti socialmente e umanamente impegnati e avendo quest'anno due obiettivi particolari: i cittadini e i giovani". I primi come destinatari di una salute di prossimità, territoriale. Quella sanità che il Sistema sanitario nazionale fa mancare. Con gli infermieri più vicini alla gente, tra le persone, dice Teresa Rea. "Non c'è modo più efficace ed eticamente degno di celebrare la giornata internazionale dell'infermiere stando tra le persone per promuovere la cultura della salute e della prevenzione", ha detto la presidente Teresa Rea, nel presentare l'iniziativa.

Il futuro - ".Ma anche stando con i giovani" che, secondo la Rea, rappresentano il futuro della professione, lo sviluppo e il domani. Ma che però oggi sono lontani. Perché fare l'infermiere, soprattutto a Napoli, non attrae, non affascina. Anzi allontana. C'è disamore. Anche per le difficili condizioni professionali, i pochi organici, le

aggressioni e i carichi di lavoro. Dunque va a essi la nostra attenzione. Per promuovere e valorizzare la professione. "Siate dei professionisti della salute e il biglietto da visita di questa professione e delle aziende dove presterete servizio. Con l'augurio di lavorare qui, nella città dove vi siete formati e culturalmente arricchiti, costruendo la vostra professione", auspica la presidente Rea ai circa 500 giovani intervenuti.

Le istituzioni – Tra le autorità intervenute a celebrare con gli infermieri il 12 maggio, Felice Casucci, presente in rappresentanza della Regione Campania e in qualità di assessore alla Semplificazione amministrativa e al Turismo e Coordinatore della segreteria ("Anche la politica dovrebbe ispirarsi ai modelli culturali veicolati dagli infermieri. Siate angeli custodi delle persone che hanno bisogno delle vostre cure") e Pasquale Sannino, consigliere comunale di Napoli ("*Rappresentate la cultura della salute e il futuro della professione. Una salute che sarà meglio tutelata dalle giovani generazioni perché più preparate*"). E poi i tanti messaggi istituzionali ricevuti dai rappresen-

Consegnata alla presidente Rea la maglia dell'Opi Calcio

Il capitano della selezione Calcio Opi Napoli Vincenzo Nota, ha consegnarto alla Presidente la maglia N.10 autografata da tutti i componenti della squadra, in segno di riconoscenza per il costante sostegno e per aver creduta per prima nel progetto sportivo.

12 maggio 2023

OpiNapoli informa

gli infermieri tadini

gli infermieri di Napoli ha promosso diverse ando un'assistenza sanitaria di base che il ndo l'attività di prevenzione, screening, rile- te. I messaggi d'auguri dalle istituzioni

tanti delle istituzioni.

Il codice deontologico - E' il codice deontologico il faro della professione", ricorda Teresa Rea sottolineando i valori, le regole e il corretto agire del professionista nella giornata ispirata a Florence Nightingale, infermiera britannica attenta all'aspetto sociale della professione e considerata la fondatrice dell'assistenza infermieristica moderna (fu la prima ad applicare il metodo scientifico attraverso l'utilizzo della statistica e propose l'organizzazione degli ospedali da campo). Quel Codice Deontologico che fissa le norme cui deve sottostare l'Infermiere e definisce i principi guida che strutturano il sistema etico in cui si svolge la relazione con l'assistito. "Il Codice deontologico – sottolinea la presidente - racchiude i principi etici della professione ed è al suo interno che è spiegato come l'Infermiere agisca nel rispetto dei diritti fondamentali dell'uomo, concependo la salute come un bene fondamentale dell'individuo e un interesse della collettività, tenendo conto dei valori etici, ideologici, religiosi, culturali, etnici e sessuali dell'individuo".

Screening con i gazebo in piazza

Con il patrocinio morale della Città di Napoli e dell'Assessorato municipale alla Salute, sono stati allestiti in piazza Carità, dalle 10 alle 16, dei gazebo con i quali gli infermieri hanno portato la salute in piazza. Sono stati tanti i cittadini interessati all'iniziativa. "Non capita spesso poter accedere gratuitamente a sevizi sanitari che normalmente si pagano e sono di difficile accesso", dice un cittadino deluso da una sanità territoriale praticamente assente. Presso gli stand allestiti dagli infermieri sono stati effettuati la rilevazione gratuita dei parametri vitali. E' stato possibile eseguire test di dosaggio glicemico, effettuare ecografie per la tutela del patrimonio venoso (dr. Vincenzo Faraone) ed è stato possibile grazie al Cives (Coordinamento Infermieri Volontari Emergenze Sanitarie) prendere parte a dimostrazione pratiche di disostruzione delle vie aeree e rianimazione cardiopolmonare. La promozione di indagini diagnostiche su Hiv, infezioni sessuali e malattie veneree è stata fatta grazie all'intervento con il Camper dell'associazione Vola, presieduta da Vincenzo De Falco. "La promozione degli screening e delle vaccinazioni, insieme con le attività' di educazione sanitaria svolte con passione da infermieri ed infermieri pediatrici hanno interpretato e risposto ai bisogni sanitari della cittadinanza, sono state molto apprezzate dai cittadini" dice Margherita Ascione, consigliere dell'Ordine di Napoli. "A dimostrazione – aggiunge – di quanto la popolazione senta necessaria quest'attività di base, di prossimità che però gli viene negata per l'assenza quasi totale di presidi sanitari territoriali".

12 maggio 2023

OpiNapoli informa

Oltre cinquecento giovani pe

Orienta professione: Gli interventi di Artiola, Signoriello, Napolitano sui temi legati ri
Open day con tantissimi giovani per diffond

di **Pino De**

Neolaureati, ma soprattutto ragazzi, studenti che s'avvicinano alla professione Un poco attratti, un poco respinti dai tanti dubbi e dalle concrete possibilità di saper trovare il proprio futuro. E' l'esercito dei giovani che il 12 maggio ha invaso come un'onda piena di vita e di energia le stanze dell'Opi Napoli, aperte per l'occasione a un Open day orientato. Ragazzi interessati e attratti dai tanti eventi organizzati per presentare al meglio una professione che stenta ad attrarre. Cosi un simulatore di realtà virtuale in 3 dimensioni riproduce a fini didattici ambienti di lavoro e fa sperimentare una formazione innovativa e intrigante.

L'Ordine professionale - E' toccato a Vincenzo Signoriello, Presidente Commissione d'Albo Opi Napoli confrontarsi con quanti, soprattutto tra i neolaureati, chiedevano ma cosa fa l'Ordine professionale degli infermieri? "Abbiamo affrontato diverse tematiche relative alla funzione, alla composizione e agli ambiti di azione dell'Ordine, oltre a rispondere a tantissime domande circa l'avvio della carriera professionale, lo sviluppo di carriera, le possibilità formative universitarie e l'assolvimento dell'obbligo dell'Ecm. Durante l'incontro – spiega Signoriello - non sono mancati i momenti di confronto e c'è stata anche l'occasione di toccare argomenti come la responsabilità professionale, l'obbligo di assicurazione per gli esercenti le professioni sanitarie e la condivisione di contenuti a carattere scientifico".

Libera professione - "Come si applica, i vantaggi, l'aspetto finanziario, quello fiscale e le opportunità lavorative". Sono i temi affrontati da Rosario Napolitano (segretario Commissione d'Albo dell'Opi Napoli). "Alla fine della giornata, mi sono sentito davvero appagato e grato per l'opportunità di essere un infermiere e di far parte di una professione così nobile. Spero di aver trasmesso questo senso di appartenenza a quanti guardano alla nostra professione con interesse. La Giornata Internazionale dell'Infermiere ha dato un significato ancora più profondo, unendoci come comunità e ricordandoci l'importanza del nostro lavoro. Spero che in questi eventi ci siano sempre più infermieri a dare il loro contributo".

Comunicazione – Al Consigliere Gaetano Artiola è toccato parlare di comunicazione "La tematica racchiude in se concetti di comunicazione, rivolta al paziente o relativa al professionista. E soprattutto quali sono i comportamenti professionali dell'operatore sanitario ritenuti validi e quelli da eliminare, tenendo conto che si parla di comunicazione anche nel nostro codice deontologico, nello specifico negli articoli 28 e 29. E' stato posto poi l'accento sui social media, sui rischi e sulle opportunità che offrono ed in che modo utilizzarli correttamente. Dunque evitando tutti quegli atteggiamenti impropri che possono ledere

la professione e chi curiamo. Sono state accennate strategie di comunicazione efficace come quella del personal branding, ossia quello che si vuole comunicare di sé stessi ed in particolare dal punto di vista della professione abbiamo indagato quali fossero le rappresentazioni più sbagliate che ritroviamo spesso tra i colleghi e viceversa invece quali quelle da tenere in considerazione per rispettare la nostra etica professionale. Inoltre ci siamo focalizzati sulle conseguenze penali, civili e professionali di una cattiva gestione di comunicazione sui social e sono stati dispensati piccoli consigli su come gestire profili personali e professionali senza incorrere in errore e dunque poter trasmettere messaggi positivi e concreti. Sono stati poi presentati tutti i canali social dell'Opi Napoli insieme alla rivista scientifica ed è stato poi mostrato l'aggiornamento dell'app opi Napoli con tante novità di competenza, tra cui il tesserino digitale per poter accedere alle convenzioni ed alle offerte

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OpiNapoli informa

er costruire insieme il futuro

spettivamente alle funzioni dell'Ordine, alla libera professione e alla comunicazione.
dere la professione tra le nuove generazioni

MARTINO

messe a disposizione dallo stesso, nonché poter accedere ai questionari di ricerca proposti. Gli utenti potranno inoltre consultare la rivista Nsc nursing ed attraverso la sezione profilo controllare eventuali morosità.

Il talento degli infermieri. Arte e Scienza in evoluzione

Contest artistico: premiati tre giovani per come hanno saputo rappresentare le sensibilità sociali e umane legate alla professione

Flavia Bruzzese, Sarita Betty Esposito e Roberto Zannini si sono aggiudicati rispettivamente il primo, il secondo e il terzo posto del **"**Contest artistico**"** promosso dall'Ordine delle Professioni Infermieristiche di Napoli. Il tema a concorso è stato **"Il talento degli infermieri - Arte e Scienza in evoluzione". Un tema scelto** seguendo anche quanto indicato dalla Fnopi (la Federazione nazionale degli ordini delle professioni infermieristiche) per rappresentare l'assistenza infermieristica come una forma d'arte, **"**un mondo che tutti noi possiamo scrutare, guardando gli spazi e ascoltando i tempi del nostro vivere accanto ai nuovi bisogni, che portano con sé la riflessione sui cambiamenti sociali**,** sulle disuguaglianze – osserva il consigliere delegato Opi giovani Gaetano Artiola - che si accentuano e la necessità di offrire nuove prospettive assistenziali e di dialogo con modalità relazionali offerte dall'arte**"**.

Tra la gente - I cittadini "riconoscono" gli infermieri come un punto di riferimento rispetto ai propri bisogni di salute, ma questa funzione fondamentale non viene ancora riconosciuta dalla politica e dalle istituzioni, né dalle organizzazioni aziendali.

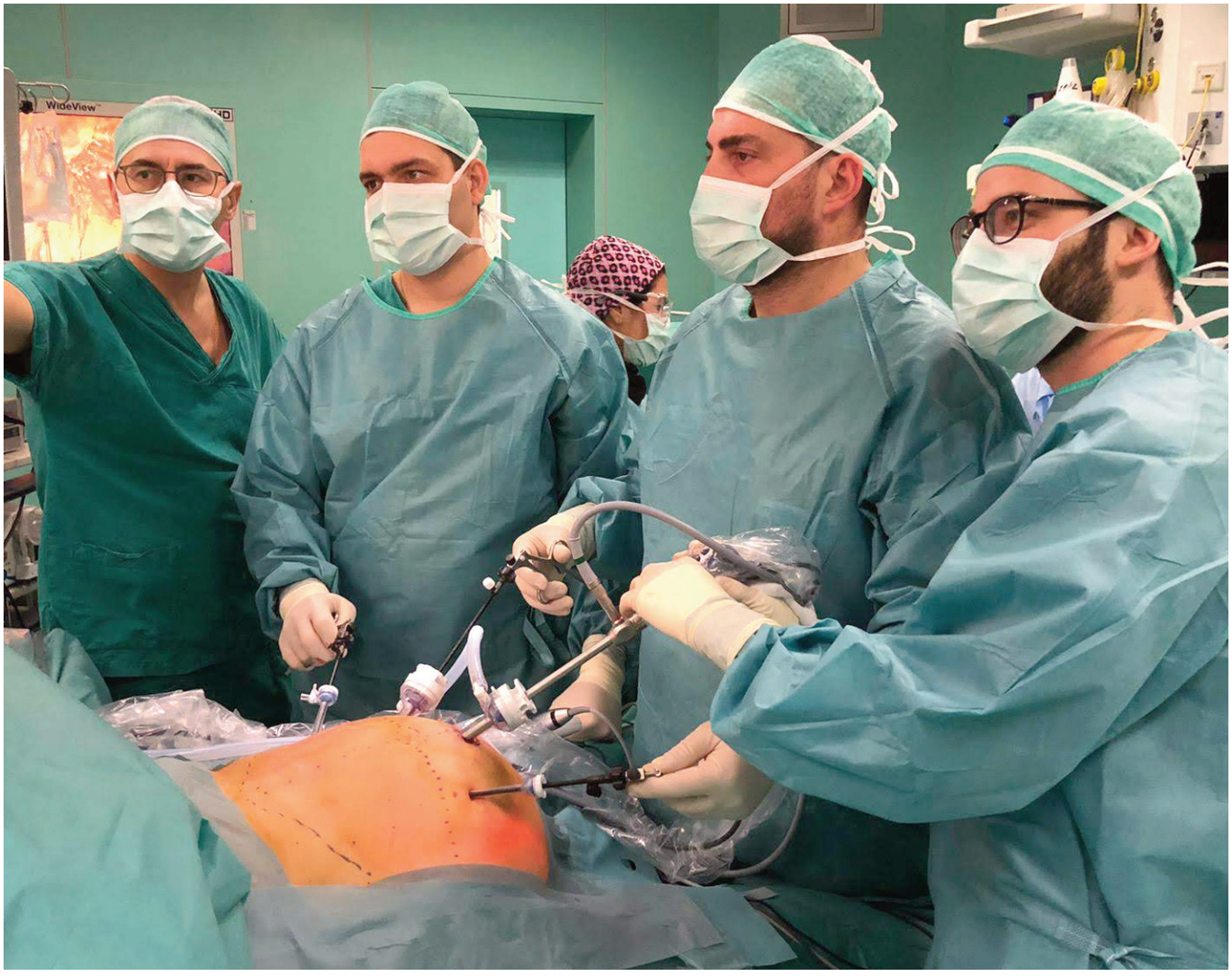
Competenze - Cosa chiedono gli infermieri? Lo sviluppo clinico, professionale e culturale della loro professione: dal rapporto emerge che quasi l'80% degli infermieri ha un percorso accademico post-base, professionisti specializzati con la necessità urgente di maggiori percorsi accademici per valorizzare le proprie competenze cliniche, a vantaggio dei pazienti. Le richieste della Federazione di un percorso clinico specialistico si legano a doppio filo con la motivazione di fondo della celebrazione del 12 maggio.

Cultura e salute - La professione infermieristica è infatti intrisa di cultura, di scienza, di rilevanza sociale e comunitaria**.** La Federazione e i vari Ordini provinciali hanno dimostrato in questi ultimi anni come la presenza infermieristica non sia solo una costante nell'ambito sanitario, ma una costante nell'ambito culturale e sociale di tutta la comunità. Per questo va subito riconosciuta anche l'elevata professionalità e l'elevata rilevanza sociale e culturale che gli infermieri rappresentano.

Revisioni e aggiornamenti

Intervento di gastrectomia laparoscopica

di Salvatore Errico



Gli interventi laparoscopici sullo stomaco non sono tutti accettati e diffusi, come gli interventi descritti negli articoli precedenti. L'accesso laparoscopico viene utilizzato ed è considerato il gold standard per le patologie del giunto gastroesofageo, rappresenta una alternativa alla chirurgia laparotomica nel trattamento della patologia benigna, dei tumori stromali e dei tumori mesenchimali (leiomiomi e GIST) nei quali la resezione con almeno due centimetri di tessuto e ritenuta sufficiente. In campo oncologico la laparoscopia si è dimostrata utilissima nella stadiazione del tumore, per evitare interventi inutili in caso di pazienti inoperabili e per individuare i pazienti che possono beneficiare di terapia neodiuvanti preoperatorie. Nei pazienti con tumore dello stomaco, siamo soliti eseguire sempre una laparoscopia diagnostica esplorativa definita "Look"per valutare l'operabilità o meno della lesione (infatti nel 40- 60% dei casi il paziente arriva al chirurgo

quando la neoplasia è ormai inoperabile in modo radicale).In questo modo è possibile evitare inutili è indispensabile una gastroentero-anastomosi resa ancora più tollerabile dalla mini-invasività dell'accesso laparoscopico.

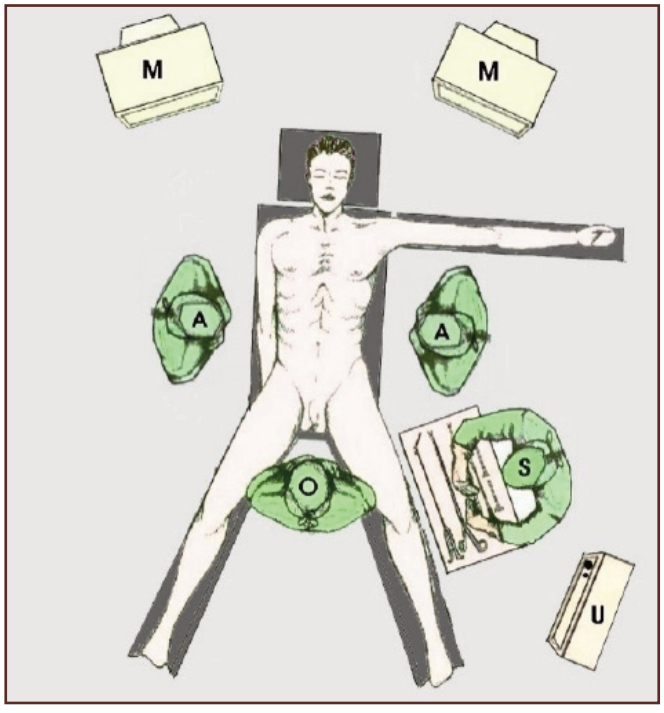
Gli studi esistenti sulle gastrectomie per cancro nn sono composti da casistiche numerose, ma tutti pongono l'attenzione sulla difficile learning curve e più che altro sulla difficoltà di effettuare correttamente la linfoadenectomiache, se ben eseguita migliora la sopravvivenza del paziente. Tuttavia,in centri selezionati come il nostro (A.O. dei Colli presidio Monaldi di Napoli centro di Chirurgia mininvasiva e robotica diretta dal prof. Diego Cuccurullo),la gastrectomia parziale che totale è ritenuta fattibile. L'indicazione laparoscopica principale è rappresentata dai tumori gastrici iniziali T1, T2anche se abbiamo trattati dei casi allo stadio T3. La nostra casistica laparoscopica dal 2018 al 2023 è rappresentata da 34 gastrectomie totali, 18 resezioni gastriche sub-totali e 14 WedgeResection per patologie benigne.

Di seguito è riportato il protocollo infermieristico in uso presso il nostro centro:

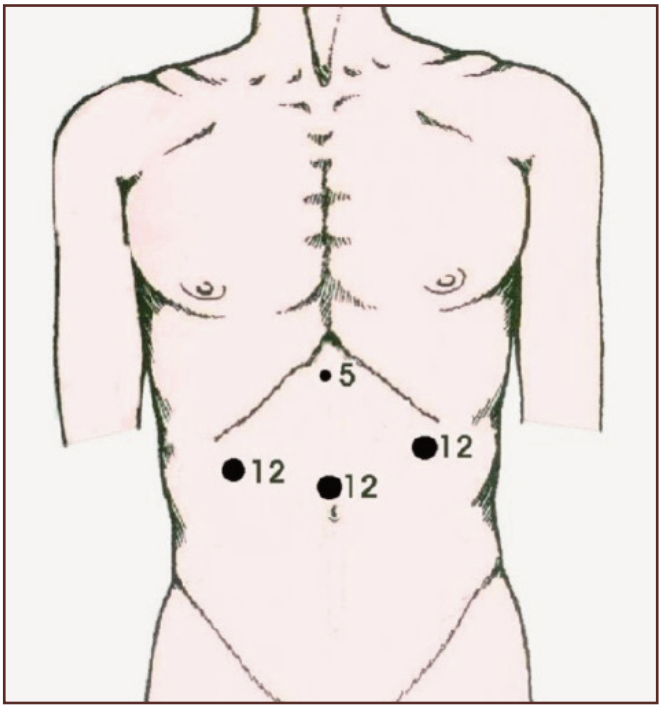
• Posizione e preparazione del paziente: Paziente in posizione litotomica con arti inferiori divaricati in leggero antitrendeleburg (15-30 gradi) con le braccia lungo il corpo o con il bracciolo sinistro esteso, il tavolo operatorio deve dare la possibilità di lateralità fino a 25°e di trendeleburg e di antitrendeleburg. Al paziente gli viene posizionato il SNG e catetere vescicale.

• Posizione degli operatori e dello strumentario di sala operatoria: L'operatore è posto tra le gambe del paziente. Il primo aiuto è a destra del paziente e manovra l'ottica,il secondo aiuto è alla sinistra del paziente. Lo strumentista è a sinistra del secondo aiuto. Si utilizzano due monitors.

• Posizione trocars: Il trocar per l'ottica 12 mm è posto a due dita circa sopra l'ombelico; un secondo trocars 12mm è posto sulla emiclaveare di sx, in ipocondrio sx, ed è manovrato dalla mano destra dell'operatore; un terzo trocar 12 mm è posto a livello emiclaveare di destra,poco più sopra del trocar per l'ottica e viene manovrato dalla mano sinistra dell'operatore; un quarto trocar 5mm,può essere posizionato in sede sotto-xifoidea in posizione paramediale sx e può essere utilizzato dall'operatore con la mano sx o dall'aiuto per esporre meglio le strutture anatomiche, ma anche il retrattore per il fegato.



Posizione paziente e attrezzature nelle gastrectomia totali e sub-totali



Posizione trocars gastrectomia totali e sub-totali

Strumentario laparoscopico:

	Diametro	Quantità
Siringa con 2cc sol. Fisiologica		
Ago di Veress		
Hasson	10-12mm	n° 1
Trocar	10-12mm	n° 2
Trocar	5mm	n° 1
Johann	5mm	n° 2
Grasper	5mm	n° 1
Delaitre (passafilo)	10mm	n° 1
VI ideoendoscopio 30° 3D	10mm	n° 1
Thunderbeat o Forbice ultracision	5mm	n° 1
Portaghi x laparoscopia	5mm	n° 1
Pinza bipolare (Mouiel)	5mm	n° 1
Cannula x aspirazione e irrigazione	5mm	n° 1
Divaricatore a branche multiple	10mm	n° 1

Ferri x approccio laparoscopico:

Pinza anatomica	n° 2
Manico da bisturi lama 11	n° 1
Forbice - media – curva (Metzenbaum)	n° 1
Divaricatore di Langebeck	n° 2
Pinza x pulizia	n° 1
Coppetta	n° 2
Backhaus	n° 6

Suture:

Sutura sintetica assorbibile (AcidoPoliglicolico o PDS)

Cal. 2/0 ago composite (20cm)

Cal. 2/0 ago retto

Cal 3/0 ago 1/2 cerchio, filo autobloccante a spina di pesce. **(v-loc o stratafix).**

Presidi:

Cavo x elettrobisturi.

Tubo x aspirazione e irrigazione.

Soluzione fisiologica x irrigazione.

Soluzione sterile calda (ottica).

Fettucce di gomma colorate loop7cm.

