بررسی اپیدمیولوژیک سوانح ترافیکی منجر به مرگ در استان سمنان در سال ۱۳۹۱

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چکیده

سابقه و هدف: سوانح ترافیکی در جهان ۲/۱ درصد از کل موارد مرگ و ۲۳ درصد از کل موارد مرگ ناشی از حوادث را تشکیل می‌دهند. کشور ما به لحاظ سوانح ترافیکی به‌عنوان یکی از کشورهای دارای بیش‌ترین موارد تصادف و مرگ ناشی از آن معرفی شده است. با توجه به این‌که میزان بروز مرگ ناشی از سوانح ترافیکی در استان سمنان بسیار بالاتر از میانگین کشوری گزارش شده است، هدف ما در این مطالعه بررسی اپیدمیولوژیک سوانح منجر به مرگ در این استان می‌باشد.

مواد و روش‌ها: در این مطالعه مقطعی-تحلیلی، از کلیه‌ی اطلاعات مربوط به مرگ ناشی از سوانح ترافیکی استان سمنان در سال ۱۳۹۱ که توسط سازمان پزشکی قانونی کشور گزارش شد، استفاده گردید. کلیه‌ی اطلاعات دریافتی، ابتدا کنترل و سپس با استفاده از نرم‌افزار آماری Stata 12 مورد تجزیه و تحلیل از نظر متغیرهای اپیدمیولوژیک قرار گرفت. هم‌چنین رابطه‌ی بین برخی متغیرهای موثر بر روی تصادف با آزمون‌های آماری سنجیده شد.

یافته‌ها: به‌طور کلی در سال ۱۳۹۱ تعداد ۳۳۱ مورد مرگ ناشی از سوانح ترافیکی از استان سمنان گزارش شد. میزان بروز خام و استاندارد شده سنی مرگ به ترتیب ۵۲/۳ و ۵۲/۹ درصد هزار نفر بود. بیش از ۶۸ درصد (۲۲۸ مورد) موارد در مردان مشاهده شد. بیش‌ترین فراوانی مرگ با ۱۳۴ مورد (۴۰/۵ درصد) در گروه سنی ۶۴-۳۵ سال دیده شد. مرگ اکثر افراد به‌علت ضربه به سر (۴۴/۰۷ درصد) بود. بیش‌ترین فراوانی نسبی مرگ در ماه‌های شهریور و تیر مشاهده شد. محل تصادف ۸۱/۹ درصد از مرگ‌ها در محورهای برون‌شهری بود.

نتیجه‌گیری: با توجه به بالا بودن میزان بروز، بیش‌تر بودن فراوانی مرگ‌ها در محورهای برون‌شهری و هم‌چنین این مطلب که ضربه به سر علت مرگ بیش از ۴۰ درصد متوفیان را تشکیل می‌داد، اقدامات پیشگیرانه و برنامه‌ریزی‌های مناسب در جهت کاهش مرگ ناشی از تصادفات، افزیش ایمنی جاده‌ها و راه‌ها به‌خصوص محورهای برون‌شهری ضروری به نظر می‌رسد.

واژه‌های کلیدی: حوادث رانندگی، اپیدمیولوژی، استان سمنان، میزان مرگ و میر

مقدمه

سوانح ترافیکی در جهان ۲/۱ درصد از کل موارد مرگ و ۲۳ درصد از کل موارد مرگ ناشی از حوادث را تشکیل می‌دهند [۱]. مرگ‌های ناشی از سوانح ترافیکی به آن دسته از مرگ‌هایی گفته می‌شوند که در هنگام وقوع حادثه ترافیکی یا ظرف ۳۰ روز پس از حادثه به علت آسیب ناشی از حادثه

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بروز می‌کنند [۲]. سوانح ترافیکی هشتمین علت منجر به مرگ در جهان و اولین علت مرگ در گروه سنی ۲۹- ۱۵ است. سالانه در جهان به‌علت سوانح ترافیکی بیش از ۱/۲۴ میلیون مرگ، ۱۰ میلیون معلولیت و حدود ۵۰ میلیون مصدومیت رخ می‌دهد [۳-۵]. در صورت عدم مداخله این ارقام از سال ۲۰۰۰ تا ۲۰۲۰، در سراسر دنیا ۶۵ درصد، و در کشورهای کم‌درآمد ۸۵ درصد افزایش خواهد یافت. به‌طوری که طبق پیش‌بینی سازمان جهانی بهداشت سوانح ترافیکی در سال ۲۰۲۰ به سومین علت مرگ و ناتوانی تبدیل خواهد شد [۶،۷]. سوانح ترافیکی در کشورهای با درآمد پایین اهمیت بیش‌تری دارد و با وجود این‌که تنها ۴۰ درصد از وسایل نقلیه مربوط به کشورهای بادرآمد پایین می‌باشد، ولی مصدومیت و مرگ ناشی از سوانح ترافیکی در این کشورها بسیار بالا است [۸].