Endo-bag 15mm (sacchetto)

Colla di fibrina (tissucol)

Drenaggio 21 freanch

Materiale sanitario:

Garze-Lunghette 15x2,5cm

Ferri x una mini laparotomia:

	Quantità
Vidrep 5mm (sacchetto x contenere le anse intestinali)	
Pinza anatomica	n° 2
Pinza chirurgica	n° 2
Pinza vascolare	n° 1
Pinza x coagulo	n° 1
Forbice media-curva (Metzenbaum)	n° 1
Manico da bisturi (lama 21)	n° 1
Klemmer curvi	n° 2
Kocher curvi	n° 4
Klemmerine curve	n° 4
Passafilo	n° 1
Pinza ad anello	n° 1
Portatamponi	n° 1
Portaghi	n° 2
Forbice di Mayo	n° 1
Divaricatori tipo Mathieu	n° 2
Divaricatore autostatico (Gosset)	n° 1
Enterostato	n° 2
Babcock	n° 4
Elettrobisturi	n° 1
Aspiratore	n° 1
Tubo di drenaggio 20 french	n° 2

Suture:

Sutura sintetica assorbibile (acido poliglicolico):

Cal. 3/0 libero

Cal. 0 libero Cal. 3/0 ago ½ cerchio Cal. 1 ago ½ cerchio

Sutura sintetica non assorbibile (seta,poliestere e poliammide):

Cal. 3/0 ago 3/8 cerchio

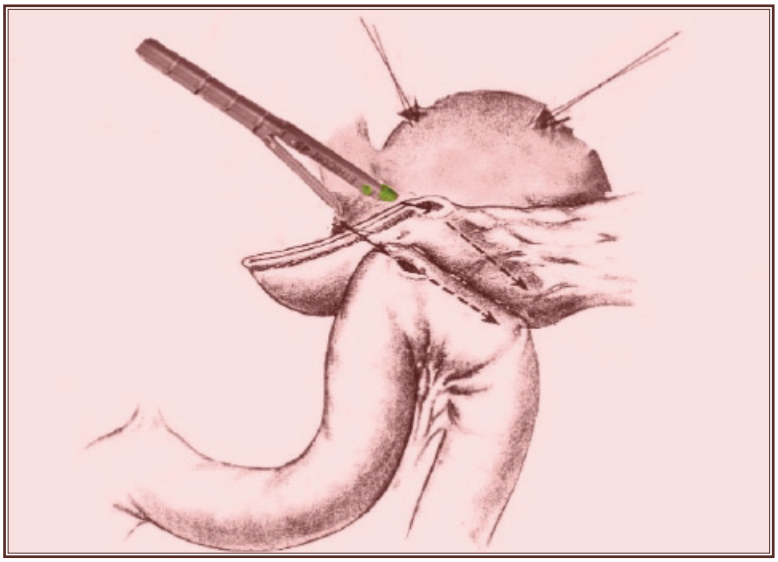
Revisioni e aggiornamenti

Note di tecnica chirugica nelle gastrectomie sub-totali:

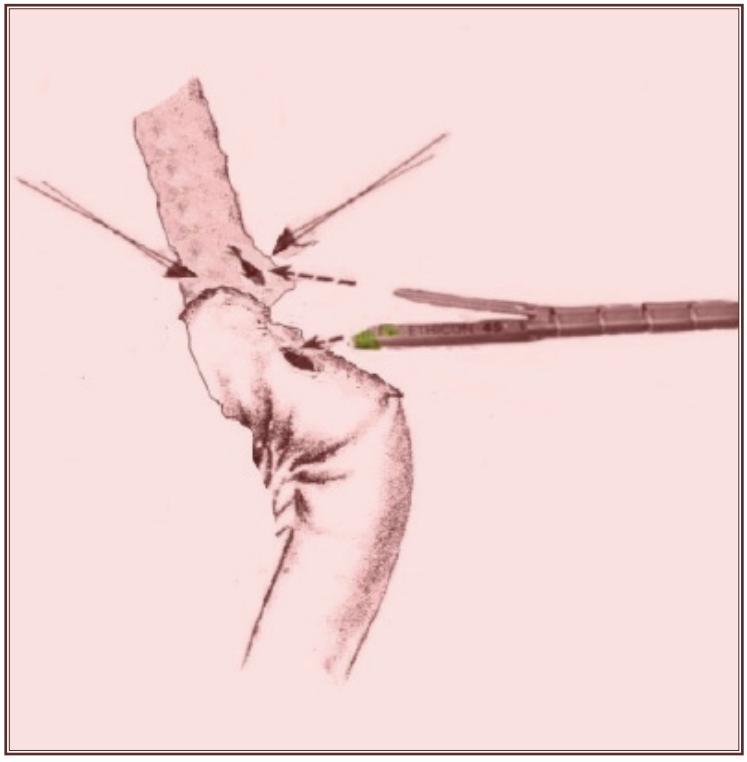
Tecnica Veres assistita

Introduzione dei trocars.Apertura legamento gastrocolico,isolamento del piloro,sezione tra clips della gastrica di dx. Inerruzione delduodno con suturatrice tagli e cuci(60 standard).Linfoadenectomia del tripode celiaco.

Lo stomaco viene sezionato con suturatrice lineare tagli e cuci(60 standard) lasciando una cuffia sottocardiale;si procede ad anastomosi intra-corporea gastro- entero latero-laterale isoperistaltica trans-mesocolica,anche in questo caso si userà una suturatrice lineare. La breccia anastomotica sarà chiusa con punti in continua 2/0 ago composite (acido poliglicolico). Minilaparotomia xifo-sovraombelicale di servizio con estrazione del pezzo anatomico ed anastomosi extra-corporea al piede dell'ansa secondo Braun con suturatrice lineare taglia e cuci 60 standard carica bianca.



Note di tecnica chirugica nelle gastrectomie totale



Il tempo laparoscopico consiste nello scollamento colon –epiploico e scheletrizzazione della piccola curva dello stomaco che viene sezionato con suturatrice lineare standard a livello della prima porzione del piloro.

Linfoadenectomia del tripode celiaco successivamente si procede a legatura dell'arteria gastrica di sinistra e destra alla preparazione dell'esofago distale e sezione dellostomaco con suturatrice lineare tagli e cuci 60 standard. Ricostruzione della continuità del tubo digerente con anastomosi intracorporea esofago digiunostomia latero- laterale su ansa ad omega montata per via trans- mesocolica con suturatrice lineare 60 standard. Si confeziona Braun ai piedi dell'ansa in sede sottomesocolica anche essa con suturatrice lineare 60 bianca.

Terminata tale fase si procede ad una minilaparotomia sotto-ombelicale , posizionamento del sacchetto di vidrep ed asportazione dello stomaco.

In entrambi i casi si effettua un controllo della tenuta anastomotica in sesta giornata , *dopodichè,* se non ci sono problemi il paziente ritorna ad alimentarsi con dieta tenue.

La dimissione viene effettuata in ottava o nona giornata.

Intelligenza Artificiale in sanità: un alleato o un nemico?

di Anna Arnone

Il concetto di Intelligenza Artificiale è meno astratto di quanto si possa pensare. E' una realtà che si sta sempre più consolidando nelle nostre vite, semplificando e assistendo l'uomo in attività che comportano l'agire in modo analogo a quanto fatto dagli esseri umani, cioè pensare e risolvere problemi razionalmente. Quando si parla di Intelligenza Artificiale, si pensa subito a tecnologie all'avanguardia, a robot in grado di comprendere e decidere le azioni da compiere e di un mondo futuristico in cui macchine e uomini convivono. In realtà, l'Intelligenza Artificiale e il suo utilizzo sono molto più reali di quanto si possa immaginare e vengono oggi utilizzati in diversi settori della vita quotidiana. In questo senso, l'intelligenza artificiale comporta considerazioni e aspetti controversi: può aiutare l'uomo nelle mansioni più faticose e complesse simulando i processi cognitivi. Ma può anche rappresentare una "minaccia per la sopravvivenza dell'umanità", come pure è stato autorevolmente sostenuto.

Infermieristica – Tra i tanti campi d'applicazione, l'intelligenza artificiale sta facendo enormi progressi nella sanità, nell'infermieristica, nella medicina, nella chirurgia robotica e nella diagnostica. I robot potrebbero presto supportare gli infermieri in una varietà di compiti all'interno di una struttura sanitaria, sollevandoli da quelle attività più gravose, monotone e ripetitive. Aiutandoli invece nella telemedicina per raggiungere le comunità isolate. Ma anche una migliore cura del paziente attraverso la diagnostica portatile, monitoraggio parametri vitali e altre svariate applicazioni.

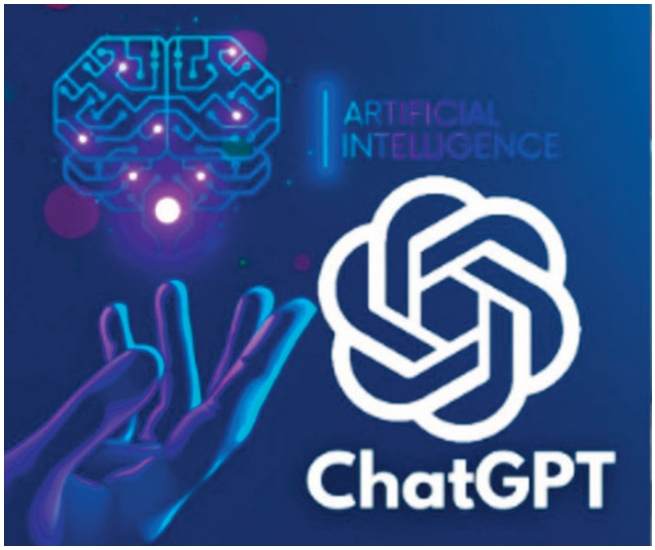
Apocalittici – Ma seguendo il ragionamento di diversi autori (leggi Christian Buhtz) non è tutto oro quello che luccica. Secondo una vulgata meno fideistica il problema non è la fattibilità tecnica dell'assistenza robotica, ma la complessità delle relazioni interpersonali tra infermiere e paziente, che consente incontri individuali. Da questo punto di vista non si pone la questione se i robot per l'assistenza infermieristica possano realmente soddisfare le esigenze dei pazienti. Cioè se sistemi di supporto computerizzati possono aiutare tecnicamente gli infermieri nei compiti sopra accennati. Quanto piuttosto se l'intelligenza artificiale possa sostituire l'uomo nelle funzioni più propriamente 'umane'. L'intelligenza artificiale non ha sentimenti come l'amore, la connessione o la gioia, può solo simulare tali sentimenti con un comportamento corrispondente. In altre parole, può un sorriso caldo e una parola giusta al momento giusto essere sostituito da un comportamento razionale? L'empatia, la premura e l'attenzione umana non potranno mai essere sostituite dalla tecnologia.

Revisioni e aggiornamenti

ChatGpt, il software d'ultima generazione

di Anna Arnone

L'ultima frontiera è ChatGpt – che sta per Generative Pre-trained Transformer - una chatbot, ovvero un software progettato da OpenAI che sa rispondere alle domande, conversare, generare testi, traduzioni, presentazioni, spiegare in parole semplici un concetto complesso, tutto al posto di un essere umano. Il fratello più intelligente di Google, un rivale ormai consolidato nonché un fenomeno tecnologico che sta ormai dilagando in molte aziende che si sono rese conto dell'utilità di questi strumenti per creare contenuti e che sta confinando anche nelle traduzioni di testi di media complessità: si ipotizza che tra un decennio l'intelligenza artificiale riuscirà a dare traduzioni perfette per almeno le prime 10 lingue più parlate nel mondo. Uno scenario che apre la possibilità del suo utilizzo anche in ambito sanitario e che sta già sostituendo i lavoratori nelle aziende statunitensi per svolgere sondaggi e analisi di mercato ad ampio spettro, pianificazione e organizzazione di attività.



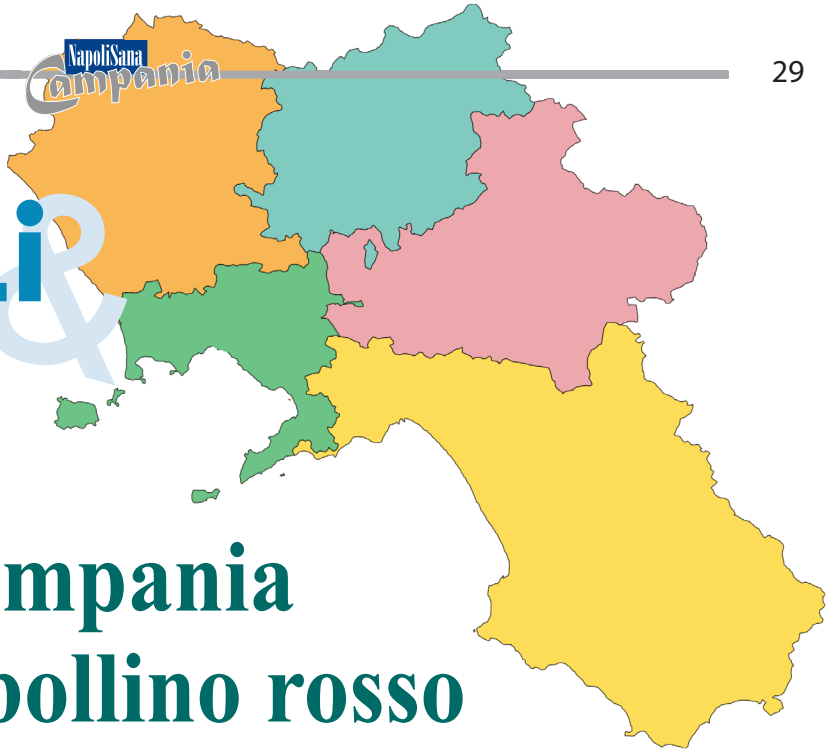
L'altra faccia della medaglia che ne consegue, come accade per tutte le nuove tecnologie, è l'interrogativo di cui si stanno occupando i direttori delle riviste scientifiche: si deve citare ChatGpt tra gli autori dell'articolo scientifico? Un'implicazione questa che apre ad altri innumerevoli interrogativi, ad esempio se sia giusto incolpare un medico che sbaglia l'interpretazione di un esame dopo essere stato assistito da un sistema di Intelligenza Artificiale, che resta pur sempre un ammasso di ferraglia e che non potrà mai sostituire l'intelligenza umana, fallibile certo, ma insostituibile.

E non bisogna dimenticare, per l'appunto, la fallibilità di questi strumenti tecnologici che sfocerebbe inevitabilmente in fake news, attività di phishing, plagio, poca chiarezza sulla privacy. Tutti limiti che potrebbero essere risolti soltanto dall'abilità dell'uomo. E in sanità cosa potremo aspettarci? Med-PaLM. Anche in campo sanitario saremo dotati di un software progettato per rispondere a domande di carattere medico, sia da parte di professionisti sanitari che dei cittadini-pazienti.

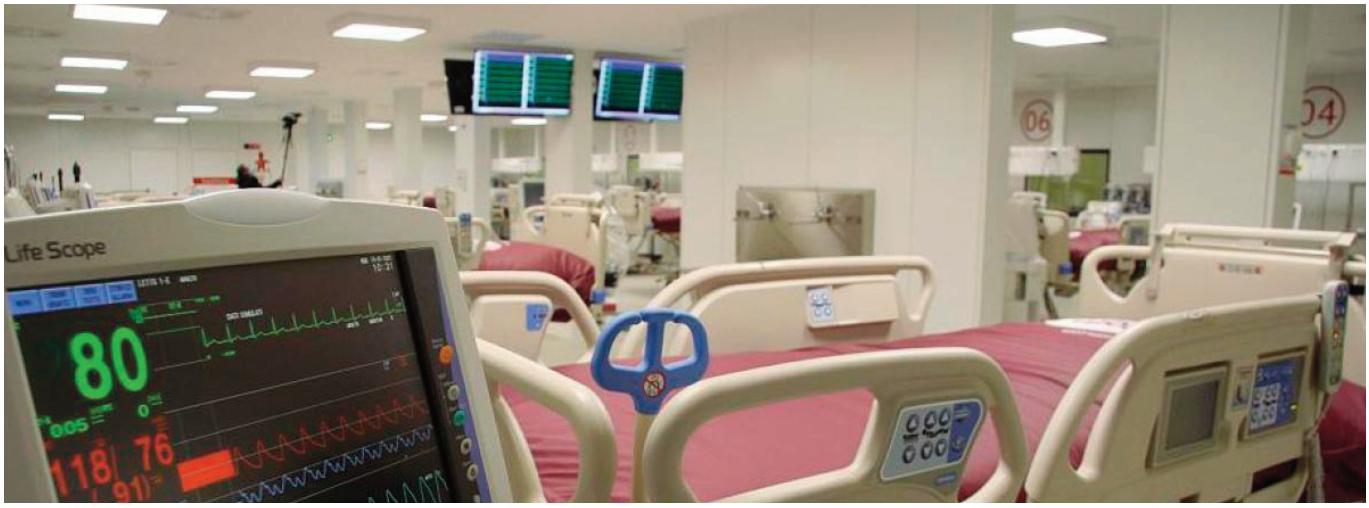
Med-PALM – che sta per Pathways Language Model - risponderebbe a domande a scelta multipla e a quesiti posti da professionisti e non professionisti del settore medico simulando le risposte date da un uomo in carne ed ossa col camice bianco. Un sistema che aiuterebbe i professionisti sanitari a gestire meglio la mole di lavoro e i pazienti da gestire e su cui i ricercatori stanno lavorando per attenuare il divario tra le riposte date dagli esperti clinici e l'Intelligenza Artificiale – come è accaduto ad un chatbot medico francese che qualche anno fa aveva consigliato ad un paziente in un contesto simulato di suicidarsi.

Si potrà davvero affermare che l'Intelligenza Artificiale potrà essere un valido alleato anche per medici e operatori sanitari nel dialogo con i pazienti? La risposta resta per il momento ancora incompiuta, o forse non del tutto: in Italia è stato progettato il primo simulatore umanoide europeo ed è stato installato nel Centro di simulazione medica e addestramento avanzato dell'Università di Trieste. L'umanoide, dal nome ''HAL s5301'', sarà un vero e proprio paziente adulto con il quale il personale in formazione all'ospedale di Cattinara potrà rapportarsi per consentire l'applicazione pratica delle principali tecniche medico-infermieristiche in uno scenario d'emergenza: il simulatore riproduce tutta la fisiologia corporea verso il quale gli studenti potranno approcciarsi come se si trattasse di un paziente in carne ed ossa, in un contesto sicuro e attuare le corrette strategie di prevenzione degli errori. Un mondo virtuale che consentirà agli studenti e agli specializzandi di affinare le proprie tecniche prima ancora di entrare in contatto con il mondo reale su un paziente quasi umano che suda, muove occhi e braccia, il tutto gestito da una sala regia adiacente alla sala. Uno scenario futuro proiettato sul presente in cui virtuale e reale saranno sempre più inscindibili.

Ospedali & territorio



Agenas: In Campania 4 ospedali da bollino rosso



Secondo l'ultimo rapporto Agenas, 4 tra i 12 ospedali della fascia di performance più bassa d'Italia sono in Campania: il Vanvitelli di Napoli, il Ruggi di Salerno, il Sant'Anna e San Sebastiano di Caserta e il San Pio di Benevento. «Più investimenti e miglioramento della fascia di performance», dice l'Agenas. Ma, nonostante gli incrementi di alcuni indicatori, in Campania ci sono quattro tra i dodici peggiori ospedali d'Italia. Questa l'analisi che emerge dal rapporto presentato il 24 maggio dall'Agenas, l'Agenzia Nazionale per i Servizi sanitari regionali che ne valuta l'efficienza e attualmente presieduta da Enrico Coscioni, ex consigliere regionale in Campania e vice presidente della Commissione Sanità tra il 2014 e il 2015, con Vincenzo De Luca presidente della Regione.

I quattro ospedali sono «equamente» distribuiti tra altrettante province: il Luigi Vanvitelli di Napoli, il Ruggi d'Aragona di Salerno, il Sant'Anna e San Sebastiano di Caserta e il San Pio di Benevento. Complessivamente, sui 53 ospedali analizzati in tutta Italia, soltanto 9 hanno fatto registrare livelli di prestazione alti (tutti al Nord), altri 32 sono risultati nella media (dove ci sono tutti gli ospedali della Campania al di fuori dei quattro citati), e 12 hanno ricevuto un livello basso di prestazioni. Nota dolente per il Sant'Anna e San Sebastiano di Caserta i tempi d'attesa particolarmente lunghi per gli interventi di tumore.

Tra gli indicatori analizzati, ci sono le performance del Pronto Soccorso (ovvero se siano in grado di fornire assistenza sanitaria entro 8 ore), i tempi di attesa, il numero di medici e infermieri per posti letti disponibili, il livello di obsolescenza di macchinari ed apparecchiature, i tassi di ricoveri ad alto rischio di inappropriatezza ed infine i bilanci in ordine

Ospedali & territorio

Pascale, una nuova speranza per i tumori provocati dall'amianto

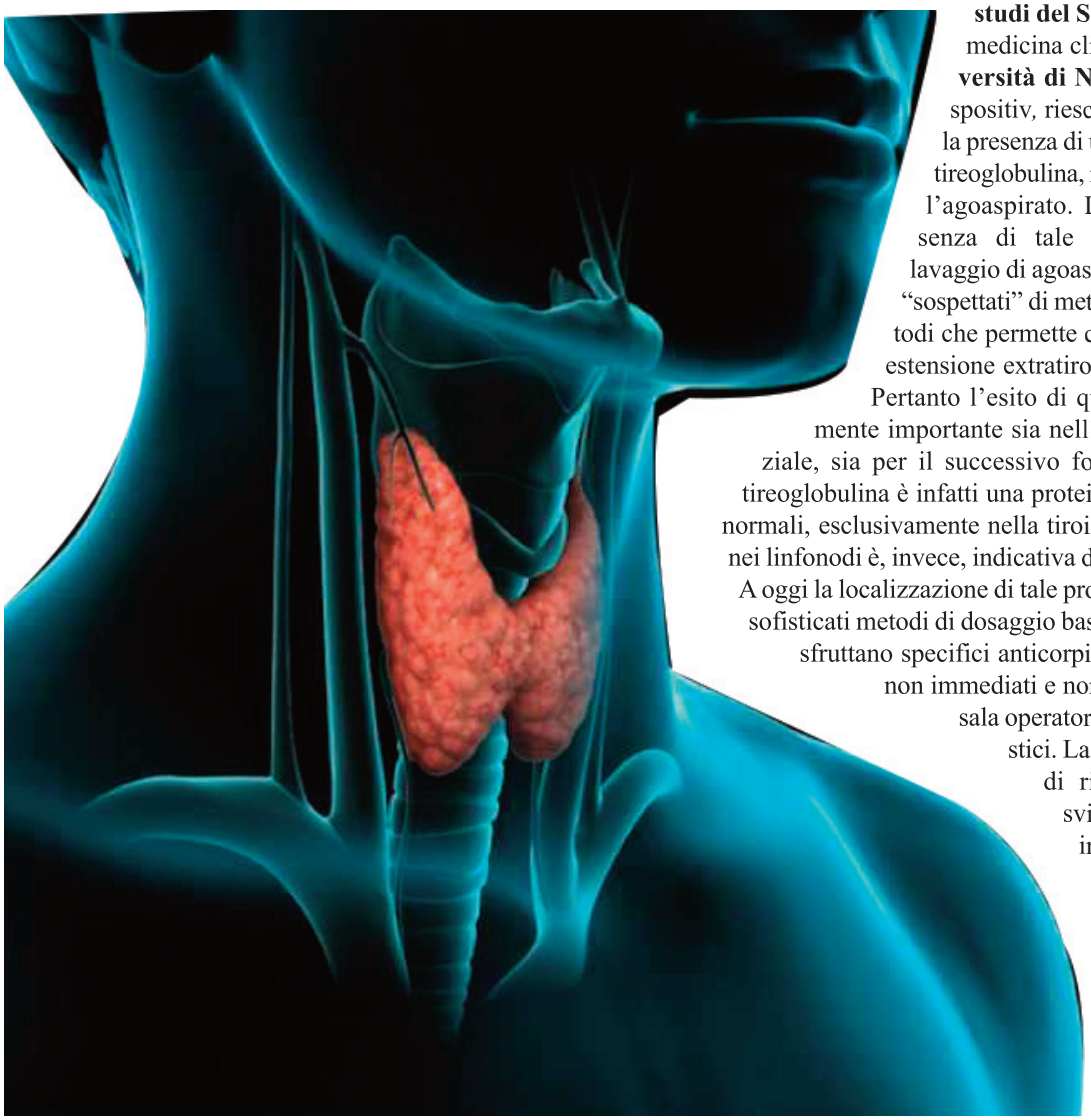
*Lo studio presentato negli Usa e coordinato dall'Istituto dei tumori Pascale di Napoli rappresenta una n*uova speranza per i tumori provocati dall'amianto. I risultati della ricerca sono stati presentati a Chicago, **all'American Society of Clinical Oncology** (Asco).