میزان بروز مرگ ناشی از سوانح ترافیکی در جهان، منطقه مدیترانه شرقی و منطقه اروپا به ترتیب ۱۸/۸، ۳۲/۲ و ۱۳/۴ در صد هزار نفر می‌باشد و این میزان در ایران بنا به گزارش سازمان بهداشت جهانی بسیار بالاتر از جهان است [۹]. کشور ما به لحاظ سوانح ترافیکی به‌عنوان یکی از کشورهای دارای بیش‌ترین موارد تصادف و مرگ ناشی از آن معرفی شده است [۱۰]. سوانح ترافیکی در ایران اولین علت عمر از دست رفته و دومین علت مرگ بعد از بیماری‌های قلبی- عروقی است و از جمله مهم‌ترین مشکلاتی است که سلامت کشورمان را تهدید می‌نماید [۱۱]. میزان مرگ سوانح ترافیکی در دنیا به ازای هر ده هزار خودرو سه نفراست، در حالی که این میزان در کشور ما ۳۳ نفر می‌باشد که متاسفانه طی دهه‌های اخیر این تلفات افزایش یافته است [۱۲]. بر اساس گزارش سازمان پزشکی قانونی در سال ۱۳۹۱ میزان بروز مرگ ناشی از سوانح ترافیکی در کل کشور ۲۶/۲ و در استان سمنان ۵۲/۳ درصد هزار نفر گزرش شد [۱۳]. با توجه به بالا بودن میزان بروز مرگ و به‌منظور به‌کارگیری مداخلات موثر برای کاهش مرگ ناشی از سوانح ترافیکی ضروری است تا درک درستی از اپیدمیولوژی مرگ در سوانح ترافیکی داشته باشیم. لذا این مطالعه با هدف بررسی اپیدمیولوژیک سوانح ترافیکی منجر به مرگ در استان سمنان در سال ۱۳۹۱ انجام شد.

مواد و روش‌ها

کلیه آمار مربوط به سوانح ترافیکی منجر به فوت ارجاع شده به سازمان پزشکی قانونی کشور از استان سمنان در سال ۱۳۹۱ جمع‌آوری و مورد بررسی قرار گرفت. در استخراج داده‌ها از فرم‌های جمع‌آوری مربوط به مرگ ناشی از سوانح ترافیکی سازمان پزشکی قانونی استفاده شد. بر اساس این فرم‌ها، فراوانی سوانح ترافیکی به تفکیک سن، جنس، تحصیلات، نوع فعالیت متوفی، نوع خودرو مورد استفاده، نوع خودرو درگیر با عابر یا درگیر با وسیله نقلیه متوفی، محل وارد شدن ضربه، علت نهایی فوت، وضعیت متوفی، محل فوت، نحوه وقوع تصادف، وضعیت روشنایی، رنگ لباس و محل تصادف استخراج و مورد بررسی قرار گرفت.

در محاسبه میزان بروز مرگ از آن‌جایی که جمعیت سال ۱۳۹۱ در دسترس نبود، از نتایج سرشماری سال ۱۳۹۰ (که توسط مرکز آمار ایران منتشر شده است) و متوسط درصد رشد سالانه استان سمنان (۱/۳۷ درصد) برای برآورد جمعیت سال ۱۳۹۱ استفاده گردید. هم‌چنین برای تعیین میزان بروز استاندارد شده سنی که با هدف از بین بردن اثر متغیر مخدوشگر سن و قابل مقایسه بودن این میزان با جمعیت‌های مختلف انجام شد، از جمعیت استاندارد سازمان بهداشت جهانی استفاده گردید.