Lo studio internazionale di fase 3 ha valutato, si legge in una nota del Pascale, come nuovo trattamento di prima linea un farmaco immunoterapico, pembrolizumab, in combinazione con la chemioterapia per i pazienti con mesotelioma pleurico avanzato o metastatico non operabile. Pazienti che hanno lavorato per anni a stretto contatto con l'amianto. IND.227 è uno studio accademico condotto da 3 gruppi cooperativi, il Canadian Cancer Trials Group, il gruppo cooperativo italiano sui tumori toracici coordinato dall'Istituto Nazionale Tumori di Napoli e l'Intergruppo cooperativo sui tumori toracici francese. Nello studio IND.227, l'aggiunta di pembrolizumab alla chemioterapia con platino e pemetrexed ha determinato un miglioramento significativo della sopravvivenza globale, della sopravvivenza libera da progressione e del tasso di risposte obiettive dei pazienti con mesotelioma pleurico avanzato o metastatico non operabile.

Il mesotelioma pleurico è un tumore correlato all'esposizione all'amianto, e sebbene l'uso di questo materiale sia stato vietato in Italia ormai 30 anni fa, a causa del lungo periodo di latenza tra l'esposizione e l'insorgenza della malattia, l'incidenza del mesotelioma è ancora oggi in aumento. Peraltro, spesso questo tumore viene diagnosticato in stadio già avanzato e non operabile e la prognosi è molto infaustaInfatti, prima dei recenti risultati ottenuti con gli immunoterapici, la chemioterapia è stata per decenni l'unico trattamento disponibile, con risultati molto scarsi. La partecipazione a questo studio è stata quindi un'ottima opportunità per i pazienti italiani, come dimostrato dal fatto che circa metà dei 440 pazienti in studio sono italiani.

Tiroide. Ricerca Cnr, Università di Napoli e del Sannio

Sviluppato un sensore in fibra che potrebbe facilitare la diagnosi della patologia e l'individuazione delle terapie più appropriate a partire dalla rilevazione della presenza di tireoglobulina nel liquido di lavaggio dell'agoaspirato. l risultati, ottenuti grazie alla collaborazione tra Cnr, Università del Sannio e Università di Napoli Federico II, sono pubblicati sulla rivista Biosensors and Bioelectronics. E' il frutto di una ricerca nata dalla collaborazione fra il **Consiglio nazionale delle ricerche** di Napoli – l'Istituto per l'endocrinologia e l'oncologia "Gaetano Salvatore" (Cnr-Ieos), l'Istituto di scienze e tecnologie chimiche "Giulio Natta" (Cnr-Scitec) e l'Istituto di scienze applicate e sistemi intelligenti "Eduardo Caianiello" (Cnr-Isasi) – con il Dipartimento di ingegneria dell'**Università degli studi del Sannio** e il Dipartimento di medicina clinica e chirurgia dell'**Università di Napoli Federico II.** Il dispositiv, riesce a identificare e misurare la presenza di una particolare proteina, la tireoglobulina, nel liquido di lavaggio dell'agoaspirato. La valutazione della presenza di tale proteina nel liquido di lavaggio di agoaspirati ottenuti da linfonodi "sospettati" di metastasi è a oggi uno dei metodi che permette con certezza la diagnosi di estensione extratiroidea del tessuto tumorale. Pertanto l'esito di questo esame è particolarmente importante sia nell'approccio chirurgico iniziale, sia per il successivo follow-up dei pazienti. La tireoglobulina è infatti una proteina presente, in condizioni normali, esclusivamente nella tiroide. La sua identificazione nei linfonodi è, invece, indicativa della presenza di metastasi. A oggi la localizzazione di tale proteina richiede l'impego di sofisticati metodi di dosaggio basati su apparecchiature che sfruttano specifici anticorpi, con tempi di rilevazione non immediati e non facilmente applicabili in sala operatoria in caso di dubbi diagnostici. La novità ottenuta dal gruppo di ricerca consiste nell'aver sviluppato un nuovo sensore in fibra, basato sull'analisi della luce diffusa, che permette l'identificazione, in tempo reale e con elevata sensibilità, della tireoglobulina nel liquido di lavaggio dell'agoaspirato dei linfonodi tiroidei.



Ospedali & territorio

Unità di Medicina Nucleare al San Pio

Presso l'**azienda ospedaliera San Pio** di Benevento sarà realizzata una Unità di **Medicina Nucleare**. La struttura contribuirà a garantire l'erogazione di servizi di qualità con diagnosi più precise e veloci, con particolare riguardo alla prevenzione. L'intervento, che ha ricevuto uno stanziamento pari a 7 milioni di euro, prevede una costruzione situata nei pressi del padiglione San Pio che si estenderà su duemila metri quadri e sarà dotata di due tomografi Spect. I macchinari consentiranno di soddisfare esigenze diagnostiche, come nel caso dell'embolia polmonare, delle patologie oncologiche, cardiopatiche e urologiche e del Parkinson. Dopo il progetto definitivo, ora l'iter prevede l'affidamento della progettazione esecutiva.

"La medicina nucleare - ha affermato il direttore generale, **Maria Morgante** - rappresenta una grande occasione per garantire una nuova offerta sanitaria. Investire in tecnologie sempre più innovative e performanti, ai fini diagnostici e terapeutici, interpreta la mission del management aziendale, che in sinergia con le strutture amministrative della Regione, certifica salute e sicurezza nelle cure del cittadino-utente".

Diagnostica per immagini. Al «Moscati» nuova risonanza

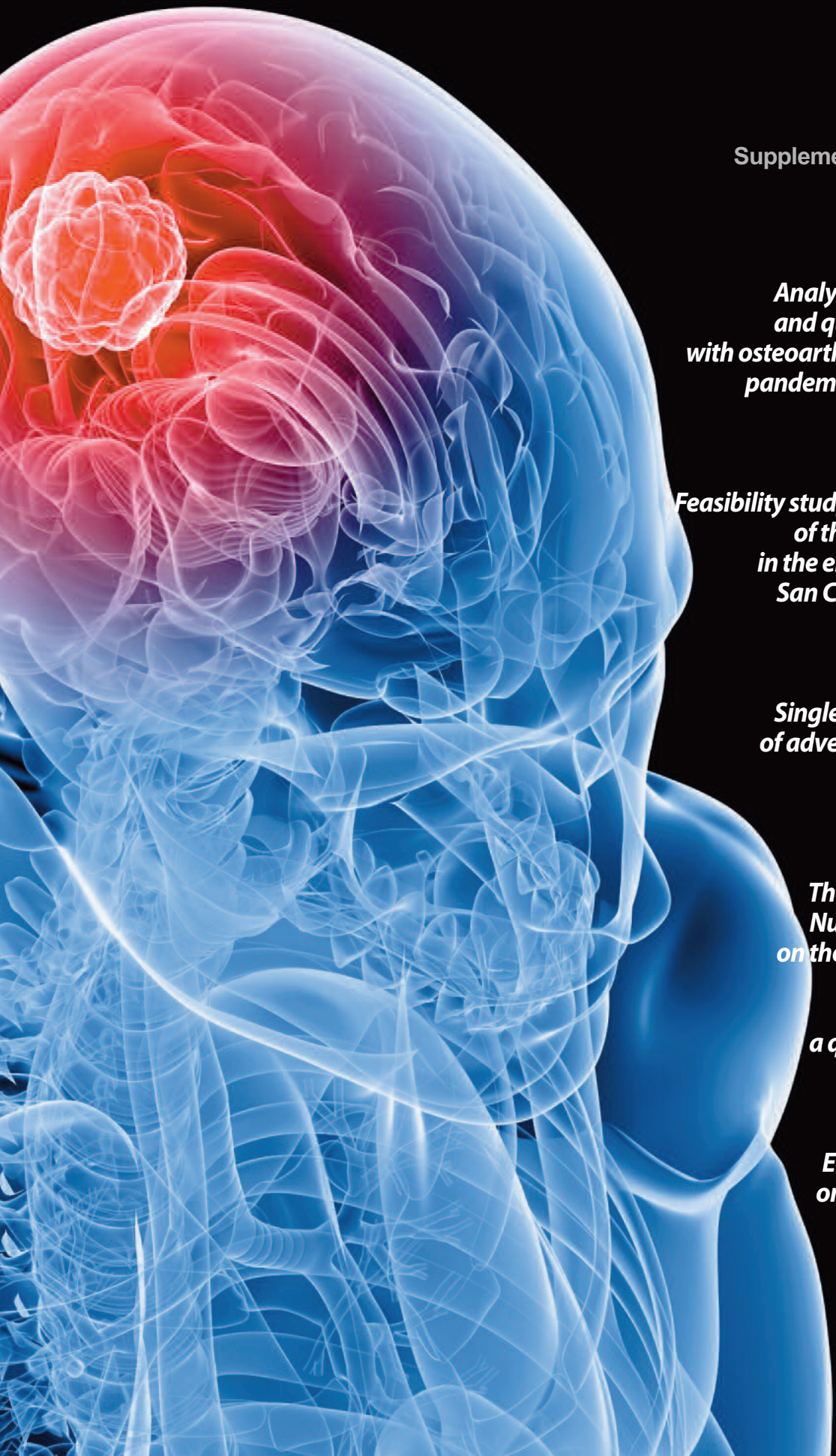
Un macchinario di ultima generazione che consente una risoluzione più performante dei dettagli anatomici e tempi più rapidi di esecuzione con maggiore comfort per il paziente. È la nuova risonanza magnetica 3 Tesla che da giovedì primo giugno entrerà in funzione presso l'Unità operativa dell'Azienda ospedaliera «San Giuseppe Moscati» di Avellino, diretta da Lanfranco Aquilino Musto. «È una apparecchiatura d'avanguardia- spiega Musto- grazie ad un sistema molto avanzato e integrato alle più aggiornate neuroradiologiche.

Insieme alle due nuove Tac e quattro ecografi al top della gamma installate di recente. «Grazie agli importanti investimenti in macchinari e strumentazioni di alta tecnologia -sottolinea il dg del 'Moscati', Renato Pizzuti- l'Azienda ha fatto registrare un significativo miglioramento nell'ultimo triennio confermato dall'Agenas».

Ospedali & territorio

Fondi Pnrr, a Caivano un ospedale di comunità

Caivano avrà un ospedale. L'importante contratto di comodato d'uso trentennale per l'ospedale di comunità e la casa di comunità è stato siglato dal responsabile al patrimonio del Comune di Caivano e dalla dirigente agli affari generali dell'Asl Napoli 2 Nord. "Le due struttura pubbliche - spiega il sindaco Enzo Falco - costeranno circa sei milioni di euro e rappresenteranno anche un'opportunità di riqualificazione del Parco Verde, visto che l'area individuata per la realizzazione di tale ospedale è un plesso della scuola Ada Negri". Il progetto - precisa Pierina Ariemma, già assessore comunale alla sanità, che durante il suo mandato ha seguito l'intero iter burocratico - è stato finanziato con i fondi del Pnrr ed è stato subito sposato dal governo locale di centrosinistra, che in questi mesi lo ha portato avanti sempre con grande determinazione con l'obiettivo di poter offrire ai nostri concittadini un indispensabile servizio sul territorio per le cure sanitarie, negato davvero per troppi anni".Un plauso particolare per questo storico traguardo - aggiunge la fascia tricolore - va ad Ariemma, a tutta l'amministrazione comunale, ai tecnici e ai funzionari dell'Asl Napoli 2 Nord".



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Analysis of psychosocial status and quality of life in the elderly with osteoarthritis during the Covid-19 pandemic: a cross sectional study

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NSC Nursing

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ANALYSIS OF PSYCHOSOCIAL STATUS AND QUALITY OF LIFE IN THE ELDERLY WITH OSTEOARTHRITIS DURING THE COVID-19 PANDEMIC: A CROSS SECTIONAL STUDY

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ABSTRACT

Introduction: Along with increasing age, there will also be an increasing tendency to get sick and have physical limitations (disabilities) due to a drastic decline in physical abilities. These conditions are the leading cause of high mortality and morbidity in the elderly, especially during the Covid-19 pandemic. The current study aims to analyze the relationship between psychosocial status and the quality of life of the elderly with osteoarthritis during the Covid-19 pandemic.

Materials and Methods: This cross-sectional study was located at a nursing home in Jambi, involving 351 randomly selected participants. Measure the psychosocial status of the elderly using the Indonesian version of the Self Reporting Questionnaire (SRQ) and the quality of life using the Indonesian version of the World Health Organization Quality of Life-Old (WHOQOL – OLD) questionnaire.

Results: Most elderly have a good quality of life, as many as 229 (65.1%), while a poor quality of life, as many as 30 people (8.5%). In the psychosocial variables, most respondents did not experience mental health disorders, as many as 260 people (74.1%). The Mann-Whitney test showed a significant relationship between Quality of Life and Psychosocial Status, in particular we obserbed in subjects without mental disorders in comparison to subjects with mental disorders a better quality of life, i.e. the elderly who do not suffer from mental disorders will show a tendency for a good quality of life.

Conclusions: Psychosocial status related to quality of life in the elderly with osteoarthritis during the Covid-19 pandemic. The elderly who do not suffer from mental disorders will show a tendency for a good quality of life.

Keywords: Elderly; Covid-19; Psychosocial; Quality of life

INTRODUCTION

Qualified elderly are elderly who, through the aging process, remain healthy and optimal physically, socially, and mentally to remain prosperous throughout life and participate in improving the quality of life as members of society [1,2]—osteoarthritis in the elderly results in limitations in carrying out daily activities independently. A study revealed that 2.6% of the elderly experienced total dependence, 1.2% with moderate support, and 96.3% with mild reliance [3]. Dependence, coupled with lifestyle changes, is one of the factors causing stress in the elderly [4,5].

The elderly with osteoarthritis who experience stress tend to experience sadness, and the body becomes weak, with reduced appetite and interest in all things [6,7]. As a result, they will experience delays in treatment, especially in the second year of the Covid-19 pandemic, where there is a statistical increase in cases in various parts of the world, including some areas in Indonesia, where the elderly are a group that is vulnerable to infection. The number of deaths continues to increase, especially in the elderly group [8–10]. If this condition is allowed to drag on, it will trigger depression. In addition, the elderly will find it difficult to motivate themselves to recover. The adaptation process that must undertake to all the changes experienced makes the elderly vulnerable to psychological disorders such as unstable emotional conditions, depression, or anxiety, and it may reduce the quality of life of the elderly [11,12].

Crisis in the elderly can be expressed as a condition of psychosocial disorders with characteristics including dependence on others, isolating themselves, or withdrawing from social activities for various reasons. The reasons include undergoing retirement, severe and prolonged illness, the death of a spouse, and undergoing health protocols during the Covid-19 period, where everyone must keep their distance and isolate themselves [6,13]. For the elderly, changing roles in the family, socio-economic, and social community resulted in setbacks in adapting to the new environment and interacting with the social environment [11,14].

Quality of life is a strategic issue that reflects the condition of the elderly in enjoying the rest of

their life and preparing to die peacefully. Therefore, factors affecting the quality of life of the elderly should be accommodated by the elderly, families, and health providers [15,16]. One of the health service providers on the first line is the Public Health Center (PHC). PHC as a health service provider and acting as a center for community health development in its working area should develop health programs based on problems that develop in the community [17,18].

Psychological factors, as assessed by the Geriatric Depression Scale, and sociodemographic characteristics, such as marital status, income and leisure activities, had an impact on quality of life [19]. Other studies show that apart from social demographic factors, social organization and social support affect the quality of life of the elderly [20], and the ability to perform daily routine activities is the strongest predictor [21]. In addition to the aforementioned factors, it is necessary to explore the effects of the psychosocial status of the elderly during the Covid-19 pandemic because the elderly are prone to depression. Preliminary research shows an increase in depression, post-traumatic anxiety, and adjustment disorders in the elderly, and the risk of suicide increases sharply. Stress can also lower the body's immunity, worsening the condition of the elderly who are already physically weak. Patients with a previous psychiatric disorder will tend to experience worsening [3,20].

The elderly group is very vulnerable to contracting Covid-19, plus declining physical health conditions are increasingly impacting the decline in the quality of life of the elderly, increasing mortality rates in the elderly group. For this reason, it is necessary to survey psychosocial health status, response, and quality of life during the Covid-19 pandemic. This study explores the psychosocial problems of the elderly with osteoarthritis during the Covid-19 pandemic.

MATERIALS AND METHODS

Study design

The type of research is analytic observational using the research design is cross sectional study.

Study Population

This study was conducted at the Jambi Nursing Home involving 351 randomly selected participants with the following sample criteria including age 55 years, living in Jambi Nursing Home for at least one year.

Instruments

Psychosocial status was measured using the Indonesian version of the Self-Reporting Questionnaire (SRQ), which consisted of 29 questions about the respondent's condition during the last 30 days [21]. The Indonesian version of the SRQ-20 has 5 dimensions, namely energy, cognitive, depression, physiology, and anxiety. The YES answers to items 1 to 20 (symptoms of neurosis) indicated a psychological problem, and item number 21 meant using a psychoactive substance. One YES answer from items 22 to 24 (psychotic symptoms) indicates a severe problem and needs further treatment. One YES answer to items 25-29 indicates the presence of symptoms of PTSD (Post Traumatic Stress Disorder).

Psychosocial status was categorized into suffering and not suffering from mental disorders. A mental disorder is declared if at least 5 neurotic symptoms are found or there is at least 1 psychotic or PTSD (Post Traumatic Stress Disorder) symptom on the Self-Reporting Questionnaire (SRQ). Meanwhile, it is declared not suffering from mental disorders if there are only 4 items of neurotic symptoms and there are no psychotic symptoms or PTSD (Post Traumatic Stress Disorder) symptom on the Self-Reporting Questionnaire (SRQ). The variable “Psychosocial status” assigning the scores: 1 = suffering and 0 = not suffering for mental disorders.

Measurement of quality of life used the Indonesian version of the World Health Organization Quality of Life-Old (WHOQOL – OLD) questionnaire, which contains the respondents' living conditions in the last four weeks consisting of 26 questions [22]. The variable “Quality of Life”, assigning the scores: 1 = poor, 2= moderate, 3 = good, and 4 = very good for each subject.

The Indonesian version of the World Health Organization Quality of Life-Old (WHOQOL – OLD) questionnaire consists of the Herth Hope Index, Perceived Social Support from Friends (PSS-Fr), Perceived Social Support from Family (PSS-Fa) [22]. The Indonesian version of the WHOQOL-BREFF questionnaire has been tested for validity and reliability by Priastana et al. [22] with a r_{count} value (0.361) and a Cronbach Alpha value = 0.965, so researchers do not need to test the validity and reliability again.

Sample size

The number of samples involved was 351 participants who were randomly selected from the population. Calculating the number of samples is determined using the Slovin formula [23], where from 2.880 people in the population, d = 0.05, the number of samples is 351.

Ethical Consideration

No economic incentives were offered or provided for participation in this study. The study protocol matched the Declaration of Helsinki ethical guidelines for clinical studies. This research has been approved by the Health Research Ethics Commission of the Health Polytechnic of the Jambi Ministry of Health with the number LB.02.06/2/111/2022.

Statistical analysis

Data are presented as number and percentage for categorical variables, and continuous data expressed as the mean ± standard deviation (SD) or median with Interquartile Range (IQR). The results of data normality analysis using the Kolmogorov Smirnov test showed that the data were not normally distributed. We found the relationship between Quality of Life and Mental disorders using the Mann–Whitney test (ordinal data vs dichotomous).

We considered all tests with P-value< 0.05 as significant. The statistical analysis was performed by SPSS software version 16.0.

RESULTS

The distribution of the characteristics of the research respondents is presented in table 1.

Variables	N	%
Age (years)		
[55-65[	186	53
[65-75[	165	47
Gender		
Male	225	64.1
Female	126	35.9
Educational level		
Basic	33	9.4
Junior School	68	19.4
High school	227	64.7
Bachelor	23	6.5

Table 1. *Distribution of the Respondents characteristics*

Table 1 show that most respondents were 55-64 years, as many as 186 (53%). Most sexes are male, with as many as 225 (64.1%) respondents. Most respondents had a high school education, with 227 (64.7%).

Table 2 shows that most elderly have a good quality of life, as many as 229 (65.1%), while a poor quality of life, as many as 30 people (8.5%).

In the psychosocial variables, most respondents did not experience mental health disorders, as many as 260 people (74.1%).

Variables	Median (Q1, Q3)	N	%
Quality of Life	65 (52, 77)		
21 - 40 (Poor)		30	8.5
41 – 60 (Moderate)		85	24.4
61 – 80 (Good)		229	65.1
81 – 100 (Very Good)		7	1.0
Psychosocial Status	3 (2, 8.5)		
No mental health problems		260	74.1
Neurotic symptoms		10	2.8
Psychotic symptoms		3	0.9
PTSD (Post Traumatic Stress Disorder)		78	22.2

Table 2. *Distribution of study variables*

Table 3 shows that of the 91 respondents who do have mental disorders, there are 46 respondents with a moderate quality of life category. Of the 260 respondents with not mental disorders, there are 218 respondents have a good quality of life category

Psychosocial Status	Quality of Life					
	Poor N (%)	Moderate N (%)	Good N (%)	Very good (%)	Total N (%)	Median (Q1, Q3)
Mental disorders	29(31.9)	46(50.0)	11(12.1)	5(5.5)	91(100)	2(1, 2)
No mental disorders	2(0.8)	38(14.6)	218(83.8)	2(0.8)	260(100)	3(3, 3)
Total	31(8.8)	84(23.9)	229(65.2)	7(2.0)	351	

Table 3. *Relationship between Psychosocial Status and Quality of Life in the Elderly*

The Mann-Whitney test showed a significant relationship between Quality of Life and Psychosocial Status, in particular we obserbed in subjects without mental disorders in comparison to subjects

with mental disorders a better quality of life (median: 3 vs 2, p<0.0001), i.e. the elderly who do not suffer from mental disorders will show a tendency for a good quality of life.

DISCUSSION

Elderly stress arises from anxiety about various diseases, including Covid-19. The current study aims to analyze the relationship between psychosocial conditions and the quality of life of the elderly with osteoarthritis during the Covid-19 pandemic.

The results of this study reported that on the psychosocial variables of the elderly, most of the elderly did not experience mental health disorders, as many as 260 people (74.1%) and the elderly and around 25.9% of the elderly experienced mental disorders ranging from PTSD (Post Traumatic Stress Disorder), neurotic and psychotic. Mental disorders experienced by the elderly include the elderly avoiding interacting with other people, decreasing interest in routine activities, always remembering the impact of Covid-19 and feeling disturbed, lack of appetite, not sleeping well, and feeling anxious. Symptoms of this health disorder significantly interfere with the quality of life of the elderly [24].

Anxiety, as a symptom of stress in the elderly in the Covid-19 pandemic situation, should receive support from spouses and family members by being willing to listen to the complaints of the elderly, being able and having time always to be near and accompany the elderly. Elderly family members are also responsible and act as friends of the elderly in dealing with their day-to-day. Likewise, in elderly stress, there is family support to maintain health by supporting the health of the elderly [25].

The increasing number of Covid-19 cases harms everyone's mentality, especially the elderly. SARS-CoV-2 is highly contagious. Even some cases develop into respiratory failure, which will progress to death. Deterioration of the patient's condition is more common in the elderly and those with previous co morbidities (hypertension, diabetes, heart disease) [26,27]. The elderly group (elderly)

has physical and psychological weaknesses during the Covid-19 pandemic. About 20% of deaths with Covid-19 in China are over 60 years old [28].

The effects of quarantine are loneliness, sadness, and prolonged stress. Preliminary research suggests an increase in depression, post-traumatic stress, adjustment disorders in the elderly, and the risk of suicide [29]. Stress lowers immunity. This situation can worsen the condition of the elderly, who are already physically weak. Patients with previous psychiatric conditions will tend to experience worsening, one of which is the problem of osteoarthritis [30].

The main problem often experienced by the elderly with osteoarthritis is joint pain. Pain will increase when doing activities, which limits a person's activities. The decrease in physical activity will affect the patient's daily life activities and the quality of his life. A further consequence of osteoarthritis is decreased functional activity, especially difficulty rising to a sitting position, walking, and going up and down stairs [31,32]. The elderly with osteoarthritis will experience joint and muscle dysfunction, so they will experience limited movement, decreased strength, and muscle balance. About 18% experience difficulties and limitations in activities, loss of function of work capacity, and decreased quality of life [33,34].

According to Hong's study [35], the elderly with osteoarthritis have a poorer quality of life than the elderly without osteoarthritis. This condition is associated with decreased physical function due to joint inflammation caused by joint damage. Therefore, it is highly recommended that families take care of the mental health of the elderly during Covid-19 so that it does not affect their physical health. Maintaining the mental health of the elderly during the Covid-19 pandemic requires assistance from all parties. Families, health workers, the government, and the elderly must cooperate. In addition, the knowledge, attitude, and behavior of the elderly need to be improved to deal with the Covid-19 pandemic. Adaptation and survival are the keys to overcoming this pandemic condition [29].

The primary strategy is to ensure that the elderly always maintain physical distance, wash their

hands, use masks, eat nutritious foods, and do light exercise [36,37]. Other activities that can be done indoors, such as reading books, painting, or watching movies, can still be done. Explanations should be given as concisely as possible to the elderly. If the elderly understand, they will feel safe and peaceful and improve their quality of life. Social relations with family and friends must still be carried out through communication tools. Emotional support is crucial for the elderly who live alone. They are prone to anxiety and confusion during this uncertain period [9,38].

Visits to the doctor should be replaced with telemedicine. Patients can consult via Whatsapp, telephone, short message, Zoom, or any application. All planned surgeries should be postponed, such as cataracts, hernias, and kneecap replacements [38]. Any redundant information about Covid-19 should be reduced to prevent panic and misunderstanding. Information should focus on preventive measures, not on myths alone. Health information, updates about Covid-19, and psychological consultations should be provided by telephone or online by the government [30,39]. Although the elderly may appear weak from the outside, the family must try to give them a sense of freedom, respect, and genuine care. The elderly must still be involved in decision-making [40].

The World Health Organization (WHO) emphasizes the importance of psychosocial needs for the elderly [38]. The government is expected to provide basic needs for the elderly, especially those less well off financially and psychologically. The items that is important to prepare including food, medicines, and disinfectants. The need for security is essential and should not be ignored [41].

The strength of this study is that the two questionnaires used, namely the Self Reporting Questionnaire (SRQ) and the World Health Organization Quality of Life-Old (WHOQOL – OLD) questionnaire, have used the Indonesian version of the questionnaire to reduce research bias.

CONCLUSION

Psychosocial status related to quality of life in the elderly with osteoarthritis during the Covid-19 pandemic. The elderly who do not suffer from mental disorders will show a tendency for a good quality of life.

LIMITATIONS

The research location only involves 1 place so that it cannot compare the results of similar studies in different populations, so in the future research must be carried out involving several regions. Another limitation is the cross-sectional research design because it only measures the current condition of the variables, so it can cause research results to be biased.

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COMPETING INTERESTS STATEMENT

There are no competing interests for this study.

AUTHORS' CONTRIBUTION

All authors equally contributed to preparing this article.

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FEASIBILITY STUDY FOR THE IMPLEMENTATION OF THE *SEE AND TREAT* PATHWAY IN THE EMERGENCY DEPARTMENT OF SAN CAMILLO-FORLANINI HOSPITAL

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ABSTRACT

Introduction: To date, Emergency Department *overcrowding* represents one of the most important problems regarding the organisation of emergency healthcare. *See and Treat* was devised in England around the 1980s to provide an effective solution to the *overcrowding* issue. The Emergency Nurse Practitioner indicates a faster pathway in selected patients with certain characteristics. This model translates into a reduction in waiting times while maintaining the same quality of care.

Aim: To evaluate the potential benefits for patients of the implementation of the *See and Treat* model within the Emergency Department.

Materials and Methods: Using the GIPSE system, all Emergency Department entries from 2019 have been selected. Minor codes in the triage phase have been considered, as well as those potentially falling within the *See and Treat* protocol. Each included case has been associated to a *See and Treat* diagnosis. The waiting time and the time spent in the Emergency Department were derived from the data collected.

Results: 9.41% of the sample is eligible for the *See and Treat* method, with an average waiting time of one hour and peaks of almost 4 hours for white codes. The application of the *See and Treat* model to the population covered by our study would reduce the waiting times at the Emergency Department by 6.99%, reduce the simultaneous presence of users on the Emergency Department by 8.88% and reduce the stay for other minor codes by 4.38%.

Discussion: The percentage of patients treatable in the *See and Treat* system (11%) is in line with the Tuscany trial but statistically lower than the international context (from 63% to 90%). The results obtained from this study showed the significant impact that the *See and Treat* model could have on reducing *overcrowding*, positively affecting both users and staff.

Keywords: See and Treat; Emergency Department; overcrowding; advanced nursing skills.

INTRODUCTION

Overcrowding of the Emergency Department (ED) is currently one of the most important problems related to the organisation of emergency health services [1]. In the last decade, the decrease in the number of public and private hospital facilities [2], the growth of the population, the increase in frail patients [3,4] and the population that is not included in the health registry [5], the lack of knowledge of alternative services and the citizen's belief that they will find a quick solution to a real or perceived problem in the ER [6] have had negative repercussions both on waiting and intervention times, and on the ability of the emergency system to provide adequate solutions to users. All this has burdened the National Health System in terms of quality and efficiency of services [7] also due to a reduction in the number of beds in the ordinary departments and lack of investment in the national network [8].

See and Treat was devised in England in the 1980s to provide an effective response to overcrowding [2]. The figure in charge of this role is the Emergency Nurse Practitioner, who in addition to establishing the usual priorities, indicates a faster professional pathway where patients selected for minor health problems are assessed and treated immediately [9]. The nursing staff operates independently on the basis of protocols that include the possibility of requesting specific tests and prescriptions for drugs, according to current legislation [10]. Studies in the literature show how the introduction of this figure reduces waiting times and overcrowding of the ER [1,11] while guaranteeing the same quality of care [12]. The Emergency Nurse Practitioner is present on a large scale in Northern Europe where nurses with advanced skills play a central role in the *See and Treat* model, with direct responsibility for the procedures carried out according to certain pre-established protocols [9,13].

In Italy, the *See and Treat* model has been applied in the Tuscany Region, [14] which, since 2010, has decided to engage in an experimentation project to carry out a profound organisational renewal of emergency departments; this experimentation has resulted in an improvement in the efficiency of

ERs, has optimised the management of less critical cases, has reduced waiting times, has improved staff morale, reducing the aggressiveness of users and using nursing and medical resources more appropriately [15,16]. To date, Tuscany represents the only region in which a *See and Treat* model has been implemented in the safe treatment and discharge of users who access the ER for minor problems, thanks to a theoretical-practical training course for a total of 180 hours (organisational, operational and relational sections) together with work experience in the emergency room of at least 3 years [16].

Objective of the study

The objective of this study is to evaluate the potential benefits for patients accessing the ED of San Camillo-Forlanini Hospital, Rome, in the event of implementation by the Lazio Region of the *See and Treat* model.

MATERIALS AND METHODS

Sampling and Eligibility

In this paper, with the authorisation of the Health Management of the San Camillo-Forlanini Hospital in Rome, all the accesses to the Emergency Department during the year 2019 considered as minor codes in the triage phase and that potentially fell within the protocols defined by the Tuscany Region for *See and Treat* [14] were selected, initially by colour code (in force in 2019) and subsequently stratified according a triage statement by operators trained for this activity. Men and women over the age of 16, registered between 1 January 2019 and 31 December 2019, were included. Patients with minor codes (white and green codes) and who had the following items coded in the GIPSE (Emergency Department Information Management) system as their main triage issue were included: trauma or burns; other symptoms and disorders; dyspnoea; intoxication; urological symptoms and disorders; abdominal pain; other nervous system symptoms; allergic reaction; acute

neurological syndrome; rhythm disorder; dermatological syndromes or disorders; non-traumatic haemorrhage; arterial hypertension; ENT syndromes and disorders; psychomotor agitation; chest pain and ophthalmological symptoms or disorders. Patients waiting for a visit who absconded from the ED due to waiting were also included as they contributed to the overcrowding figure. Patients with major codes (Red and Yellow) were excluded. Some problems defined in Tuscany Region Resolution [14], which did not congruently adhere to the admission procedures for patients of the San Camillo-Forlanini Hospital Emergency Department, such as paediatric and gynaecological patients, which belong to specific and separate pathways, were excluded.

Tools

The cases under study were identified by means of the GIPSE programme and subsequently collected in a spreadsheet; the division was made in chronological order, by work shift (morning, afternoon and night) using the inclusion and exclusion criteria described above. Each case included was associated with a *See and Treat* Diagnosis. Information such as age, gender, nationality, triage problem, colour code, date and time of admission, date and time of chart opening, date and time of discharge, access mode, day of the week, discharge to home or outpatient clinic or patient absent on call, triage statement and discharge medical diagnosis were coded. By comparing the admission, history-taking and discharge times, two further parameters were derived from those in our possession: waiting time and length of stay in the emergency department (data not present in GIPSE). The same methodology was subsequently applied to all ineligible patients in the *See and Treat* pathway to assess for differences.

Ethical Considerations

The study was authorised on 10 March 2021 by the Medical Directorate of San Camillo – Forlanini Hospital. No formal approval by the Local Ethics Committee was required for this study. All data

were collected in aggregate form, and the researchers acted in accordance with the ethical considerations of the Declaration of Helsinki.

Statistical Analysis

Data on continuous variables (age, waiting time and time spent in the department) are presented in mean ± SD (Standard Deviation) or median (Q1: 25th centile – Q3: 75th centile); while categorical variables are presented as absolute frequency (n) and percentages (%).

The associations between categorical variables were evaluated through the χ^2 test; while the difference between two proportions was tested by the z test between two proportions.

The normality/symmetry of the continuous variables (age, waiting time and time spent in the department) compared to the groups (white *vs.* green, weekdays *vs.* holidays, females *vs.* males, Italians *vs.* foreigners, age classes: ≤48 *vs.* >48 years) was tested with the Shapiro-Wilk test, the Quantile-Quantile chart control and the verification of the presence of asymmetry and kurtosis.

The comparison between the above-mentioned groups and the continuous variables was tested using the Mann-Whitney test (absence of normality/symmetry); while the Kruskal-Wallis test (absence of normality of the residuals) was used to compare the days of the week and the work shift with respect to the continuous variables (age, waiting time and time spent in the department), the subsequent *post-hoc* analysis was performed using the Games-Howell method (due to absence of homoschedasticity).

All analyses were performed using SAS v.9.4 and JMP PRO v. 17 software (Institute Inc., Cary, NC, USA). A *p-value* < 0.05 was considered statistically significant.

RESULTS

The period under study was between 01/01/2019 and 31/12/2019; from the analysis of 29019

ED files divided into three shifts (morning, afternoon and night), 2731 patients eligible for *See and*

Treat were selected, equal to 9.41% of the sample. Table 1 summarises the general data of patients eligible for *See and Treat* and those in the emergency department.

Parameters	**n (%)**
Gender	
Male	1605 (58.77)
Females	1126 (41.23)
Age* (years)	48.47±18.77 48 (33 - 60)
Nationality	
Italian	2172 (79.53)
Foreign	559 (20.47)
Code	
White	186 (6.81)
Green	2545 (93.19)
Shift	
Morning	1009 (36.95)
Afternoon	951 (34.82)
Night	771 (28.23)
Weekly accesses	
Monday	386 (14.13)
Tuesday	394 (14.43)
Wednesday	379 (13.88)
Thursday	373 (13.66)
Friday	377 (13.80)
Saturday	392 (14.35)
Sunday	430 (15.75)
Waiting time* (hours:minutes:seconds)	01:32:43±02:15:10 01:00:00 (00:23:00 - 02:19:00)
Time spent in the department * (hours:minutes:seconds)	02:58:15±04:20:39 02:09:00 (01:11:00 - 03:36:00)

*data presented both as mean±SD and as median (Q1: 25th centile – Q3: 75th centile)

Table 1. *Socio-demographic and emergency department characteristics*

Analysis by colour code shows that 93.2% (n=2545) of patients were assigned a green code, while the rest were assigned a white code, without differences in the assignment of the colour code

between males and females (χ^2 test, p=0.57) and between age and colour code (Mann-Whitney test, p=0.70); Users assigned a White code waited a median time of 01^{hr}48':30" more than the green codes (Mann-Whitney test, p<0.0001) and spent 01^{hr}:24':00" longer in the emergency department than the green codes (Mann-Whitney test, p<0.0001), as shown in table 2.

The majority of users were male at 58.8% (n=1605), the median age of patients was 48 years (Q1: 33 – Q3: 60 years), while the mean was 48.47±18.77 years. The median age of females was 49 years (Q1: 35 – Q3: 62 years), while the mean was 49.93±19.11 years. The median age of males was 47 years (Q1: 32 – Q3: 59), while the mean was 47.45±18.46 years (comparison Females *vs.* Males: Mann-Whitney test, p=0.001), with a more representative age group in the under-48 age group (52.18%) compared to those older than 48 years (47.82%) (z-test for two proportions, p=0.001).

Gender is associated with age group with a cut-off of 48 years (≤48 years – Female/Male: 555 (38.95)/870 (61.05) *vs.* >48 years – Female/Male: 571 (43.72)/735 (56.28), χ^2 test, p=0.01). The waiting time after triage before the compilation of the medical history is not affected by either age group or gender (Mann-Whitney test, p=0.71 and p=0.055, respectively).

Gender does not affect the time spent in the emergency department (Mann-Whitney test, p=0.99), while there is an increase in the median time spent in the ED in patients over 48 years of 12 minutes (Mann-Whitney test, p=0.001), a data item highlighted in table 2.

79.5% of users were Italian while 20.5% of the sample came from other countries. Foreign nationality (table 2) affects waiting time, increasing it by a median of 27 minutes (Mann-Whitney test, p<0.0001) and time spent in the ED is increased by a median of 26 minutes (Mann-Whitney test, p<0.0001).

Parameters	Code		*p*
	White Median (Q1 - Q3)	Green Median (Q1 - Q3)	
Waiting time (hours:minutes:seconds)	02:44:30 (01:18:00 - 04:38:45)	00:56:00 (00:22:00 - 02:05:00)	**<0.0001**
Time spent in the department (hours:minutes:seconds)	03:30:30 (01:42:00 - 05:32:00)	02:06:00 (01:10:00 - 03:27:00)	**<0.0001**
Parameters	**Age group**		*p*
	≤48 Median (Q1 - Q3)	>48 Median (Q1 - Q3)	
Waiting time (hours: minutes: seconds)	00:56:30 (00:24:00 - 02:13:00)	01:04:00 (00:21:00 - 02:21:00)	0.71
Time spent in the department (hours: minutes: seconds)	02:05:00 (01:10:00 - 03:25:00)	02:17:00 (01:13:45 - 03:50:00)	**0.001**
Parameters	**Nationality**		*p*
	Italian Median (Q1 - Q3)	Foreign Median (Q1- Q3)	
Waiting time (hours: minutes: seconds)	00:55:00 (00:21:00 - 02:06:00)	01:22:00 (00:33:00 - 03:02:00)	**<0.0001**
Time spent in the department (hours: minutes: seconds)	02:04:00 (01:07:00 - 03:26:00)	02:30:00 (01:23:00 - 04:10:00)	**<0.0001**

Q1: 25th centile, Q3: 75th centile

Table 2. *Difference of waiting time and time spent in the department with respect to code, age group and nationality.*

Accesses during the different days of the week were homogeneous except for a peak of influx on Sundays (Figure 1); however, no differences were found between access on weekdays *versus* holidays with gender (χ^2 test , p=0.94), age (Mann-Whitney test, p=0.80), waiting time (Mann-Whitney test, p=0.38) and time spent in the ED (Mann-Whitney test, p=0.10). Accesses in the various months of the year were uniform except for the month of January where there was a greater influx equal to 10.9% of the total.

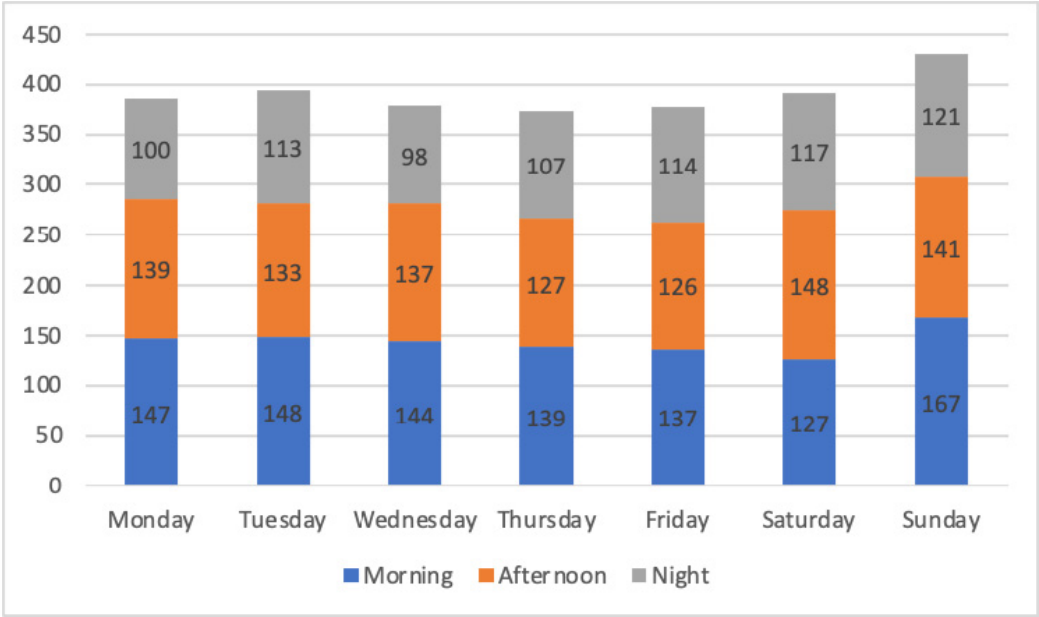

Figure 1. *Accesses by day of the week and by shift*

The analysis of accesses conducted with respect to work shifts (morning: 07:00 - 13:30, afternoon 13:30 - 19:50, night 19:50 - 07:00) showed a greater influx in the morning shift (36.9%) followed by the afternoon shift (34.8%) while the remaining 28.2% of the patients included came in during the night shift (χ^2 test, p=0.02) (Figure 1).

The *post-hoc* analysis (table 3) shows that the median age of patients tends to be higher in the morning shift compared to the afternoon shift (Kruskal-Wallis test and Games-Howell test, p<0.0001) and the night shift (Games-Howell test, p<0.0001). The median waiting time is 22 minutes longer in the morning shift than in the afternoon shift (Kruskal-Wallis test and Games-Howell test, p<0.0001) and 25 minutes longer than in the night shift (Kruskal-Wallis test and Games-Howell test, p<0.0001). The median time spent in the ED is 12 minutes shorter in the morning shift compared to the afternoon shift (Kruskal-Wallis test and Games-Howell test, p=0.001) and 8 minutes longer in the afternoon shift compared to the night shift (Kruskal-Wallis test and Games-Howell test, p=0.003).

	Shift			
Parameters	Morning Median (Q1 – Q3)	Afternoon Median (Q1 – Q3)	Night Median (Q1 – Q3)	*P*
Gender* (F/M)	441 (43.71)/568 (56.29)	399 (41.96)/552 (58.04)	286 (37.09)/485 (61.91)	**0.02**
Age (years)	51 (38 - 65)	46 (31 - 60)	45 (31 - 56)	**<0.0001**
Waiting time (hours:minutes:seconds)	00:46:00 (00:17:00 - 01:44:00)	01:08:00 (00:27:00 - 02:42:00)	01:11:00 (00:28:00 - 02:30:00)	**<0.0001**
Time spent in the ED (hours:minutes:seconds)	02:04:00 (01:05:00 - 03:22:30)	02:15:00 (01:18:00 - 03:54:00)	02:08:00 (01:08:00 - 03:31:00)	**0.001**
	***Post-hoc* analysis**			
Age: Morning *vs.* Night, *p*<**0.0001**, Morning *vs.* Afternoon, *p*<**0.0001** Afternoon *vs.* Night, *p*=0.25		Waiting time: Morning *vs.* Night, *p*<**0.0001**, Morning *vs.* Afternoon, *p*<**0.0001** Afternoon *vs.* Night, *p*=0.90	Time spent in the ED: Morning *vs.* Night, *p*=0.79, Morning *vs.* Afternoon, *p*=**0.001** Afternoon *vs.* Night, *p*=**0.03**	

*data presented as absolute frequency (%), Q1: 25th centile, Q3: 75th centile

Table 3. *Differences between the variables indicated and the shift*

By dividing patients by the categories defined by the model proposed by the Tuscany region [10], 57.7% of the sample came to the ED for trauma-related problems and 12% for musculoskeletal problems; small wounds, manageable through the *See and Treat* model were detected in 27.8% of cases. 81.1% of the patients completed the course of treatment while the rate of leaving the ED without receiving any treatment was found to be 16.2%. Among these users, about one in four (23.5%) had been assigned a white code. Of the selected patients, 18.5% did not need an estimation of days of illness, while 64% of them had a prognosis of 1 to 7 days; 36.4% of the sample were scheduled for a follow-up appointment in outpatient facilities. Excluding from our study population the patients eligible for *See and Treat* (thus creating a parallel pathway for 9.41% of the patients attending the ED) would have led to an average reduction in waiting times at the ED of 6.99%; the simultaneous presence of users in the ED would have decreased on average from 84.14 to 76.5 with

a decrease of 8.88%. By freeing up resources, it would have been possible to provide each patient with a minor code, not included in the *See and Treat* pathway, with 19 minutes more of hospital care, thus achieving a reduction in the length of stay in the ED for minor codes of 4.38%.

DISCUSSION

The objective of this study was to evaluate the potential benefits for patients attending the ED of the San Camillo-Forlanini Hospital in Rome if the *See and Treat* model had been implemented by the Lazio Region. The results obtained showed that the percentage of patients treatable through the *See and Treat* regimen in our study (9.4%) is in line with that of the Tuscany trial where 11% of the patients in the sample fell into this category [16]. However, these data are not in line with the international literature, which shows that the use of the *See and Treat* model increases the percentage of patients seen from 63% to 90% [1]. This difference could be attributed to the fact that, in Italy, the figure of the Emergency Nurse Practitioner is not recognised [17], consequently the nurse specialised in first aid interventions, thus defined by the Tuscany region after participation in the pre-established training course to provide care in the *See and Treat* model [14] has less professional autonomy and can treat a limited number of issues [18,19]. In the study presented, the frequency of green codes is significantly higher (93.2%) than that of white codes, which by definition are considered inappropriate in an emergency department [20]. This figure is consistent with that of the 2010 Nati study, which described the management of white and green codes in the Emergency Department, by general practitioners, which reported 88.9% of green codes compared to 11.1% of white codes [21]. Of the patients selected, a considerable portion, 20.5%, was of foreign origin, a figure greater than the results of other studies carried out in Italy where the number of accesses to the ED by foreign citizens is 13% [22]; they waited longer than Italians both in terms of admission to the EDand their stay there. This figure can be linked to the difficulty of accessing health services for foreigners, who come to the ED to solve their health problems [21]. The mean

age of the sample (48.5 years) was found to be in line with the study of Nati *et al.* where the age of the selected patients was 48.3 years [21]; patients over 48 years of age had a longer stay in the ED, probably due to comorbidities, which, among other things, can exclude (as per protocol) some of them from the *See and Treat* pathway (52.18% of patients under 48 years of age and 47.82% of patients over this age); this conclusion has not emerged in other studies, however. The Tuscan model includes a *See and Treat* clinic operating 7 days a week from 8 a.m. to 8 p.m. [14]. Our study showed that there is a uniformity of accesses in different months and on different days of the week. These data differ from the study performed by Fiorentini *et al.* in 2013 where the "Monday effect" and a general greater number of inappropriate accesses coinciding with the summer months were highlighted [23]. Fundamental to the organisation of this pathway is the data on patient accesses in the various shifts; the data that emerged (morning shift 36.9%, afternoon shift 34.8% and night shift 28.2%) is comparable to that of the study carried out by Fiorentini *et al.* where the distribution by time bracket of patients with minor codes was uniform, with peaks in the morning hours and a gradual reduction in accesses in the remaining part of the day [23]. The greater influx in the morning hours generates an overcrowding of the ED in the afternoon, which is reduced in the night shift as a result of fewer admissions. 57.7% of the patients in our study went to the ED for trauma-type problems (minor contusions of the limbs, uncomplicated hand and foot trauma, wounds, abrasions, superficial fingertip avulsion, insect bites and removal of stitches), while in the Tuscany trial the results showed that patients with these problems accounted for 70% of the sample analysed; specifically, the most frequent "*See and Treat* diagnosis" in our research was "wounds" with 27.8%, followed by "trauma of the fingers and toes" with 14.3%. The number of wounds appears to be higher than that of the study conducted by Righi in 2020, where patients with wounds accounted for only 18.2% [24]. Finally, the use of *See and Treat* would reduce the mean waiting times of the general user for minor codes by 6.99% and the time spent in the ED by 4.38%. The data from the Tuscany region show reductions of 46.4% in waiting times and 22.2% in the time spent in the ED

[25]; these differences are probably attributable to the different conditions in which *See and Treat* was applied in Tuscany.