به‌منظور محاسبه میزان بروز مرگ بر اساس تردد در ماه‌ها و ساعات مختلف در محورهای برون‌شهری تعداد کل ترددها در محورهای برون‌شهری استان سمنان با استفاده از گزارش سازمان راه‌داری و حمل و نقل جاده‌ای استان برآورد گردید. هر چند برآورد کل ترددها در محورهای برون‌شهری دقیق نمی‌باشد، ولی با توجه به یکسان بودن میزان خطا در تمام ماه‌ها و ساعات، میزان‌های محاسبه شده برای مقایسه مناسب می‌باشند. برای بررسی رابطه بین بروز مرگ بر اساس ترددها در ماه‌های مختلف از مدل آنالیز رگرسیون پوآسون استفاده

شد. به‌منظور بررسی ارتباط بین متغیرهای محل تصادف با محل فوت و هم‌چنین نوع خودرو مورد استفاده با نحوه وقوع تصادف از آزمون آماری کای اسکوئر استفاده گردید. سطح معناداری آماری، مقدار پی (P-value) کم‌تر از ۰/۰۵ تعیین گردید.

پس از کسب مجوز، بخشی از اطلاعات مورد نیاز از سازمان پزشکی قانونی کشور دریافت شد و سایر اطلاعات مورد نیاز نیز از مرکز آمار ایران، سازمان راه‌داری و حمل و نقل جاده‌ای و سازمان بهداشت جهانی که به صورت الکترونیکی موجود می‌باشد استخراج گردید. اطلاعات دریافتی از سازمان پزشکی قانونی، ابتدا کنترل و سپس با استفاده از نرم‌افزار آماری Stata 12 مورد تجزیه و تحلیل قرار گرفت.

نتایج

به‌طور کلی ۳۳۱ نفر در سال ۱۳۹۱ در استان سمنان به علت سوانح ترافیکی جان خود را از دست دادند. میانگین سنی ۱/۱±۳۷/۷ سال با دامنه سنی کم‌تر از یک ماه تا ۸۷ سال بود. میزان بروز خام مرگ ناشی از سوانح ترافیکی ۵۲/۳ و میزان بروز استاندارد شده آن ۵۲/۹ درصد هزار نفر بود. تعداد ۲۲۸ مورد از مرگ‌ها در مردان (۶۸/۸۸ درصد) و ۱۰۳ نفر در زنان (۳۲/۱۲ درصد) رخ داده بود (نسبت مرد به زن ۲/۲۱ به ۱ بود). میزان بروز در مردان ۷۱/۴ و در زنان ۳۳/۰۲ درصد هزار نفر بود. بالاترین میزان بروز مرگ بر اساس جنسیت در گروه سنی بالای ۶۵ سال، بر اساس تحصیلات در افراد بی‌سواد و از نظر تاهل در افراد متاهل مشاهده شد (جدول۱).

بالاترین میزان بروز و فراوانی مرگ در شهریور مشاهده شد (جدول۲).

جدول۱. توزیع فروانی سن، تحصیلات و تاهل متوفیان در سوانح ترافیکی به تفکیک جنسیت در استان سمنان در سال ۱۳۹۱

متغیر	مرد		زن		کل	
	تعداد(درصد)	میزان بروز در صد هزار نفر	تعداد(درصد)	میزان بروز در صد هزار نفر	تعداد(درصد)	میزان بروز در صد هزار نفر
سن						
>۱۵	۱۷(۷/۵)	۲۴/۳	۱۸(۱۷/۵)	۲۶/۷	۳۵(۱۰/۶)	۲۵/۴
۱۵-۲۴	۴۵(۱۹/۷)	۶۷/۱	۷(۶/۸)	۱۰/۹	۵۲(۱۵/۷)	۳۹/۵
۲۵-۳۴	۵۶(۲۴/۶)	۸۵/۲	۱۸(۱۷/۵)	۲۸	۷۴(۲۲/۳)	۵۶/۹
۳۵-۶۴	۸۶(۳۷/۷)	۸۶/۹	۴۸(۴۶/۶)	۴۹/۴	۱۳۴(۴۰/۵)	۶۸/۳
>۶۵	۲۴(۱۰/۵)	۱۱۷/۴	۲۴(۱۱/۶)	۵۵/۸	۳۶(۱۰/۹)	۸۵/۸
تحصیلات						
بیسواد	۲۸(۱۲/۵)	۱۱۸/۴	۳۱(۳۱)	۸۰/۲	۵۹(۱۸/۲)	۹۶
ابتدایی	۵۵(۲۴/۵)	۹۰/۱	۲۳(۲۳)	۳۷/۲	۷۸(۲۴/۱)	۶۴/۳
راهنمایی	۵۸(۲۵/۹)	۱۰۲	۱۳(۱۳)	۲۹/۳	۷۱(۲۱/۹)	۷۰/۱
دبیرستان و دیپلم	۵۹(۲۶/۴)	۷۷/۱	۲۱(۲۱)	۲۹/۲	۸۰(۲۴/۷)	۵۴/۶
عالی	۲۴(۱۰/۷)	۳۷/۱	۱۲(۱۲)	۲۰/۶	۳۶(۱۱/۱)	۲۹/۷
تاهل						
مجرد	۶۴(۲۹/۶)	۶۳/۵	۱۰(۱۱/۵)	۱۳/۲	۷۴(۲۴/۴)	۴۱/۹
متاهل	۱۵۲(۷۰/۴)	۸۹/۲	۷۷(۸۸/۵)	۴۰/۷	۲۲۹(۷۵/۶)	۶۳/۷