CONCLUSIONS

The results of this study showed the significant impact that the *See and Treat* pathway could have on reducing overcrowding. Every month in the ED, 2418 patients with minor codes accessed the department with a simultaneous average presence of 84.14 patients, 7.48 of whom were eligible for the *See and Treat* pathway. The implementation of a *See and Treat* pathway could result in an 8.88% reduction in overall average attendances, bringing benefits such as reducing the average ED attendance to 76.5 patients per day. Reducing overcrowding would have a positive impact on both the users (delays in care, reduction in violence towards staff, reduction in legal disputes, reduction in the rate of abandonment of the ED and greater satisfaction in the care received) and the staff (reduction in errors, reduction in sentinel events, reduction in job stress, greater job satisfaction, and fewer delays in patient transfers) [7]. However, *See and Treat* is not the only solution to the problem of overcrowding, also considering that to date there are no studies in the literature that demonstrate the economic benefits of one model compared to another [9]. Other models include the Minor Injuries Units (MIUs), departments dedicated to certain minor emergencies with waiting times usually shorter than those in the Emergency Department, or the *Fast Track* model where, following Triage, the nurse independently and after assessing and ascertaining the user's health needs sends them directly to the appropriate specialist if they have a minor pathology clearly suited to treatment by a single specialist. [18,19,26]. To conclude, a state-of-the-art model such as *See and Treat* applied in a large emergency department would significantly reduce the phenomenon of *overcrowding* by reducing waiting times, time spent in the ED and the total number of patients present in the department as well as reducing the number of voluntary abscondment from the ED. The development of greater nursing skills can contribute to the management of a *See and Treat*

pathway with the ultimate aim of improving patient *outcomes*.

Limitations of the study

The fact that the study is a single-centre study is the main limitation of this paper; moreover, it was decided to analyse data from a period prior to the COVID-19 pandemic as it temporarily changed the pattern of access to the Emergency Department.

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Conflicts of interest

The authors declare that they have no conflicts of interest associated with this study

Contributions of the authors

Design: Riccardo Venditti and Anna Rita Marucci. Data acquisition, analysis or interpretation: Riccardo Venditti, Antonio Romanelli, Anna Rita Marucci, Flavio Marti. Statistical analysis: Giuseppe Campagna. Critical review of the article: Anna Rita Marucci, Flavio Marti, Roberto Latina, Lucia Mitello, Antonello Pucci, Lucia Mauro.

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Single-centre descriptive study of adverse events reported after anti-COVID vaccination

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ABSTRACT

Introduction: In Italy, approximately 80.5% of the population has completed the primary anti-COVID vaccination cycle with approximately 141 million doses administered. With the introduction of new measures to counter the spread of COVID-19, including compulsory vaccination for certain categories of people, the population expressed fears about the safety and adverse effects of SARS-CoV-2 vaccines. Several factors, such as gender and age, could have influenced the outcomes associated with the vaccine. Our single-centre work seeks to provide such evidence with respect to Pfizer/BioNTech's BNT162b2 (Comirnaty) and AstraZeneca's AZD1222 (Vaxzevria) vaccines.

Materials and Methods: Single-centre descriptive study carried out on a sample of subjects who underwent anti-COVID vaccination at the 'San Giovanni di Dio e Ruggi d'Aragona' AOU vaccination centre in Salerno. Patients who reported a suspected adverse reaction after receiving a dose of vaccine were included in the study. The regional vaccine platform SORESA and the VigiFarmaco portal were used to collect the data.

Results: During the period covered by the study, 126,928 doses of SARS-CoV-2 vaccine were administered. The Pfizer-BioNTech vaccine group comprised 124,138 administrations. The AstraZeneca vaccine group consisted of 2,790 administrations. 287 post-vaccination adverse reaction reports entered in the National Pharmacovigilance Network were considered. In most of the reactions reported, for both vaccines considered, the symptomatology was attributable to local reactions at the injection site. At the systemic level, however, we noted the prevalence of non-specific events such as fever, headache and diffuse arthromyalgia.

Conclusions: Based on our results and comparison with the literature, the data collected on the vaccines considered in the study suggest a favourable safety profile for their large-scale use. The rate of minor adverse events turned out to be low, with similarly reassuring data compared to serious adverse events, such as not to justify hesitation towards vaccination for COVID-19 disease

control.

Keywords: *SARS-CoV-2*; *Surveillance system*; *COVID-19 vaccination*; *mRNA*; Viral *vector*; *Adverse events following immunisation*

INTRODUCTION

Pathogenic viral outbreaks and complex interactions with humans and animals have, over the centuries, caused the transmission of viruses between different species (jumping), posing a great threat to human health and safety[1-3]. Globalisation has increasingly favoured pathogenic transmission between continents, causing different pandemics, in particular viral pandemics[4]. A new public health crisis that threatened the world in 2019 was the spread of the new coronavirus (2019-nCoV) or severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) declared a pandemic by the World Health Organisation (WHO) in March 2020[5]. The rapid spread of the COVID-19 disease has focused researchers' attention on the repurposing of existing approved drugs that inhibit viral entry, endocytosis, genome assembly, transmission and replication[6]. Most of the available information has been obtained through studies on other members of this family (SARS and MERS)[7]. Many researchers are currently working on the development of various types of specific drugs to treat this disease worldwide[8, 9]. Therefore, the current treatment given to COVID-19 patients is only based on their symptoms[10, 11]. Exposure to a pathogen such as SARS-CoV-2 generates an antibody response that changes over time and in different individuals (antibody kinetics)[12, 13]. It is believed that the limited pre-existing natural immunity to this virus was responsible for the explosive increase in cases[14, 15]. A previous infection, on the other hand, could play a key role in ensuring protection against new infections, and the literature can provide evidence of such protective correlations through longitudinal cohort studies[16-19]. In the absence of specific drugs, only global vaccination has made it possible to contain the spread of the virus, reducing the number of serious clinical cases and hospitalisations[20-22]. In December 2020, the first vaccines against COVID-19 developed with different technologies received Emergency Use Authorisation (EUA) from the US Food and Drug Administration (FDA). Subsequently, globally, they were licensed in 117 countries in North and South America, the United Kingdom, Europe, Africa, Asia and Oceania[23, 24].

In Italy, mRNA vaccines and the adenovirus vaccine AZD1222 have been widely administered. Time saving during the development of COVID-19 vaccines was achieved through unprecedented levels of public financial support, increased tolerance for risky investments in technology and process, and studies on mRNA transport methodology[25-27]. The Italian Medicines Agency defines pharmacovigilance and vaccine vigilance as "a complex set of activities aimed at continuously assessing all information relating to the safety of medicinal products and ensuring that the benefit/risk (B/R) ratio remains favourable over time." Our country has a pharmacovigilance system that, for many years now, has devoted special attention and a special organisational structure precisely to monitoring what happens after a vaccine is administered. It is an open, dynamic system to which everyone (health professionals, patients, parents, citizens) can send their reports contributing to the monitoring of the safe use of vaccines and medicines in general. Furthermore, the system has full transparency and offers access to aggregated data, which can be queried on the AIFA website. The National Pharmacovigilance Network (NFP) suddenly came into the spotlight when several new vaccines received emergency authorisation and were launched on a large scale at the end of 2020. Vaccines have undergone rigorous clinical testing and evaluation by the authorities, but with the use of new technologies [28] and rapid, large-scale administration of vaccines, the importance of a well-functioning international system of post-marketing safety surveillance has been emphasised[29, 30]. The surveillance of vaccine safety and the collection of reports on suspected adverse events after immunisation (AEFI) [31] is the responsibility of national vaccine regulatory systems, including national regulatory authorities (NRAs) and national immunisation programmes (NIPs). Passive surveillance, defined as the collection and analysis of unsolicited reports of suspected adverse events in the form of individual case safety reports (ICSRs) that are sent to a central database or a health authority, is the basis of safety surveillance for immunisation programmes, in order to identify rare events, evaluate clusters of reports and detect safety signals for further and subsequent studies [32, 33]. Although the identification and quantification of adverse

events related to anti-COVID vaccination is not always easy to understand, especially in such a broad context as a pandemic, the analysis of the available data can be an important moment for risk estimation and subsequent safety assessments[34-36].

This paper describes reports of reactions that were observed after administration of the COVID vaccine. Investigating the meaning and causes of these reactions is the task of pharmacovigilance. Investigating every event that appears after a vaccination serves to gather as much information as possible and increase the possibility of identifying truly suspicious events whose nature is important to understand, or which have never been observed before, with the aim of ascertaining whether there is a causal link with the vaccination. In this way, regulatory authorities such as AIFA can verify the safety of vaccines in the real world, confirming what has been observed in pre-authorisation studies and possibly identifying new potential adverse reactions, especially if they are rare (1 in 10,000) and very rare (less than 1 in 10,000). A large number of reports, therefore, does not imply that the vaccine is more dangerous, but is an indication of the high capacity of the pharmacovigilance system to monitor safety.

The anti-Sars-CoV-2 vaccination campaign, which started on 27 December 2020, saw the participation of the 'San Giovanni di Dio e Ruggi d'Aragona' AOU of Salerno in 'Vaccine Day', the symbolic start date of the vaccination campaign in Italy and across Europe. In what was analysed by this work, in order to make this event - historic for all healthcare worldwide - possible, an organisational and coordination process was implemented that ensured high daily vaccination numbers and minimal risks for users, in full compliance with the quality standards of Public Health.

Several factors, such as gender and age, may have influenced the clinical outcomes associated with the vaccine[37]. To date, in Italy, about 80.5% (48 million subjects) of the population have completed the COVID-19 primary vaccination cycle with about 141 million doses administered. This followed the introduction of new measures to combat the spread of COVID-19, including the compulsory vaccination of certain categories of persons[38].

MATERIAL AND METHODS

Study design

In this paper, we will provide a surveillance report on vaccines administered at the 'San Giovanni di Dio e Ruggi d'Aragona' University Hospital (AOU 'Ruggi') in Salerno with respect to specific targets:

1. to conduct a descriptive observational study of subjects undergoing vaccination with Pfizer/BioNTech's BNT162b2 (Comirnaty) and AstraZeneca's AZD1222 (Vaxzevria) between 27 December 2020 and 30 November 2021
2. to conduct a descriptive analysis of all reports of suspected adverse drug reactions attributed to COVID-19 vaccination (Adverse Events and Severe Adverse Events Following Immunisation, AEFI and sAEFI), collected through the AIFA form and/or the VigiFarmaco system of the Italian Drug Agency (severity, concomitant use of drugs, outcome)
3. to assess the role and statistical association between reported reactions and previously identified variables (age, gender, dose).

Participants

The descriptive observational study was carried out on a sample of subjects who received the vaccine at the 'San Giovanni di Dio e Ruggi d'Aragona' AOU vaccination centre in Salerno in the period between 27 December 2020 and 30 November 2021. Patients who reported a suspected adverse reaction after receiving a dose of vaccine were included in the study.

Sample Size

The sample size was evaluated using the GPower software version 3.1.9.7[39]. Power analysis was conducted for a two-tailed t-test, with an effect size = 0.50, a probability of type I error = 0.05, a test power = 0.95 and a sample size ratio of 1:1. The sample size for group 1 is 105 and for group 2

it is 105 for a total of 210 items. For the goodness-of-fit χ^2 test, with an effect size = 0.3, a probability of the type 1 error = 0.05, a power of the test = 0.95 and GdL = 1, the sample size for the group is 143 (172 with 2 degrees of tolerance).

Data collection

For the vaccination population, data were obtained from the SINFONIA platform (Sistema Informativo Sanità Campania) and the VigiFarmaco portal for adverse event reporting. They were collected anonymously, formatted, narrowed down to the vaccines of interest for this study and entered into a database using Microsoft Corporation Excel software.

Data analysis

The collected data were processed with SPSS ® (Statistical Package for Social Science - Chicago, IL, USA) statistical software for Windows, version 26.0. A descriptive analysis of the general characteristics of the study population was performed, using absolute frequencies and percentages. Data were stratified by age group, gender and period of administration. For continuous variables, results were expressed as mean ± standard deviation (SD), and as median and Interquartile range (RIQ) for numeric variables. Paired and unpaired data were analysed using Student's t-test. The Kolmogorov-Smirnov test, which is more appropriate when the sample size is >50, was used to check normality. The Q-Q diagram and the values of skewness and kurtosis were also evaluated. The categorical variables were summarised using frequencies and percentages, and we used the chi-square (χ^2) test to compare the categorical variables between the groups.

The Phi coefficient was used to measure the strength of association between the dichotomous variables, while Pearson's linear correlation coefficient was used to assess the degree of relationship between the variables age and severity.

All tests with p-value (p) < 0.05 were considered statistically significant.

Ethical consideration

Due to the nature of this study, no formal approval to the relevant Ethics Committee was required. The study was conducted in accordance with the principles of the Declaration of Helsinki. The data were extracted from databases for which the processing information had been signed in advance and analysed for the time strictly necessary to achieve the purposes for which they were collected, in compliance with the Regulation (EU) 2016/679 (GDPR) on privacy and guarantee of anonymity. Authorisation for their use was provided by the Corporate Privacy Officer and the legal representative of the organisation.

RESULTS

During the period covered by the study, 126,928 doses of SARS-CoV-2 vaccine were administered. Those who had already received the first dose went to the centre for the administration of the second dose of vaccine. Some of them also received the third dose.

In Table 1, the general trend of the Vaccination Centre is shown, while in Table 2, the trend per macro area (Vaccination Type and Dose) is shown.

Vaccination Centre Performance	First	Second	Third	Grand total
F	**33,563**	**31,140**	**1,321**	**66,024**
AstraZeneca	713	467		1,180
PF/BT	32,850	30,673	1,321	64,844
M	**30,886**	**28,596**	**1,422**	**60,904**
AstraZeneca	924	686		1,610
PF/BT	29,962	27,910	1,422	59,294
Total	**64,449**	**59,736**	**2,743**	**126,928**

Table 1. *General performance of the Vaccination Centre*

Vaccinated categories	First	Second	Third	Grand total
Health personnel				
Health or Social Care Staff	8,628	8,121	1,960	18,709
Non-Healthcare Staff	366	348	3	717
Other operators	2,662	2,599	164	5,425
High frailty				
Frail	10,678	10,054	409	21,141
Disabled persons Law 104/92 Article 3(3)	614	567	3	1,184
Cohabitant - Caregiver	973	921	0	1,894
Age				
Group Over 80	6,413	6,297	174	12,884
Group 70-79	1,795	1,637	7	3,439
Group 60-69	5,826	5,378	0	11,206
Group 50-59	6,023	5,435	2	11,460
Group 40-49	3,497	3,100	0	6,597
Dynamic section	13,773	12,272	8	26,053
Professional activities				
Production activity	33	29	0	62
Police	7	5	0	12
Municipality	3	3	0	6
Head Teacher	1	1	1	3
Lecturer	86	101	6	193
Coast Guard	1	0	0	1
Guardia di Finanza (Italian Financial Police)	6	4	0	10
Graduates	74	66	0	140
Guest	4	4	0	8
ATA staff	20	17	3	40
State Police	13	8	0	21
Penitentiary Police	11	6	0	17
Prefecture	9	8	0	17
Civil Defence	67	56	1	124
Public Utilities - Tourism Operators	983	915	0	1898
Public Utilities - Transport Staff	13	11	0	24
University	1,864	1,768	2	3,634
Fire Brigade	4	5	0	9
Total	**64,449**	**59,736**	**2,743**	**126,928**

Table 2. *Performance by macro area of the Vaccination Centre, with order of priority of categories*

A proportion of the vaccinated subjects (404) switched from AstraZeneca to Pfizer-BioNTech due to

changes in the Italian Regulatory Authority's declarations [40] or because they had suffered increased D-dimer levels [41]after the first AZD dose.

The Pfizer-BioNTech vaccine group (BNT) comprised 124,138 administrations (47.8% men and 52.2% women) with a mean age of 49.11±20.94 years (range: 12-101) and a median age of 51 years (RIQ: 31-64).

The distribution is superimposable between first dose (50.6%) and second dose (47.2%). Only 2.2% of the subjects received the third dose.

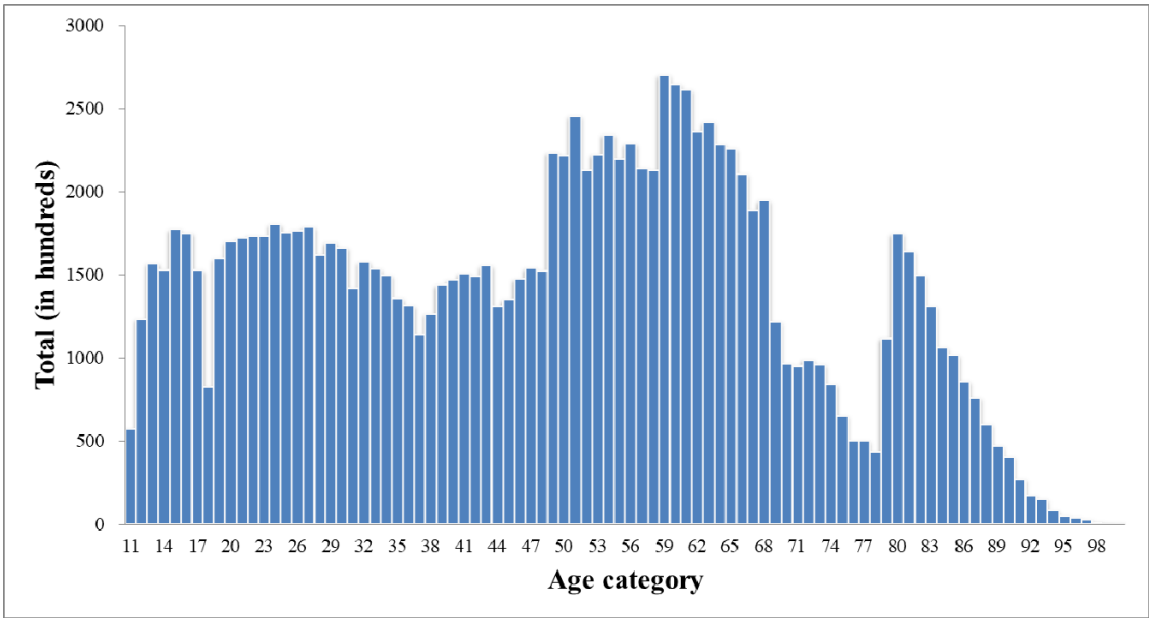

Figure 1. *Age distribution BNT Group*

The AstraZeneca vaccine group (AZD) consisted of 2,790 administrations (57.7% men and 42.3% women), with a mean age of 47.46±11.77 (range: 18-76 years) and a median age of 49 years (RIQ: 38-57). 58.7% of the sample received the first dose and 41.3% the second dose.

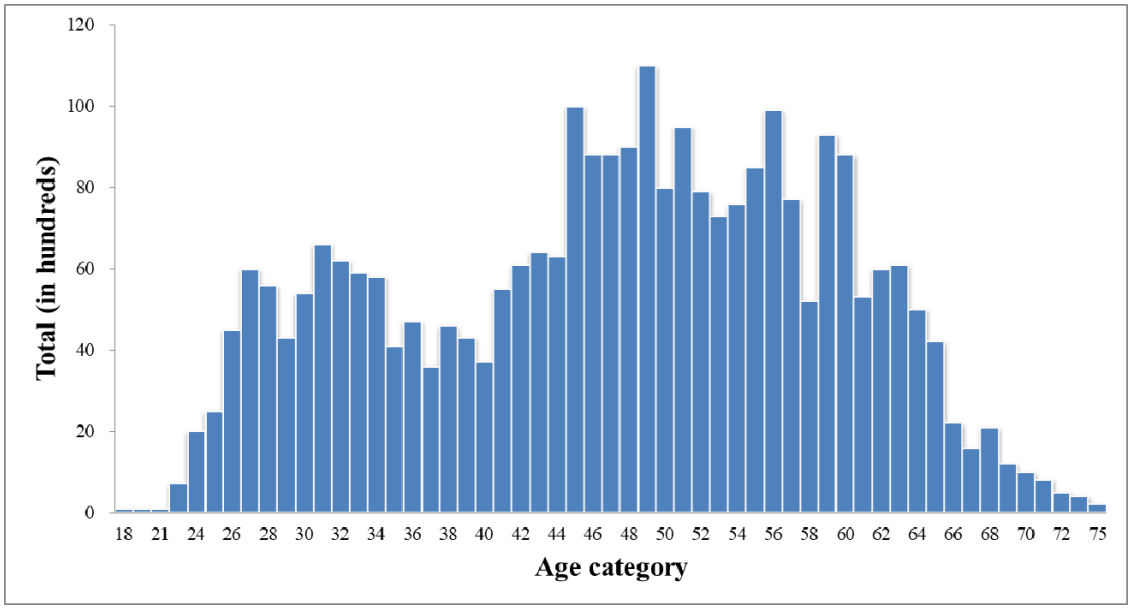

Figure 2. *Age distribution AZD Group*

The enrolled population was stratified by age decades. The Pfizer-BioNTech group consisted predominantly (18.9%) of individuals aged between 60 and 69 years (Figure 3), whereas the AstraZeneca group comprised more people (23.1%) aged between 40 and 49 years (Figure 4). In particular, several subjects were unable to receive AstraZeneca mainly due to thrombotic risk (e.g. high D-dimer value, coagulation impairment, etc.) and age limitation (initially subjects over 18 years of age were eligible and later over 60 years of age), according to the recommendations in force in Italy. Our study therefore examined the AEFIs and sAEFIs attributed to the SARS-CoV-2 vaccination and recorded by the nursing staff or pharmacists responsible for vaccine preparation and pharmacovigilance at the AOU 'San Giovanni di Dio e Ruggi d'Aragona' Vaccine Centre.

At the time of its closure on 30 November 2021, we verified that 287 post-vaccination adverse reaction reports had been entered into the National Pharmacovigilance Network. The data show that the percentage of reported sAEFIs are significantly lower than the risks related to COVID-19 (data from the COVID-19 Integrated Surveillance in Italy).

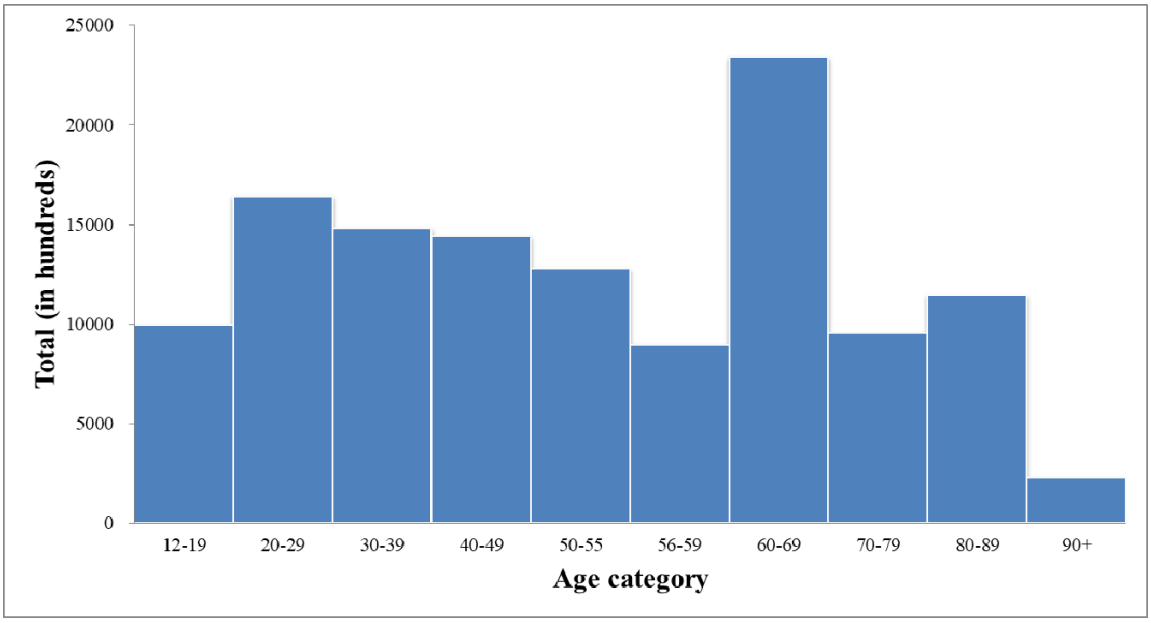

Figure 3. *Distribution by age group BNT Group*

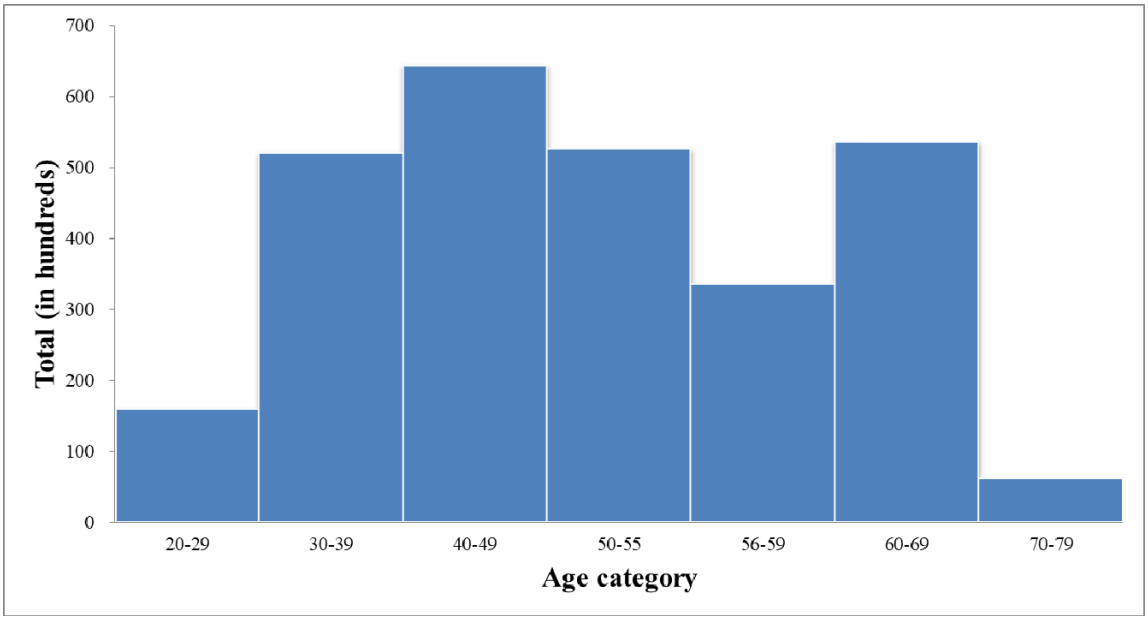

Figure 4. *Age distribution AZD Group*

Most of the reported adverse events were classified as non-serious (90.9%) and to a lesser extent as

serious (9.1%); in most cases, the outcome was complete resolution or improvement of symptoms. The distribution of reports per type of vaccine follows the distribution of administrations (92% for Pfizer-BioNTech and 8% for AstraZeneca).

The average age of persons reporting a suspected adverse event was 62±22.21 years (range: 15-99). As already observed in the National Surveillance Reports on anti-COVID-19 vaccines, also in what was analysed by this work, the reporting rates for the 2nd dose are lower than for the 1st dose and significantly lower for the 3rd dose. Although these are not absolute incidence rates, the data indicate an overall absence of significant sAEFI events such as to be an *alert* for regulators to serious safety issues with administered vaccines. On the other hand, in contrast to the overlapping exposure between the genders (52% of doses administered in females and 48% in males), one can note the asymmetric distribution of reports with respect to gender, with 71.1% of reports concerning women and 27.9% concerning men, regardless of the vaccine and the dose administered.

In our statistical analysis, in order to determine whether there were age differences between those who reported a post-vaccination adverse reaction, we performed an independent samples *t-test*.

To test for normality, we used the Kolmogorov-Smirnov test with Lilliefors correction, which was non-significant for both men ($p = 0.071$) and women ($p = 0.058$). Visual inspection of the Q-Q plot shows that age is normally distributed, with a skewness of -0.445 (ES = 0.271, $| z | = 1.64$) and kurtosis of -0.634 (ES = 0.535) for men and a skewness of 0.006 (ES = 0.171, $| z | = 0.035$) and kurtosis -0.902 (ES = 0.341) for women[42-43]. Having ascertained the normality of the sample distribution, we evaluated the hypothesis of equality of variance by means of Levene's test. This turns out to be statistically non-significant ($F = 0.255$, $p = 0.614$) and it is therefore possible to use the assumption of homogeneous variance of the age of males and females.

The results suggest that the difference in mean age between the two groups is not significantly different ($t(279) = 1.769$, $p = 0.078$). We then looked at whether the 287 subjects in our sample were as likely as the Italian population to have non-serious (81.8%) or serious (18.1%)

reactions[44].

We conducted a χ^2 test for goodness of fit against the theoretical distribution model. In this case, the results obtained suggest that the two categories do not distribute themselves according to the expected probability ($\chi^2(1) = 15.88$, $p < 0.001$). In particular, in our reference sample, non-serious reactions are more frequent (90.9%) than serious reactions (9.1%). We then conducted a χ^2 test to test whether men and women were equally likely to have non-serious or serious reactions. The test results suggest that men and women were equally distributed within the two categories of the severity status variable ($\chi^2(1) = 2.83$, Phi = -0.100, $p = 0.093$). In other words, there is no evidence of linear dependence between gender and the occurrence of a serious adverse reaction, with a small linkage effect between the two variables, as suggested by the value close to 0 for the Phi coefficient. We also conducted a χ^2 test to test whether there was a relationship between the number of doses received and the occurrence of a severe reaction. These results also suggest that the groups are equally distributed within the two categories of the severity status variable ($\chi^2(2)= 0.418$, $p = 0.811$, V = 0.038). In other words, dose and severity of the reaction are independent in distribution. Finally, Pearson's linear correlation coefficient was calculated to investigate the correlation between the variables age and severity considering the reported adverse reaction (r = -0.279, $p = 0.01$).

The results suggest that as age decreases, there is a weak correlation with the presentation of a severe reaction. In this analysis, the source variable (severity) was coded into a nominal dichotomous qualitative variable with value 0 (no severe reaction) and 1 (severe reaction).

Below are some of the reactions detected and their incidence in relation to the total number of detections (Figure 5).

Figure 6 shows some detected reactions and their incidence for the Pfizer-BioNTech vaccine and Figure 7 for AstraZeneca.

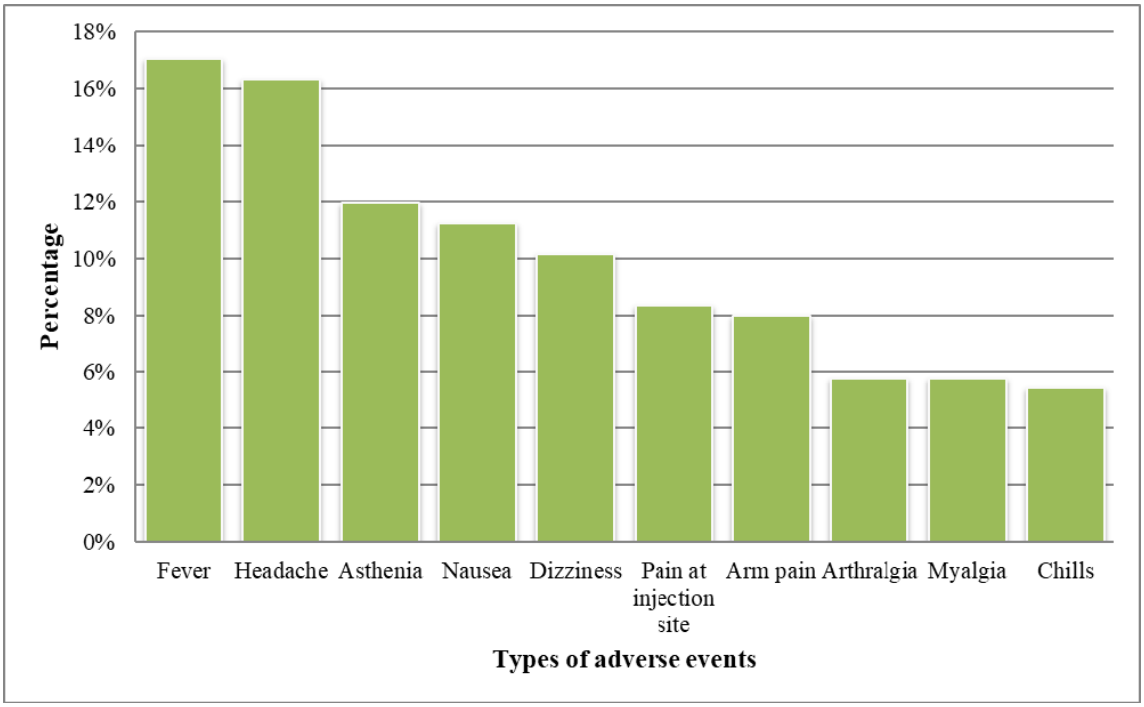

Figure 5. *All types of adverse events observed on our sample.*

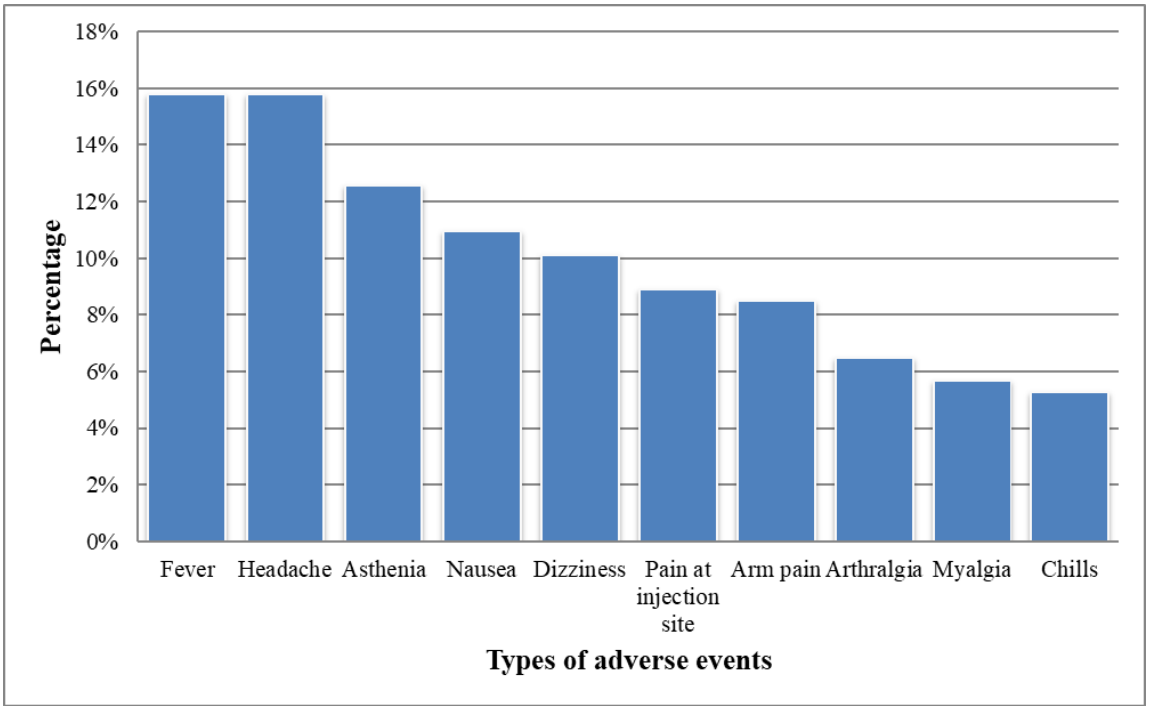

Figure 6. *All types of adverse events observed by Comirnaty vaccine.*

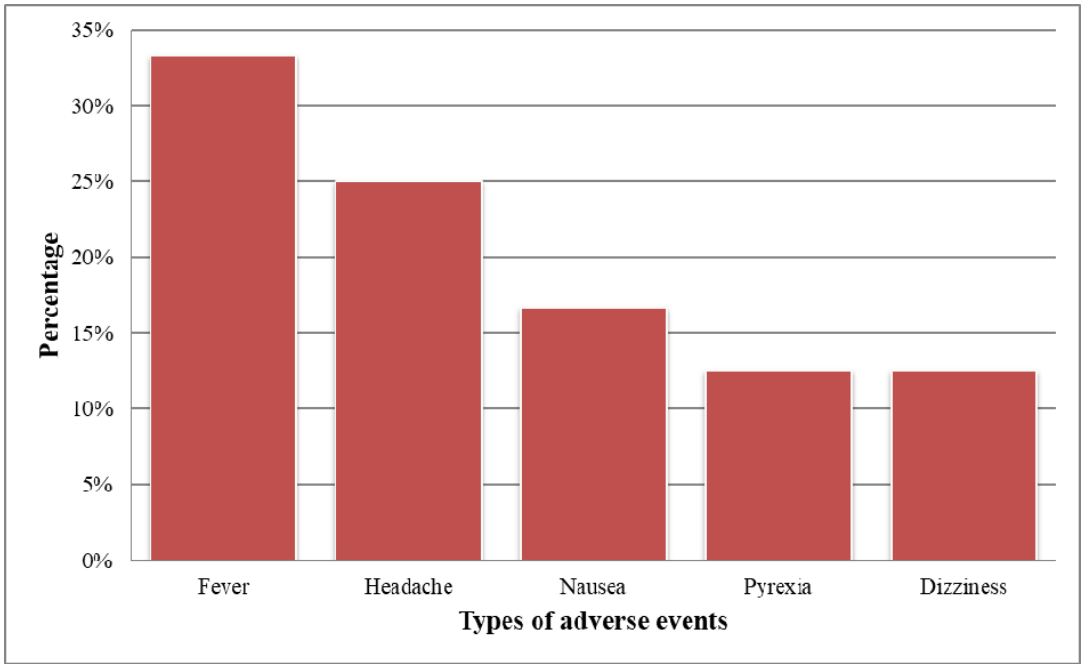

Figure 7. All types of adverse events observed by Vaxzevria vaccine.

Finally, Figure 8 shows the reports of sAEFI aggregated by symptomatology. It can be noted that,

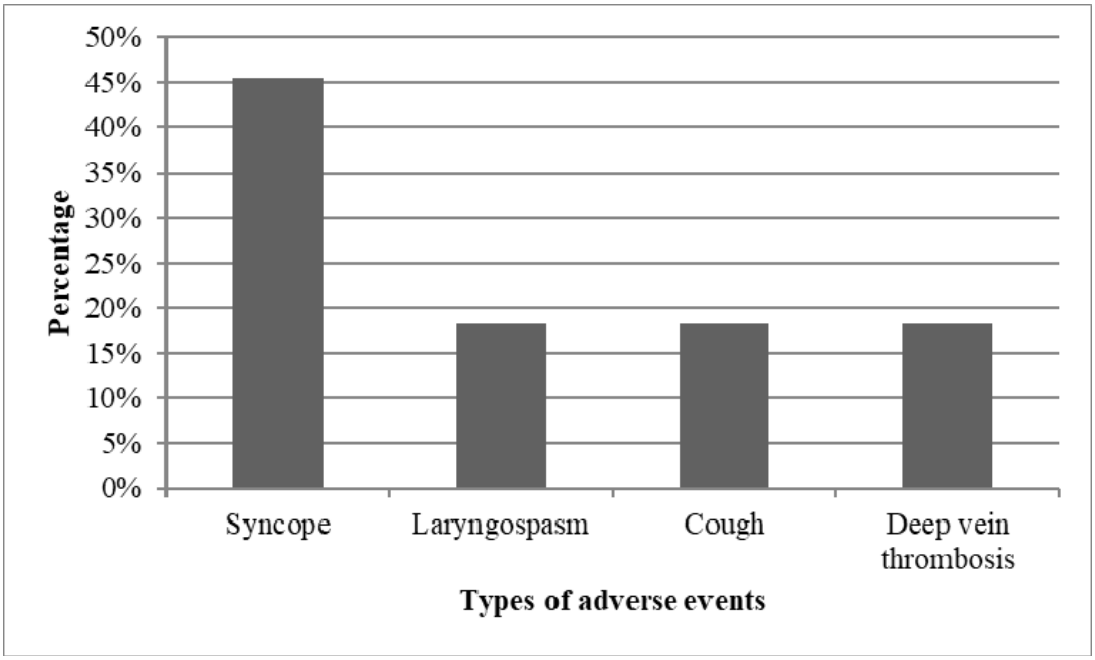

Figure 8. *All types of severe adverse events observed.*

Figure 8 shows the reports of severe AEFIs aggregated by symptomatology. It can be seen that, in addition to overlapping with the AEFIs in terms of typology, they are characterised by events attributable to general pathologies. For all reported sAEFIs, the outcome was improvement of symptoms.

DISCUSSIONS

Our study examined AEFIs and sAEFIs spontaneously reported at the AOU 'San Giovanni di Dio e Ruggi d'Aragona' in Salerno through the AIFA pharmacovigilance system and attributed to anti-COVID vaccination. Our data, although related to a small sample, demonstrate the few reports of serious reactions and the low risk of outcomes when compared to historical pandemic data and in line with national data. In contrast to an overlapping exposure between the sexes with respect to total administrations, AEFIs were predominantly reported in the female sex (71%). The percentage of sAEFI is almost overlapping between the sexes, with a prevalence for Pfizer-BioNTech's Comirnaty vaccine (78%) at the first dose (77%). In most of the AEFIs reported, for both vaccines considered, the symptomatology was attributable to local reactions at the injection site (e.g. pain, swelling, redness). At the systemic level, however, we noted the prevalence of non-specific events such as fever, headache and diffuse arthromyalgia. The same applies to reactions reported as serious; the latter, identified as such due to the prolonged observation period at the vaccination centre, in rare cases led to the hospitalisation of those involved. All these reports resulted in an improvement in symptoms. In line with the literature, our study showed that the onset of AEFI can be influenced by gender. This could be related to the opposite role of sex hormones [42] as well as pharmacokinetic parameters that may differ between males and females [43].

Disease control efforts by health authorities should seriously consider the relationship between the risks involved in immunising the population versus the benefits against the disease[45]. While there is no general acceptable risk threshold, the number of deaths worldwide from COVID-19, the risk

of collapse of health systems, shutdowns and damage to economies, should lead epidemiologists, health organisations and governments to set this threshold as soon as possible.

CONCLUSIONS

Based on our results and the comparison with the literature[46, 47], both vaccines showed a favourable safety profile, with reassuring data that does not justify hesitation towards vaccination for COVID-19 disease control[48-50]. We therefore highlighted the few differences in the incidence and type of AEFI and sAEFI associated with Pfizer/BioNTech's Comirnaty (BNT162b2) and AstraZeneca's Vaxzevria (AZD1222). For these reasons, the guidelines issued by many countries, such as Italy, whose main objective is to increase the number of vaccinated persons with a 'fourth dose' to protect the over 60s and the frailest of the population. It is therefore necessary to disseminate surveillance and public health data to counter vaccination hesitancy in the general population and the reluctance of "no vax" subjects towards vaccinations, also in view of possible future pandemic events.

LIMITS

The study has some limitations. Pharmacovigilance information is based on a voluntary and passive reporting system that may not capture every single event related to AEFI and sAEFI. Direct verification is not always possible to determine whether every reported adverse reaction is actually related to the vaccine. In particular, the lack of reporting could lead to an underestimation of all the adverse events that actually occurred.

Another limitation of the study is that, to the exclusion of age and gender, other individual characteristics were not taken into account, such as underlying or previous diseases (myocarditis, autoimmune or immune-mediated diseases, oncological pathologies) or chronically taken medications, which might instead predispose vaccinated subjects to be susceptible to AEFIs and

sAEFIs.

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CONFLICTS OF INTEREST

The authors declare that they have no conflicts of interest associated with the study.

AUTHORS' CONTRIBUTION

FG and AC were responsible for the conception and design of the study; SDC and AI performed the data collection; FG and FP performed the data analysis; MF and RF were responsible for drafting the manuscript; AL and DCC made critical revisions to the article.

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THE IMPACT OF INTRODUCING A NURSING EDUCATION PROTOCOL ON THE INCIDENCE OF CLOSTRIDIUM DIFFICILE INFECTIONS IN THE HOSPITAL ENVIRONMENT: A QUASI-EXPERIMENTAL STUDY

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Original article

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Introduction: Increased virulence of *Clostridium difficile* and use of antimicrobial drugs in recent years represent a challenge in the treatment of these infections in healthcare institutions. Improving the overall knowledge on prevention and control of *C. difficile* infections (CDI) among nurses may be one strategies to help reduce the CDI incidence rate in hospital settings.

Objective: The research objective was to develop, implement and evaluate a protocol for the prevention of CDI in hospital environment through nurses' education.

Materials and Methods: This study utilized a quasi-experimental pretest–post-test design, which was carried out in tertiary care hospital, Banja Luka, Bosnia and Herzegovina. The educational modules contained detailed description of prevention measures to prevent CDI transmission, and *C. difficile* toxins in faces were identified using laboratory enzyme immunoassays.

Results: The research included 60 nurses. There was a statistically significant difference ($p=0.001$) in the evaluation of knowledge in relation to professional experience and education level before the intervention. Nurses showed highly significant ($p<0.001$) better knowledge about *C. difficile* and CDI prevention on the test after the education. Before the education of nurses and technicians on preventive measures, CDI incidence was 11.04 per 10,000 patient - days, and after the education 6.49.

Conclusion: The study results showed that continuous medical education about CDI can have contribute to increasing knowledge and awareness about the importance of CDI prevention.

Keywords: *Clostridium difficile*, infection, prevention, nurses, education.

INTRODUCTION

Hospital-associated diarrhoeas are most often the result of an infection caused by *Clostridium difficile* (CDI), and the prevention of these infections has public health significance. Decreasing the CDI rate is challenging due to the complex pathogenesis, a many number of colonized patients and the presence of infectious spores [1,2]. The spreading of CDI is a consequence of the uncontrolled use of antibiotics and inappropriate control of hospital-acquired infections (HAI) [3-5]. Therefore, the prevention and control of CDI in healthcare institutions nowadays requires two basic approaches: preventing horizontal spreading of *C. difficile* and decreasing the risk of CDI in case the infection spreads. The first approach to CDI control involves isolating the infected patient and cleaning and disinfecting the hospital environment according to the guidelines [6,7]. Another approach is to control the use of antibiotics [8,9]. Strategies and guidelines for the prevention of CDI are based on a bundle of measures or a set of data that lead to the best possible outcome. The CDI prevention bundle consists of individual elements or interventions, as it follows: diagnostic testing, empirical control, contact isolation, hand hygiene and disinfection of the hospital environment. Successful implementation of the CDI prevention bundle depends on several persons: physicians, nurses, caregivers, personnel in charge of hygiene, family members and others who are in contact with patients [10]. Considering the high incidence of CDI, healthcare professionals should be familiar with the latest guidelines in the treatment and prevention of CDI [11,12]. Faecal microbiota transplantation (FMT), also called faecal transplantation or faecal bacteriotherapy, is one of the more important, newer approaches to the treatment of CDI. FMT is the infusion of a suspension of faces from a healthy donor into the colon of the CDI patient [13,14]. Nurses have an important role in the modern approach to the treatment of CDI patients, such as FMT and primarily if those patients are housed in an intensive care unit (ICU). Enteric preventive measures and proper isolation of patients with CDI are crucial care procedures [15,16]. Nurses should be alert that after FMT, antibiotic exposure can still lead to recurrent CDI [17]. There is

evidence that educational interventions improve the knowledge and practice of nurses with regard to infection prevention both in hospitals and nursing homes [18,19]. Educational interventions included evidence-based information on the etiology, epidemiology, diagnosis, treatment, transmission and prevention of CDI, such as hand hygiene, isolation measures and the use of antibiotics [20-22]. Staff education is one of the most successful measures to prevent the spread of *C. difficile*, which should include not only medical staff (nurses and physicians), but also non-medical staff, especially those responsible for maintaining the hygiene of the hospital environment [23]. Spagnolo et al. (2018) presented in their research how a multidisciplinary approach to the prevention of CDI, which included several interventions, one of which was the education of nurses and hygiene personnel, proved to be successful in controlling the epidemic in one Italian hospital [24]. However, recent studies published that health workers are not properly following the CDI prevention measures. Some of the possible reasons include more and more complex preventive procedures that lead to confusion and gaps [25–27].