میزان بروز مرگ در محورهای برون‌شهری استان بر اساس کل ترددهای وسایل نقلیه ۴/۲۲ در میلیون بود. بالاترین میزان بروز مرگ بر اساس تعداد تردد در محورهای برون‌شهری در تیر مشاهده شد (جدول۲).

جدول۲. میزان بروز و توزیع مرگ ناشی از سوانح ترافیکی براساس ماه های مختلف در استان سمنان در سال ۱۳۹۱

ماه	میزان بروز در صد هزار نفر	تعداد(درصد)	میزان بروز در یک میلیون تردد
فروردین	۵/۵	۳۵(۱۰/۶)	۵/۶
اردیبهشت	۳/۷۷	۲۴(۷/۳)	۳/۵
خرداد	۴/۲۴	۲۷(۸/۲)	۴/۵
تیر	۶/۷۴	۴۳(۱۳)	۶/۵
مرداد	۲/۸۲	۱۸(۵/۴)	۳/۴
شهریور	۷/۵۱	۴۸(۱۴/۵)	۵/۴
مهر	۵	۳۲(۹/۷)	۵/۱
آبان	۴/۶۸	۳۰(۹/۱)	۴/۴
آذر	۳/۲۷	۲۱(۶/۳)	۳/۷
دی	۳/۱۱	۲۰(۶)	۳
بهمن		۱/۰۹	۷(۲/۱) ۱
اسفند	۴/۰۴	۲۶(۷/۸)	۳/۶

رابطه آماری معناداری بین میزان بروز مرگ بر اساس تعداد کل ترددها در محورهای برون‌شهری با ماه‌های مختلف مشاهده شد (جدول ۳).

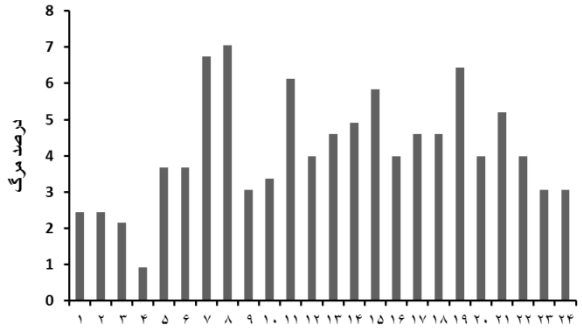
بیش‌ترین فراوانی مرگ در ساعت ۷ و ۸ صبح رخ داده بود (شکل۱).

بالاترین میزان بروز مرگ در محورهای برون‌شهری بر اساس تعداد کل ترددها در ساعات مختلف بین ساعات ۸-۵ صبح رخ داده بود (شکل۲).

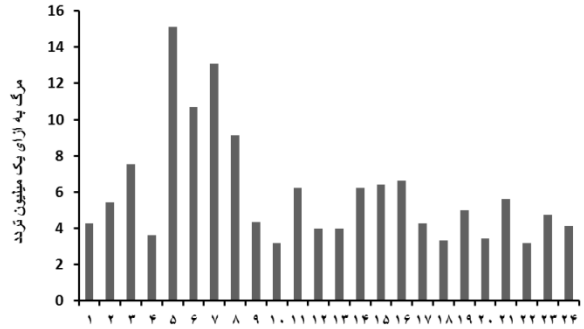
محل تصادف ۸۱/۹ درصد متوفیان در محورهای برون‌شهری، ۱۲/۴ درصد در محورهای درون‌شهری و ۵/۴ درصد در جاده‌های روستایی و خاکی بود. بیش‌ترین فراوانی مرگ در محورهای برون‌شهری به ترتیب در بزرگ‌راه‌ها (۵۵ درصد)، راه‌های اصلی (۳۴ درصد)، راه‌های فرعی (۵/۰۷ درصد)، راه‌های روستایی (۴/۳۹ درصد) و آزادراه‌ها (۱ درصد) مشاهده شد.