Data from the literature indicate that certain individual and socio-demographic factors, including knowledge, length of service or work experience, gender and type of profession influence adherence to infection prevention and control procedures [28]. However, even when hospital infection prevention protocols are followed, outbreaks of any infectious disease, including CDI, may occasionally occur. Therefore, it is important for nurses to update their knowledge on how to prevent HAI, and about the control and management of infections in healthcare facilities [29]. Continuous educational programmes, professional training and ensuring the availability of the necessary guidelines represent essential steps for improving the knowledge and practice of nurses in relation to the prevention of HAI [30]. Different educational strategies are being used to improve nurses' knowledge and practice of infection control. Some of the most often used methods include quasi-experimental research in which control and target groups are subjected to both didactic and practical sessions, training based on pre-prepared scenarios, e-learning with a questionnaire and

focus group discussions, and computer-assisted learning in infection control education [31]. Due to the rapid pace of scientific discoveries, technological innovations and social changes, knowledge quickly becomes outdated. Andragogy is a useful model for planning and facilitating adult learning [32]. Problem-based learning (PBL) is also an effective educational strategy that can improve critical thinking skills in infection prevention and control [33,34].

Nurses make the largest group of health workers in the healthcare system. They provide services in hospitals seven days a week throughout the year and are in close contact with patients and their families. Nurses working in different hospital departments play an important role in HAI prevention [35]. The present relevant literature has only a few published studies that evaluate the knowledge, perception and practice of nurses regarding CDI [36]. A recently conducted study from Bosnia and Herzegovina showed that nurses' knowledge about CDI prevention is not at a satisfactory level, which indicates an increasing need for educating nurses about this issue [37].

Therefore, the present study was planned bearing in mind the importance of nurses in CDI prevention, and the importance of an educational intervention on the behaviour of nurses in the practice of infection control.

Objective: The research objective was to develop, implement and evaluate an educational module for the prevention of CDI in the hospital environment through the education of nurses in order to improve the level of knowledge and practice among them.

MATERIALS AND METHODS

Design

The research design used in this study was quasi-experimental design with one group design pretest-posttest approach.

Research Time and Place

The study was conducted in the University Clinical Centre of the Republic of Srpska (UKC RS) in Bosnia and Herzegovina, from April to June 2020.

Study Population

The target population consisted of nurses working in ICU, Clinic for Internal Diseases, Clinic for General and Abdominal Surgery, Clinic for Infectious Diseases and Clinic for Oncology.

Based on a G*Power 3.1.9.4 program calculation of medium effect size, power set at 0.80, and a set at 0.05, a minimum of 47 participants is required. Considering a typical dropout rate of 10% for the experimental design used, 57 is the minimum required sample. The scope in the study initially included 75 participants, but excluded 15 with incomplete answers. A final sample of 60 was reached of nurses who have fully completed the education program, pretesting, and post-testing. Participants were selected from the total population using a simple random technique.

Inclusion and Exclusion Criteria for Nurses population

According to the defined criteria for inclusion in the study, the subjects were nurses providing direct care to patients, of all educational profiles, employed at these clinics, aged 18-65, having passed the state exam (nurses licensed to practice) and working 8 and 12 hours shifts. Nurses working on administrative assignments were not included in the study, according to the defined criteria. The criteria for exclusion at the study were the nurses with incomplete answers.

Inclusion and Exclusion Criteria for Patients population

The study included patients with CDI who were older than 18 years of age and hospitalised at the Intensive Care Unit (ICU), Clinic for Internal Diseases, Clinic for General and Abdominal Surgery, Clinic for Infectious Diseases and Clinic for Oncology, from July to December 2019 (before the

intervention) and from July to December 2020 (after the intervention). These clinics were selected for the purpose of the study because they treated patients with increased risk for CDI and had an increased incidence of *C. difficile* infections in 2019.

A case of hospital-acquired CDI (HA-CDI) was defined according to the criteria of the *C. difficile* Study Group of the European Society of Clinical Microbiology and Infectious Diseases as follows: any patient who developed symptoms of diarrhoea at least 48 hours after admission to the hospital (HA-CDI case with hospital onset); any patient who was admitted with symptoms of diarrhoea at the hospital with an onset of symptoms in the community within 4 weeks following discharge from the hospital (HA-CDI case with community onset) and patients who had stool samples positive for CD toxin A or B or positive for toxin-producing CD [25]. Only the first positive test for *C. difficile* in patients during the current hospitalization was included in the study. If patients had more than one positive test during the study period, we included only the first episode. Paediatric population of CDI patients, was not included in the study, along with community-acquired CDI.

Educational Intervention

The educational modules contained detailed description of prevention measures against the transmission of the *C. difficile* in hospital settings in accordance with the guidelines [6,7], and their implementation would affect the patient's safety during hospitalisation and the treatment outcome. Each educational module was based on adult learning theories for interactive, self-directed learning, which developed interactive teaching, increased the motivation and interest of nurses, and at the same time made it easier to follow and remember the issue [31-33]. For more successful learning, we used numerous teaching aids (blackboard, flip chart, computers and LCD projector, moderation cards, models and figures). Each didactic session would start with a previously prepared Microsoft Office PowerPoint and video presentations followed by interactive group learning (discussions, case studies, and practical examples). The acquisition of planned knowledge and skills was the

foundation for evaluating the success of each educational module.

Knowledge Assessment and Outcome Measures

Anonymous survey questionnaires in the form of a test to examine the knowledge and attitudes of nurses about CDI and its prevention were designed for the needs of this research based on the modified version of the questionnaire by Brady et al. [38] with additional questions about new prevent and treatment methods e.g. FMT according to the guidelines [6,7].

The knowledge was evaluated using multiple-choice questions with only one correct answer. The tests that were offered to the respondents at the beginning of the educational modules (previous test for evaluation of the baseline knowledge) and at the end of the session (final test to evaluate what was learned) were the same. These tests contained 10-15 questions divided into two parts, the first part: included questions about the social and demographic characteristics of the respondents, the second part: included questions related to the evaluation of knowledge about CDI and its prevention. Tests before and after the educational modules were numbered to correlate with each subject's responses and were not correlated across modules for individual participants. We tested the hypothesis that after the training, the nurses' knowledge about the prevention and control of CDI in hospital settings was significantly higher than the baseline knowledge.

Evaluation of CDI

The diagnosis of CDI is based on clinically identified diarrhoea and laboratory findings. The toxins of *C. difficile* in faeces were identified using laboratory enzyme immunoassays.

Ethical Considerations

The study was performed in accordance with the ethical considerations of the Helsinki Declaration. The study was approved by the Ethics Committee of the University of Banja Luka, Medical Faculty

No: 18/4.4/20. Written consent for was obtained from all the subjects (nurses) who participated in the study. All data collected were confidential and used only by this study.

Statistical analysis

Descriptive statistics and percentages were used to calculate the answers to the questions. A correct answer to each question was graded with "1", and an incorrect answer with "0". The final score of knowledge was obtained by dividing the sum of correct answers by the number of questions, and multiplying the quotient of these two numbers by 10. In that way, it was possible to get a range of scores between 0 and 10. The incidence rate of hospital-associated CDI was calculated as the ratio of the number of infections/10,000 patient days. The incidence defined considering 10,000 according to European Society of Clinical Microbiology and Infectious Diseases (ESCMID) CDI-related guidance documents and the European Centre for Disease Prevention and Control (ECDC) protocol for CDI surveillance in acute care hospitals. Patient-days was calculated by summing the number of days in which a bed is occupied overnight by patients hospitalized during the surveillance period [39]. The level of knowledge before the education was described using Kruskal-Wallis test or one-way analysis of variance (ANOVA). To evaluate the effects of the reality based education program, Wilcoxon rank-sum were used for differences in knowledge before and after the education. Statistical hypotheses were tested at the significance level (alpha) of $p<0.05$. Statistical analysis was done using IBM SPSS Statistics 26 software.

RESULTS

The characteristics of respondents in this study include gender, age, education level and years of experience. The age intervals were defined on the basis of the median value for the age of the respondents. The intervals of years of experience were determined based on the fact that we wanted to show whether the length of years in practice affects knowledge about CDI. The following is the

frequency distribution of the respondents' characteristics in this study:

Demographic	Categories	n (%)
Gender	Male	9 (15)
	Female	51 (85)
Age	19-30	37 (61.7)
	31-60	23 (38.3)
Mean ± SD 31.06±10.74		
Education Level	Secondary School of Nursing	42 (70)
	Bachelor Degree of Nursing	14 (23.3)
	Master's Degree of Nursing	4 (6.7)
Years of Experience	<1	13 (21.7)
	1-15	33 (55)
	>15	14 (23.3)
Mean ± SD 9.00±10.63		

n=number of nurses; SD=standard deviation

Table 1. *Demographic characteristics of study participants*

The research included 12 (20%) nurses working at the ICU, and at clinics for internal medicine, abdominal surgery, infectious diseases and oncology. The majority of interviewed nurses were female - 51 (85%), with an average age of 31.06 ± 10.74 years. The highest percentage of respondents completed secondary medical school (70%) and most of them had professional experience of 1-15 years - 33 (55%) of them (Table 1).

Level of knowledge among participants with various lengths of work in the profession before application of the educational interventions, is presented in table 2:

	Seniority in the Profession	n	Mean	SD	F	df	*p*
CDI knowledge	<1 years	13	4.42	1.41	8.44	2	0.001
	1-15 years	33	4.71	1.32			
	>15 years	14	6.32	1.44			

n=number of nurses; SD=standard deviation; F=F-statistics; *p=p* - value

Table 2. *The level of knowledge among participants with various lengths of work in the profession before application of the educational interventions*

Table 2 presents the descriptive statistics of the respondents' baseline, theoretical knowledge before education on CDI in relation to the years of work experience in practice. There was a statistically significant difference (p=0.001) in the evaluation of knowledge in relation to years of experience in practice, meaning that knowledge about CDI was the highest among respondents with >15 years of experience in practice, and the lowest among those who had <1 years of experience.

Level of knowledge among participants with various education levels before application of the educational interventions, can be seen in table 3:

Education levels	**N**	**Knowledge [Points]**					**H**	***p***
		Mean	**SD**	**M**	**Min.**	**Max.**		
High school	42	4.32	1.125	4.50	2	6	31.131	<0.001
Bachelor's degree	14	6.43	0.874	6.25	5	8		
Master's degree	4	7.50	1.000	8.00	6	8		

n=number of nurses; SD=standard deviation; M=median; H=Kruskal-Wallis test; p=p-value

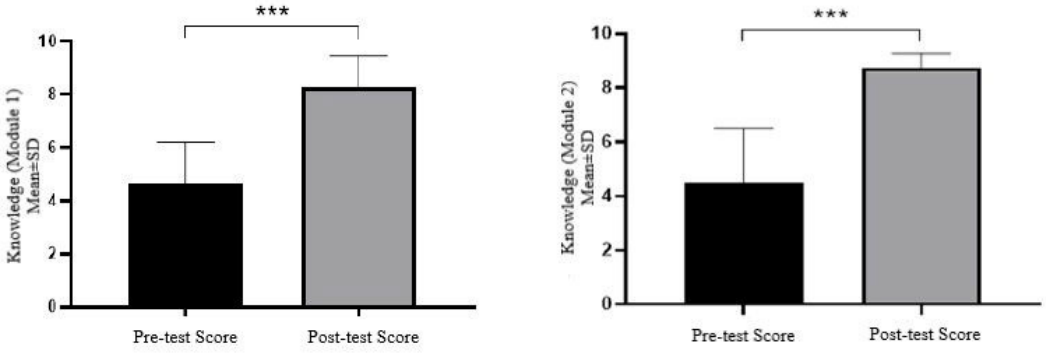
Table 3. *The level of knowledge among participants with various education levels before application of the educational interventions*

We determined a statistically significant difference in the average assessment of knowledge about CDI and the prevention of infections caused by this microorganism, in relation to the level of education (7.5 ± 1.0) (Table 3).

Based on the normality test, the statistical test used for the knowledge is Wilcoxon's matched-pairs test, with the results as shown in the figure 1.

Figure 1 presented the nurses showed highly significant (p<0.001) better knowledge about *C. difficile* and CDI on the Module 1and 2 tests after the education. On the Module 1, the mean value of the total score on the knowledge test about *C. difficile* and CDI was significantly higher after the education (8.29 ± 1.18) compared to mean values of the total score on the test that was performed before the education (5.01 ± 2.00). The mean value of the total score on the CDI prevention

knowledge test was significantly higher after the education (8.70 ± 0.67) compared to the mean values of the total score on the test that was performed before the education (4.5 ± 2.13) (Module 2).



SD=standard deviation; *** p<0.001; Wilcoxon's matched-pairs test

Figure 1. *Mean values of the total score of the Module 1 and 2 tests before and after the education*

CDI incidence before and after the nurses' education on CDI prevention measures, is presented in table 4.

Clinic	Period of examination					
	Before the education			After the education		
	hospital days	Number	%	hospital days	Number	%
Intensive Care Unit	2,666	7	9.5	5,782	7	16.7
Clinic for Internal Diseases	33,994	29	39.2	30,486	18	42.9
Clinic for General and Abdominal Surgery	9,069	1	1.4	8,718	4	9.5
Clinic for Infectious Diseases	8,133	31	41,9	9,859	8	19.0
Clinic for Oncology	13,144	6	8.1	9,896	5	9.5
Total	67,006	74	100.0	64,741	42	100.0
Incidence	11.04/10,000			6.49/10,000		

CDI=*Clostridium difficile* infection

Table 4. *CDI incidence before and after the nurses' education on CDI prevention measures*

Before the education, in the period from 1 July to 31 December 2019, there were 74 patients diagnosed with CDI hospitalised at the UKC RS, whereas after the education of nurses on CDI prevention, in the period from 1 July to 31 December 2020, there were 42 patients diagnosed with CDI hospitalised at the UKC RS. Before the education of nurses on CDI prevention measures, the CDI incidence was 11.04 per 10,000 patient - hospital days. After education on CDI prevention measures, the incidence was 6.49 (Table 4).

DISCUSSION

CDI represents a challenging problem in the acute care environment. Nurses play in important role in the early recognition, diagnosis and rapid treatment of patients with this bacterial infection [40]. Due to the changing epidemiology and increased virulence of *C. difficile*, it was necessary to educate nurses on the implementation of contact prevention measures when in contact with patients with CDI in order to prevent the transmission of *C. difficile* to hospitalised patients, their families, and the nurses themselves. The targeted CDI prevention programme included the development and implementation of an evidence-based protocol [6,7] to improve compliance with prevention measures (hand hygiene, contact isolation, cleaning equipment and surfaces, taking care of patients).

Continuous education of medical staff about CDI represents the foundation in risk management in order to reduce the number of infections, as it enables the transfer of know-how, the development of appropriate procedures and leads to better internal communication. Health care personnel education on CDI could be more important than isolating infected patients in single rooms [41].

The results of this study, the nurses demonstrated better knowledge of *C. difficile*, prevention and control of CDI after the education. Other studies that also evaluated the impact of educational interventions in improving knowledge about infection prevention among nurses had similar results [42-44].

There is evidence to support the fact that both baseline knowledge, and the knowledge gained after an educational intervention on infection prevention, vary with the level of education, type of work, and years of professional experience [22,45]. The results presented here also showed that there is a statistically significant correlation with the level of nurses' education and years of professional experience in relation to the level of knowledge about the prevention and control of CDI.

After reviewing the reference literature, we noticed that the knowledge of health workers about CDI, the ways of transmission and prevention differs between countries. The research conducted in England [46], USA [12,47] and South Africa [48] confirmed that nurses' knowledge about CDI is not satisfactory. The research conducted in Poland demonstrated that despite the average score of 6.85 obtained for correct answers to questions that evaluated the knowledge of medical workers, this value was not satisfactory due to differences in the level of knowledge among different groups. Nurses showed a slightly higher level of knowledge than other health workers [45].

In order to recognize a patient with CDI, healthcare professionals should know how to recognise risk factors, as well as the symptoms present in patients. In the research of Legenza et al. the main barrier in recognising a patient with CDI was insufficient knowledge. Thirteen (50%) participants were not able to describe the risk factors for the occurrence of CDI, which could speed up the diagnosis [48].

The results of the research conducted by Aldeyab et al. [49] provided further evidence that a series of CDI control measures, focusing on risky antibiotics (reduction of quinolone antibiotics), education of staff, patients and their families, implementation of prevention measures and isolation, led to a significant reduction in the incidence of infection in three hospitals in Ireland. The research conducted by Wong-McClure et al. [50] showed similar situation, where infection control strategies implemented proved to be effective in achieving outbreak control and in maintaining the baseline *C. difficile* incidence rate following it.

Even though our educational modules intended for nurses included a part of units which referred to

the use of antimicrobial agents, as the main risk factor for CDI, during the introduction of the protocol the use of high-risk antimicrobial agents was not limited because nurses do not prescribe antibiotics. However, numerous efforts in CDI prevention published in the literature report that antibiotic stewardship programs significantly reduce the incidence of infections and colonization with antibiotic-resistant bacteria and CDI in hospitalised patients [51].

The present study results showed that after educating nurses about CDI prevention measures, the incidence of CDI decreased, but it cannot be claimed that the education itself had an effect on the reduction of this hospital infection. However, some other studies have confirmed that education of nurses about CDI prevention along with control of antibiotic use in patient care can lead to reduction of CDI in acute care hospitals [52-54].

CONCLUSION

The knowledge test on *C. difficile* has confirmed statistically significant differences among nurses, and in prevention and control of CDI after the education compared to the average values of the total score on the test before the education. The study results showed that continuous medical education about CDI can have contribute to inreasing knowledge and awareness about the importance of CDI prevention.

Limitations

This study had several limitations. One limitation of this study is that we recruited nurses from a single hospital and specific findings may only generalize to settings with similar CDI prevention practices and a similar workflow. Consequently, repeated studies using this education program with nurses from other hospitals are needed. The study focuses on both competencies and skills in nurses. The initial plan for our study was to reduction of CDI. During the study, we did not monitor risk factors for CDI such as patient age, severity of the primary disease, and total antibiotic

consumption, which would be necessary for this type of study.

Contact prevention measures, such as the use of personal protective equipment, frequent hand washing and disinfection of surfaces, maintaining distance and isolation of patients have been particularly strengthened since the beginning of the COVID-19 pandemic. It would be good to monitor how well nurses actually practice hand hygiene because epidemiological studies show that most HAI are caused by microorganisms that contaminate the hands of nursing staff. According to some authors, a properly adopted hand washing procedure reduces the risk of CDI infection by half [55]. Additionally, the total sample of subjects included less male persons, which could have influenced the results. However, conducting this type of study can provide guidelines to the hospital infection monitoring and control team so that not only nurses but also other health professionals and persons in charge of hospital hygiene can be educated about CDI in the future. It would be good if this type of CDI education for nurses would be repeated every 6 months and the educational modules are revised according to the new CDI prevention guidelines.

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Conflict of interest

The authors declare no conflict of interest.

Authors' contribution

All authors equally contributed to preparing this article.

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EFFECT OF GUIDED EDUCATION ON PERCEPTION AND ATTITUDE OF CHILDBEARING WOMEN TOWARDS CAESAREAN SECTION IN NIGERIA

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ABSTRACT

Background: Nigerian women are unwilling to have a Caesarean section because of the general belief that abdominal delivery is a reproductive failure on their part regardless of the feasibility of vaginal birth after Caesarean section and the decreasing mortality from Caesarean sections.

Aim: The primary objective of this study was to investigate the existence of a significant relationship between pregnant women's knowledge and attitudes toward cesarean delivery before and after training.

Materials and Methods: The study employed a pre/post-test study design, using questionnaires to obtain data from 152 childbearing women attending antenatal in Iloro Basic Health Centre, Akure, Ondo State. Descriptive statistics were used to summarize and present data. Associations between variables were tested using Spearman correlation at a p-value 0.05 level of significance.

Results: The researcher found a significant relationship between the knowledge and attitude of pregnant women towards Caesarean section delivery before and after the training. The findings revealed an increase in the knowledge of mothers after the educational intervention, mothers would opt for a Caesarean section if it is necessary to protect them and the baby and they believe that it is a woman’s right to choose a Caesarean section for herself. Significant relationship exists between knowledge and attitudes toward the Caesarean section.

Conclusion: It was concluded that childbearing mothers still believe that vagina delivery is a natural delivery and there is joy attached to it, however, most women would still prefer vagina delivery to Caesarean section. The study recommends a need for awareness programs to enhance women’s and the community positive perception towards the Caesarean section in Nigeria.

Keywords: Guided Education, Perception, Attitude, Childbearing women, Caesarean Section

Introduction

Worldwide, Caesarean section accounts for about 15% of births. Caesarean section is one of the oldest procedures in obstetric practice and may be a necessary end in the termination of pregnancy to abort or minimize complications to the mother, foetus, or both [1]. At the onset, the operation was associated with high morbidity and mortality rates, largely because of the low level of medical science available at the time [2]. This type of surgery has been in existence throughout medical history and has steadily progressed from being one that is totally fatal to one that is safe for both the mother and the foetus [1]. In developed countries, the operation of Caesarean section has become well established with ease and safety, hence there is a lure for the procedure with women opting for it, increasingly for non-medical reasons [3]. It is the most commonly performed major obstetric operation in the world and there is no doubt that it has contributed to improved obstetric care throughout the world [4]. In Africa, the cesarean section is usually performed when a vaginal birth is deemed hazardous either to the foetus or the mother [5].

Available evidence pertaining to the population-based prevalence of Caesarean section in Nigeria reveals a threshold that is, far below the 10% recommended by the WHO [5]. Moreover, there has been no significant increase in the population-based Caesarean section rates for several years in Nigeria [7]. For instance, in 2008, merely 2% of births were delivered through a Caesarean section in Nigeria, and the rate remained unchanged in 2013. This is considerably low and suggests unmet needs which may contribute to poor maternal and neonatal outcomes in the country [5].

Interestingly, pregnant women's perception of Caesarean section has been an essential consideration for providers of healthcare in the USA [7]. One of the major reasons is that a positive perception can lead to an effective adaptation to the maternal role whiles a negative perception can leave women with a sense of failure, loss of control, personal disappointment, and a cause to distrust their personal abilities as childbearing women, hence the need to promote positive perceptions in Caesarean section related issues [8]. For a healthy women population, the choice of delivery option is

an important decision [9]. In developing countries, the negative perception of Caesarean section has led to the under utilization of the procedure[9]. Although there are many who consider the Caesarean section to be either safe or unsafe, more costly than the normal vaginal delivery, and more prone to complications than the SVD, there are some African women who perceive a Caesarean section to be a sign of female infidelity, a "curse," or a "failure of womanhood".

In a study carried out to assess the attitude of women toward a Caesarean section in Nigeria, it was found that vaginal delivery was the preferred mode of delivery by 93% of the respondents while 7% preferred a Caesarean section as the mode of delivery [11]. Expectant parents make many choices which usually include the site for delivery and the choice between spontaneous vaginal delivery and Caesarean section [10]. The reasons for this choice are being a natural process, being good for the mother's health, and safety, and being an easy process [12]. Most of the women thought that Caesarean delivery can lead to long-term ill effects on the mother's health. All the women who preferred elective Caesarean delivery initially said that they would rather opt for painless labour and vaginal delivery if offered over Caesarean section [11].

Nonetheless, the world health body emphasizes the need for Caesarean section service provision to every woman in need of it regardless of the prevailing population-based rates [13]. When medically indicated, Caesarean section has the potential for reducing maternal/neonatal mortalities and morbidities including delivery complications such as obstetric fistula [14]. However, a non-medically indicated Caesarean section has no associated additional benefits for mothers and newborns, rather like any surgery, it carries both short-term and/or long-term health risks [14]. Some studies have been conducted on Caesarean section utilization in Nigeria including a survey that examined the perception of pregnant women and found that a high proportion of the study participants were averse to Caesarean section delivery [5]. Significant associations between Caesarean section and parity, maternal weight, child's birth weight, and previous Caesarean section were reported in another study [13]. However, it is not strange to hear many pregnant women ventilating the wrong

attitude toward Caesarean section as an alternative method of birth [15]. In Nigeria, a number of women believe a Caesarean section is a last resort used to deliver pregnant women of their babies, many will even say, being told that they are going to deliver their babies through a Caesarean section is like giving a death warrant [13].

Traditionally, Nigerian women are unwilling to have a Caesarean section because of the general belief that abdominal delivery is a reproductive failure on their part regardless of the feasibility of vaginal birth after Caesarean section and the decreasing mortality from Caesarean sections. Inaccurate cultural perception about Caesarean section delivery accounts for the poor attitude of women towards Caesarean section [5]. Only one-third of women demonstrate a positive attitude towards Caesarean delivery as against 95.5% for vaginal delivery in the same group of respondents. The study concluded no significant differences in attitude and knowledge scores according to women's levels of education [16]. It is necessary to note that the issue of vaginal birth is not only peculiar to developing countries but also to some developed countries. Women still choose vaginal birth after having a Caesarean section even in the case of postdates slated for elective Caesarean section. Hence, it is imperative to educate the average pregnant woman irrespective of her level of education and parity on Caesarean section. Therefore, this study assessed the effect of guided education on the perception and attitude of childbearing women toward Caesarean section.