جدول۳. رابطه بین میزان بروز مرگ با ماه های مختلف براساس تعداد کل ترددها در محورهای برون شهری استان سمنان در سال ۱۳۹۱

ماه	نسبت میزان بروز (IRR)	P-value	فاصله اطمینان ۹۵ درصد	
فروردین	۱/۴۲	۰/۲۱	۰/۸۱	۲/۴۹
اردیبهشت	۰/۸۲	۰/۵۶	۰/۴۳	۱/۵۷
خرداد	۱/۴۹	۰/۱۷۹	۰/۸۳	۲/۶۷
تیر	۲/۰۳	۰/۰۰۸	۱/۱۹	۳/۴۶
مرداد	۰/۹۳	۰/۸۳	۰/۴۸	۱/۷۹
شهریور	۲/۳۰	۰/۰۰۲	۱/۳۷	۳/۸۶
مهر	۱/۴۰	۰/۲۲	۰/۸۰	۲/۴۶
آبان	۱/۵۴	۰/۱۴	۰/۸۶	۲/۷۵
آذر	۰/۵۷	۰/۰۹	۰/۳۰	۱/۱۰
دی	۰/۸۳	۰/۵۹	۰/۴۴	۱/۵۹
بهمن	۰/۲۷	۰/۰۰۹	۰/۱۰	۰/۷۲
اسفند	رفرنس	–	–	–



شکل۱. توزیع فراوانی مرگ در ساعات مختلف شبانه روز در استان سمنان در سال ۱۳۹۱



شکل ۲. میزان بروز مرگ در ساعات مختلف شبانه روز براسس تعداد ترددها در محورهای برون شهری در استان سمنان در سال ۱۳۹۱

بالاترین فراوانی مرگ از نظر وضعیت روشنایی هنگام تصادف به ترتیب در روز (۶۲/۰۱ درصد)، شب (۳۱/۶۱ درصد) و هنگام طلوع یا غروب آفتاب (۶/۰۸ درصد) بود.

در بیش از ۸۸ درصد متوفیان ضربه به سر و صورت مشاهده شد (جدول۴).

جدول۴. توزیع فراوانی محل ضربه متوفیان در تصادفات رانندگی در استان سمنان در سال ۱۳۹۱

محل ضربه	تعداد	درصد
سر و صورت	۲۸۹	۸۸/۱
گردن	۴۳	۱۳/۱
سینه و شکم	۱۸۰	۵۴/۹
دست و بازو	۱۱۸	۳۶
خلف تنه	۱۸	۵/۵
لگن	۲۷	۸/۲
پاها	۱۱۲	۳۴/۲

سه علت مهم مرگ به ترتیب ضربه به سر (۴۴/۱ درصد)، شکستگی‌های متعدد (۴۱ درصد) و خونریزی (۸/۵ درصد) بود. وضعیت ۵۰/۹ درصد از متوفیان در هنگام تصادف سرنشین، ۳۸/۵ درصد راننده و ۱۰ درصد عابر پیاده بود. فوت ۵۵/۹ درصد از متوفیان در محل حادثه، ۳۹/۵ درصد در بیمارستان و ۴/۶ درصد در حین انتقال به بیمارستان بود. نحوه انتقال ۹۶/۵ درصد از متوفیان توسط آمبولانس و ۳/۵ درصد توسط سایر وسایل نقلیه بود. نحوه وقوع تصادفات به ترتیب به صورت واژگونی وسیله نقلیه حامل متوفی (۴۴ درصد)، برخورد وسایل نقلیه با یک‌دیگر (۴۰/۶ درصد)، برخورد وسیله نقلیه به عابر متوفی (۱۰/۱ درصد) و برخورد وسیله نقلیه به شئ ثابت (۵/۳ درصد) بوده است. خودرو مورد استفاده‌ی ۷۱ درصد متوفیان سواری و وانت بار، ۱۶/۵ درصد موتورسیکلت و دوچرخه، و ۱۲/۵ درصد وسایل نقلیه سنگین بود.

بین محل تصادف و محل فوت از نظر آماری رابطه‌ی معناداری مشاهده شد (P=۰/۰۰۹). به‌طوری که مرگ ۶۰/۲ درصد از تصادفات برون‌شهری و ۳۴/۱ درصد از تصادفات درون‌شهری در محل حادثه رخ داده بود (جدول ۵).