Objectives of the study

1. The primary objective of this study was to investigate the existence of a significant relationship between pregnant women's knowledge and attitudes toward cesarean delivery before and after training.
2. The secondary objective of the study was to describe the levels of knowledge and attitude of childbearing mothers about cesarean section before and after the educational intervention and the factors for not accepting cesarean section as a mode of delivery among women.

Hypothesis

H_{O1}: There is no significant relationship between the knowledge and attitude of pregnant women towards Caesarean section delivery before and after the intervention.

Materials and Methods

Study Design, Population, and Area

The study utilized a quasi-experimental pre/post-test design. This design was adopted by the researcher because it will help to ascertain the effect of guided education on the perception and attitude of childbearing women towards Caesarean section in Basic Health Center Iloro, Akure South Local Government Area. The research setting for this study is Basic Health Center Iloro, Akure South Local Government Area. The head-quarter of Akure South Local government area is Akure town. Akure is a city in southwestern Nigeria and the capital of Ondo State. The metro area population of Akure in 2022 was 717,000 a 3.76% increase from 2021 which was 691,000[17]. Basic Health Center Iloro is a step above your ordinary health center, they make the provision of primary health care a full package. Health professionals and caregivers are available to give postnatal care.

The population of this study was composed of childbearing women attending the antenatal clinic in Basic Health Center Iloro, Akure South Local Government Area. The study population was randomly selected.

Sample Size Estimation, Sampling Technique, Data, collection, and Analysis

To estimate the minimum number n of childbearing women to investigate the effect of guided education on the perception and attitude toward Caesarean section, we considered the Gaussian theory [18]:

$$n = \frac{sn}{1 + sn/N} \quad \text{with} \quad sn = \frac{z_{\frac{\alpha}{2}}^2 \pi(1-\pi)}{\varepsilon^2}$$

where *N* is the population size from which the sample size was defined. It resulted that the minimum estimated sample size of childbearing women required for a survey of a population of 255 mothers is equal to 143. It is evaluated, considering a z-score at 95%, an error ε = 10% and hypothesizing a prevalence π equal to 70% about the impact of guided education. In addition to reduce statistical biases connected to information/data loss the sample size is enlarged to 152 mothers.

Instruments

The research instrument used was developed ad hoc, considering an extensive search of empirical studies on caesarian sections and was administered before and after the nurse-led education [9,19,21,22,23]. The instrument has the following sections: Demographic characteristics of the respondents (7 items), knowledge of childbearing mothers on caesarean section (8 items), perception of the childbearing mother towards the caesarean section (7 items) and the attitude of a childbearing mother towards the caesarean section (10 items), and factors for not accepting caesarean section as the mode of delivery among the women (8 items). The reliability test of the instruments was Cronbach's alpha value of 0.83. The demographic, knowledge and factor data were scored using frequency and percentage while perception and attitude data were scored using 3 point likert scale of Agree, Not Sure and Disagree while factors data was obtained using 5 likert scale of strongly agree, agree, Not Sure, disagree and stongly disagree.

Procedure for data collection

The data was collected over a period of 4 weeks. All pregnant women were qualified to be included in the study hence need to randomly select about 20 manageable women during the antenatal visit (two Antenatal clinics per week) out of more than 60 attendance to prevent disruption of antenatal clinic activities and efficiency in data collection. The selected 20 women having been informed

about the study and consent gained were administered the pretest. The education intervention which is already prepared materials on what Caesarean section is, when is it needed, types, and how to prepare for a Caesarean section are included in the module of training. The questionnaires were administered at the end of the intervention, that is, post-test.

Statistical analysis

Descriptive analysis like percentages and frequency tables were used to present the summary of the data, Cronbach's alpha was utilised to test reliability of the instrument and Spearman correlation was used to test the hypotheses - relationship between knowledge and attitude at a 0.05 level of significance. Data were analyzed using the statistical package for social sciences (SPSS) version 20. The knowledge variable was defined by assigning points based on the affirmative response of Yes or No. For example if the number of participants who has correct answer to the questions is below 50%, 1point is assigned, if they are between 50-75% 2 points is assigned while 3points is assigned for participants between 76-100%. The maximum obtainable points of 8 knowledge items is 24 points while the minimum is 8 points. Therefore knowledge is graded thus: 1-8(Low knowledge).9-16 (Medium knowledge) while 17-24 (High Knowledge). The Perception and attitude were scored based on 3 points likert scales thus: Agree(3), Disagree (2) and Not Sure (1). the maximum obtainable score for Perception (7 items) is 21 and the minimum is 7. The maximum obtainable scores for attitude is 30 while the minimum is 10. Factors questionaires were graded on 5 points likert scales. The maximum obtainable mark is 35 while the minimum is 7.

Ethical considerations

Letter of introduction and intention of the study was taking to the Primary Health Care Authority and written permission was obtained. The study is not an invasive study, no formal approval by the Local Ethics Committee was required for this study hence no protocol number was indicated on the

letter but the reference number PHCA/AK-S/020/124. However, the participants informed consent were obtained and willingness to participate was expressed before inclusion in the study. All participants were assured anonymity and confidentiality.

Results

Table 1 revealed the socio-demographic characteristics of the respondents.

Variables	Modalities	Frequency (N=152)	Percentage (%)
Age at last birthday	Less than 20 years 20-30years 31-40years Above 40 years	24 78 38 14	15.8% 51.3% 23.7% 9.2%
Marital Status	Single Married Divorced/Separated Widow	12 137 2 1	7.9% 90.1% 1.3% 0.7%
Ethnicity	Yoruba Igbo Hausa Others	133 11 2 6	87.5% 7.2% 1.3% 3.9%
Religion	Christianity Islam Traditional Others	127 21 1 3	83.6% 13.8% 0.7% 2%
Level of Education	No formal education Primary Secondary school Tertiary	6 13 27 104	3.9% 8.6% 19.1% 68.4%
Occupation	Housewife Artisan Businesswoman Private Sector employee Civil servant	8 19 36 61 28	5.3% 12.5% 23.7% 40.1% 18.4%
Parity	Primipara Multipara	64 88	42.1% 57.9%

Table 1. *Socio-demographic characteristics of the 152 respondents.*

The respondents are 152 in number**.** Of the 152 respondents, 51.3% of the participants fall in the age group between 20-30 years, and 90.1% are married. 87.5% are Yoruba and 83.6% are Christians. Findings further showed that 68.4% had tertiary education, 40.1% were private sector employees and 57.9% were multipara.

Table 2 above shows the knowledge of childbearing mothers on Caesarean section. Before the intervention, the participants had medium knowledge, that is, the score of 16 which is 66.7% of the responses from study participants while after the intervention, the participants had high knowledge of Caesarean section, that is, the score of 24 which is (100%) of obtainable knowledge scores.

	Before		**After**		**Remark**	
Variables	**Yes (%)**	**No (%)**	**Yes (%)**	**No (%)**	**Before**	**After**
Caesarean section is an operation carried out to deliver a baby	91 (59.9%)	61 (40.1%)	152 (100%)	0 (0.0%)	2	3
Caesarean section is a mode of delivery to deprive a woman of the right to womanhood	65 (42.8%)	87 (57.2%)	3 (2%)	149 (98%)	2	3
Caesarean section is an operation to remove the womb	34 (22.4%)	118 (77.6%)	4 (2.6%)	148 (97.4%)	3	3
Caesarean section can be performed to save the mother and the newborn	83 (54.6%)	69 (45.4%)	151 (99.3%)	1 (0.7%)	2	3
Caesarean section is usually performed when a vaginal birth is deemed hazardous either to the foetus or the mother	108 (71.1%)	44 (28.9%)	152 (100%)	0 (0.0%)	2	3
Reasons for the C-section include obstructed labor, twin pregnancy, high blood pressure in the mother, breech birth, and problems with the placenta or umbilical cord	127 (83.6%)	25 (16.4%)	152 (100%)	0 (0.0%)	3	3
A caesarean delivery may be performed based on the shape of the mother's pelvis or the history of a previous C-section.	53 (34.9%)	99 (65.1%)	148 (97.4%)	4 (2.6%)	1	3
Some C-sections are performed without a medical reason, upon request by someone, usually the mother.	29 (19.1%)	123 (80.9%)	141 (92.8%)	11 (7.2%)	1	3

Table 2. *Knowledge of 152 childbearing mothers on Caesarean section*

Table 3 below shows the perception of childbearing mothers toward Caesarean section. The training improves the perception of mothers toward Caesarean as a method mode of delivery. All the respondents (100%) stated that vaginal delivery is a natural and acceptable mode of delivery.

	Before			After		
Variables	**Agree (%)**	**Not Sure (%)**	**Disagree (%)**	**Agree (%)**	**Not Sure (%)**	**Disagree (%)**
Vaginal delivery is a natural and acceptable mode of delivery	148 (97.4%)	0 (0.0%)	4 (2.6%)	152 (100%)	0 (0.0%)	0 (0.0%)
Seeing the baby immediately after vaginal delivery is a pleasure for the mother	151 (99.3%)	0 (0.0%)	1 (0.7%)	92 (60.5%)	2 (1.3%)	58 (38.2%)
Mothers regain their health status sooner after vaginal delivery than caesarean section	137 (90.1%)	12 (7.9%)	3 (2%)	152 (100%)	0 (0.0%)	0 (0.0%)
I believe that having a vaginal birth is a more remarkable experience than delivering by caesarean section	104 (68.4%)	1 (0.7%)	47 (30.9%)	86 (56.6%)	0 (0.0%)	66 (43.4%)
The most important thing in having a vaginal delivery is the woman's own confidence in her ability to give birth	123 (80.9%)	2 (1.3%)	27 (17.8%)	58 (38.2%)	0 (0.0%)	94 (61.8%)
Women who deliver their baby by caesarean section miss an important life experience	98 (64.5%)	0 (0.0%)	54 (35.5%)	23 (15.1%)	0 (0.0%)	129 (84.9%)
I believe that a woman recovers faster after a caesarean section than after vaginal birth	13 (8.6%)	47 (30.9%)	92 (60.5%)	0 (0.0%)	0 (0.0%)	152 (100%)

Table 3. *Perception of 152 childbearing mothers toward Caesarean section.*

Table 4 below shows the attitude of childbearing mothers towards Caesarean section as the accepted mode of delivery among women. Before the training, many mothers had negative attitudes towards Caesarean but this improves after the training.

Variables	Before			After		
	Agree (%)	Not Sure (%)	Disagree (%)	Agree (%)	Not Sure (%)	Disagree (%)
I think Caesarean section can lead to excessive loss of blood, hence I would not undergo one	117 (77%)	9 (5.9%)	25 (16.4%)	78 (51.3%)	0 (0.0%)	74 (48.7%)
It would not undergo a Caesarean section since I can die on the operating table	93 (61.2%)	1 (0.7%)	58 (38.2%)	29 (19.1%)	2 (1.3%)	121 (79.6%)
I believe any woman can have a Caesarean section by choice	46 (30.3%)	14 (9.2%)	92 (60.5%)	137 (90.1%)	0 (0.0%)	15 (9.9%)
I would undergo a Caesarean section if it is necessary to protect me and my baby	127 (83.6%)	2 (1.3%)	23 (15.1%)	149 (98%)	1 (0.7%)	2 (1.3%)
Babies born by Caesarean section are healthier than those delivered by vaginal delivery	59 (38.8%)	16 (10.5%)	77 (50.7%)	12 (7.9%)	2 (1.3%)	138 (90.8)
Caesarean section is not preferable as the pain after delivery is unpleasant	133 (87.5%)	4 (2.6%)	15 (9.9%)	143 (94.1%)	0 (0.0%)	9 (5.9%)
It is a woman's right to choose a Caesarean section for herself, even if there are no medical reasons to have it	36 (23.7%)	27 (18.8%)	89 (58.6%)	144 (93.7%)	0 (0.0%)	8 (5.3%)
I would undergo a Caesarean section if I were more knowledgeable about the risk and procedure	68 (44.7%)	5 (3.3%)	79 (52%)	146 (96.1%)	1 (0.7%)	5 (3.3%)
I would undergo a Caesarean section if my close friend or family consented to it	82 (53.9%)	14 (9.2%)	52 (34.2%)	141 (92.8%)	0 (0.0%)	11 (7.2%)
I would undergo a Caesarean section if it is conducted by a doctor I trust	97 (63.8%)	9 (5.9%)	46 (30.3%)	136 (89.5%)	2 (1.3%)	14 (9.2%)

Table 4. *The attitude of 152 childbearing mothers towards Caesarean section.*

Table 5 above shows factors for not accepting Caesarean section as the mode of delivery among women. The women stated that fear of death, fear of pain, cost of the operation, cultural belief,

being a subject of ridicule by friends, husband disapproval, and religion for not accepting Caesarean section as the mode of delivery among the women.

Variables	Strongly agree (%)	Agree (%)	Not sure (%)	Disagree (%)	Strongly disagree (%)
Fear of death	91 (59.9%)	34 (22.4%)	0 (0.0%)	19 (12.5%)	8 (5.3%)
Fear of pain	88 (57.9%)	47 (30.9%)	1 (0.7%)	14 (9.2%)	2 (1.3%)
Cost of the operation	93 (61.2%)	46 (30.3%)	0 (0.0%)	13 (8.6%)	0 (0.0%)
Being seen as a failure	54 (35.5%)	37 (24.3%)	4 (2.6%)	19 (12.5%)	38 (35%)
Cultural belief	66 (43.4%)	26 (17.1%)	3 (2%)	35 (23%)	22 (14.5%)
Being a subject of ridicule by friends	48 (31.6%)	21 (13.8%)	2 (1.3%)	28 (18.4%)	51 (33.6%)
Husband disapproval	53 (34.9%)	43 (28.3%)	1 (0.7%)	26 (17.1%)	29 (19.1%)
Religion	55 (36.2%)	47 (30.9%)	9 (5.9%)	23 (15.1%)	18 (11.8%)

Table 5. *Factors for not accepting Caesarean section as the mode of delivery among 152 women.*

Knowledge	Attitude								
	Positive		Moderate		Negative		Total(%)	rho	P
	N	%	N	%	N	%			
High	81	53.3%	18	11.8%	1	0.7%	100(65.8%)		
Medium	25	16.4%	10	6.6%	2	1.3%	37(24.3%)	0.300	0.001
Low	11	7.2%	3	2 %	1	0.7%	15(9.9%)		

Table 6. *Spearman correlation between knowledge and attitude of pregnant women towards caesarean section delivery.*

Spearman correlation analysis test was carried out to determine the relationship between knowledge and attitudes, obtained $p < 0.001$ indicating that $p < 0.05$. H0 is rejected and H1 is accepted, it can be concluded that there is a significant relationship between knowledge and attitude of pregnant women towards caesarean section delivery. It is found that rho = 0.300 and the direction of positive

correlation (+). It can be concluded that the strength of the correlation between knowledge and attitude is low, which means that even though in this study there is a significant relationship between the two variables, there are still many factors that influence knowledge and attitude. The results of this study also show a positive correlation direction (+), which means that the relationship between knowledge and unidirectional attitude - meaning that the higher one's knowledge, the better the attitude.

Discussion of findings

The discussions made on the findings of this study are presented in accordance with the research questions. The sub-headings under which the discussions are provided show in specific what each research question seeks to find.

Demographic characteristics of respondents

Findings from this study revealed that the average age of the respondents is 27 years. The majority (90.1%) were married and multipara and the population were dominated by Yoruba and Christians. More than half of the respondents had tertiary education. This was similar to the study of [19] on the attitude of pregnant women in southwestern Nigeria. The findings are in line with the study of [19]on the perception and attitude of pregnant women towards Caesarean section delivery in the University of Port-Harcourt Teaching Hospital, Rivers State, in which the majority of respondents between the age group of 25-29 years, and 85.9% were married.

Knowledge of childbearing mother on Caesarean section

Based on the findings from this study, it was revealed that there was an increase in the knowledge of mothers after the educational intervention on Caesarean section. The increased level of knowledge among pregnant women may be attributed to the educational intervention and

information provided during the training. This is in consonant with the study of [20,21,22] who reported that majority of the women have good knowledge about caesarean section. The study of [23] on pregnant women's knowledge, perception, and attitudes towards the Caesarean section also showed that the majority of women had adequate knowledge and were aware of all of the factors concerning Caesarean section deliveries. This study was in contrast with the study of [24] who reported good knowledge of 17.4% on Caesarean section delivery. [25] also found that there was a low overall knowledge of mothers about the modes of delivery.

Perception of the Childbearing Mothers towards Caesarean section

The findings from this study revealed that the majority of mothers had a poor perception of a Caesarean section before the training; however, there was an increase in the mothers' score on the perception of Caesarean section among childbearing mothers after the intervention. Childbearing mothers still believe that vagina delivery is a natural delivery and has joy attached to it, and most women still prefer it over Caesarean section[25]. The study of [27] reported that having a Caesarean section takes away from the joy of giving birth and was of the view that Caesarean section births are not natural and should be reserved for those with medical issues or those who fear pain.

The attitude of Childbearing Mothers toward Caesarean section

The findings from this study revealed improved scores in the attitude of mothers toward Caesarean section. The majority of the mothers reported that they would opt for Caesarean section if it is necessary to protect them and their babies, and they believe it is a woman's right to choose a Caesarean section for herself, even if there are no medical reasons to have it. They were also of the opinion that Caesarean section is not preferable as the pain associated with it post-delivery is unpleasant. Although before the training majority thought Caesarean section can lead to excessive loss of blood and they could die on the operating table. This assertion corresponds to the finding of

[23] who submitted that the fear of death, complications, and other negative perceptions about Caesarean section make women unwilling to opt for it. The study of [28] on perception and attitude towards Caesarean section in Niger/Delta reflected that 83.2% of mothers would accept Caesarean section if it is a necessity that will protect them and their babies [29].

Factors for not accepting Caesarean section as the mode of delivery among the women

Findings from this study revealed fear of death, fear of pain, cost of the operation, being seen as a failure, cultural belief, husband disapproval, and religion were the factors revealed by the mothers for not accepting Caesarean section as the mode of delivery. [31] listed fear of death, denial of womanhood, expensive mode of delivery, and the possibility of being exposed to insults as reasons for opposing Caesarean section for delivery. [29] stated maternal autonomy, women empowerment and gender inequality as several women often need to take permission from their husbands and/or religious leaders before making health-related decisions[29]. According to [30] women's decision-making in consultation with relatives is the main influencer to accept elective caesarean section.

Discussion of the hypothesis

The primary objective of this study was to investigate the existence of a significant relationship between pregnant women's knowledge and attitudes toward cesarean delivery before and after training. The secondary objective of the study was to describe the levels of knowledge and attitude of childbearing mothers about cesarean section before and after the educational intervention and the factors for not accepting cesarean section as a mode of delivery among women. Based the inferential statistics carried out in this study, it was revealed that there is a significant difference between the pre and post-intervention knowledge of Caesarean section, and pre and post-intervention attitudes of pregnant women towards Caesarean section delivery. Similarly, **[32]** found a significant difference between pre and post-intervention knowledge and pre and post-intervention

attitudes of pregnant women to Caesarean section. Contrary to these findings, there was no significant association between knowledge about Caesarean section and respondents' characteristics in relation to age, marital status, occupation, and previous place of delivery [33].

Conclusions

Nigerian women are unwilling to have Caesarean section because of the general belief that abdominal delivery is a reproductive failure on their part regardless of the feasibility of vaginal birth after a Caesarean section and the decreasing mortality from Caesarean sections. The primary objective of this study was to investigate the existence of a significant relationship between pregnant women's knowledge and attitudes toward cesarean delivery before and after training. The secondary objective of the study was to describe the levels of knowledge and attitude of childbearing mothers about cesarean section before and after the educational intervention and the factors for not accepting cesarean section as a mode of delivery among women. The study revealed an increase in the mothers' knowledge about Caesarean section after the intervention. In addition, both perception and attitude towards Caesarean section improved following the intervention. The researchers found a significant relationship between the knowledge and attitude of pregnant women towards Caesarean section delivery before and after the intervention. It was concluded that the childbearing mothers still believe that vagina delivery is a natural delivery and there is joy attached to it, most women would only agree to have Caesarean section if the need arises but they would still prefer spontaneous vagina delivery.

Recommendations

Based on the findings, the following recommendations are made:

1. There is still a need for awareness programs to increase women's and community's understanding about Caesarean section in Nigeria.
2. Our society needs further enlightenment on the advantages of antenatal care attendance and hospital deliveries as the problem is rooted in our culture.
3. Local, State and Federal Governments should subside the costs of maternity services through an all-inclusive National Health Insurance Scheme. This will go a long way to encourage women to accept Caesarean section when the need arises.

Limitations

The research was carried out in just one health center (Iloro Comprehensive Health Center) in Akure Local government are of Ondo State due limited funds. Future research should utilise more facilities to enhance generalisation.

Conflicts of interest and sources of funding:

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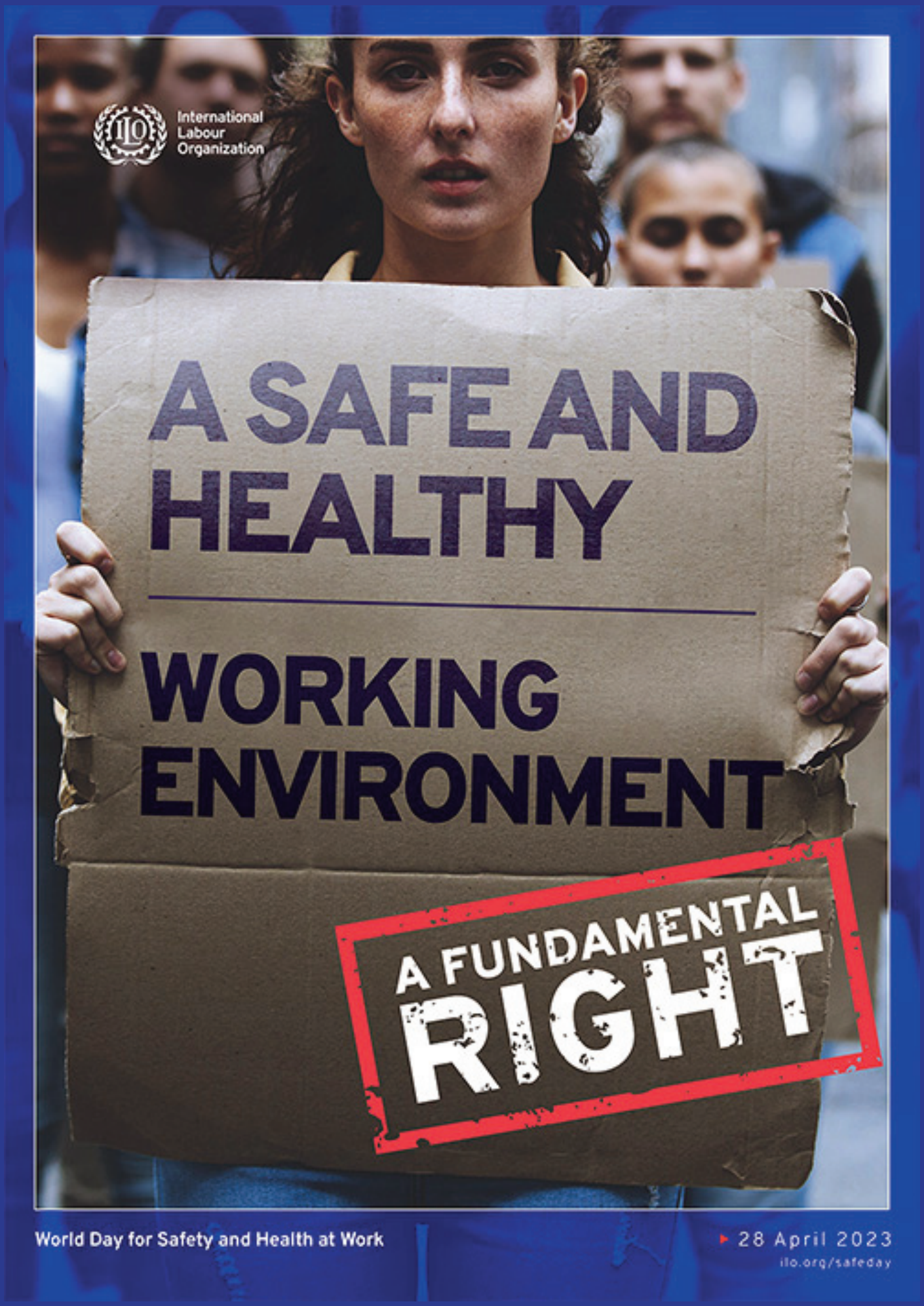
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