جدول۵ . ارتباط بین محل تصادف با محل فوت در تصادفات منجر به فوت در استان سمنان در سال ۱۳۹۱

محل فوت / محل تصادف	محل حادثه		حین انتقال به بیمارستان		بیمارستان	
	تعداد	درصد	تعداد	درصد	تعداد	درصد
درون شهری	۱۴	۳۴/۱	۲	۴/۸۷	۲۵	۶۰/۹۷
برون شهری	۱۶۲	۶۰/۲	۱۱	۴/۱	۹۶	۳۵/۷
جاده های روستایی و خاکی	۷	۳۸/۸	۲	۱۱/۲	۹	۵۰
کل	۱۸۳	۵۵/۸	۱۵	۴/۶	۱۳۰	۳۹/۶

Pearson chi2(4) = 13.3966 Pr = 0.009

رابطه معناداری نیز بین نوع خودرو مورد استفاده و نحوه وقوع تصادف مشاهده شد (P=۰/۰۰۰). نحوه وقوع تصادف ۶۲/۸ درصد از متوفیانی که خودرو مورد استفاده آن‌ها سواری یا وانت‌بار بود، به‌صورت واژگونی وسیله نقلیه حامل متوفی گزارش شد، در حالی که نحوه وقوع تصادف متوفیانی که از وسایل نقلیه سنگین و موتورسیکلت یا دوچرخه استفاده کرده بودند، بیش‌تر به‌صورت برخورد وسایل نقلیه با یک‌دیگر بود (جدول ۶).

جدول۶. ارتباط بین خودرو مورد استفاده با نحوه وقوع تصادف در تصادفات منجر به فوت در استان سمنان در سال ۱۳۹۱

خودرو مورد استفاده / نحوه وقوع تصادف	سواری و وانت بار		وسایل نقلیه سنگین		موتورسیکلت و دوچرخه	
	تعداد	درصد	تعداد	درصد	تعداد	درصد
برخورد وسایل نقلیه با یکدیگر	۷۱	۳۴/۳	۲۴	۶۴/۸۶	۳۸	۸۰/۸۵
برخورد وسیله نقلیه به شیء ثابت	۱۰	۴/۸	۱	۲/۷	۶	۱۲/۷۶
واژگونی وسیله نقلیه حامل متوفی	۱۲۶	۶۰/۹	۱۲	۳۲/۴۴	۳	۶/۳۸
کل	۲۰۷	۱۰۰	۳۷	۱۰۰	۴۷	۱۰۰

Pearson chi2(4) = 52.1237 Pr = 0.000

بحث و نتیجه‌گیری

به‌طور کلی در سال ۱۳۹۱ تعداد ۳۳۱ مرگ به علت سوانح ترافیکی در استان سمنان توسط پزشکی قانونی گزارش شد. میزان بروز مرگ ناشی از سوانح ترافیکی ۵۲/۹ درصد هزار نفر بود که بیش‌تر از میزان بروز مرگ در کشور (۳۴/۱ درصد هزار نفر) می‌باشد [۱۴]. از علت‌های مهم در میزان بروز بالای مرگ در این استان می‌توان به فاصله زیاد بین محورهای برون‌شهری این استان و تردد بیش‌تر در محورهای این استان به‌دلیل هم‌جواری با استان تهران اشاره نمود.

در این مطالعه نسبت مرگ مردان به زنان ۲/۱۶ به ۱ بود. این نسبت در مطالعه انجام شده در هندوستان ۶/۵۸ به ۱ [۱۵] و در مطالعه انجام شده در غنا ۲/۸ به ۱ بود [۱۶]. در مطالعات انجام شده در کشور ما این نسبت بین ۵/۸ به ۱ تا ۲/۳۷ به ۱ در تغییر بوده است [۱۷-۲۱]. بالا بودن نسبت مرگ مردان در مقایسه با زنان در کشور ما می‌تواند به‌دلیل دخالت بیش‌تر مردان نسبت به زنان در سیستم حمل و نقل جاده‌ای باشد و هم‌چنین به‌دلیل محدودیت‌های فرهنگی که استفاده از موتورسیکلت و دوچرخه در بین زنان مرسوم نیست.

نتایج این مطالعه نشان داد که بیش‌ترین فراوانی نسبی مرگ در ماه‌های شهریور و تیر بود. نتایج این مطالعه با نتایج برخی از مطالعات از جمله با آمار گزارش شده در سال‌نامه آماری سال ۱۳۹۱ توسط سازمان راه‌داری و حمل و نقل جاده‌ای کشور، نتایج حاصل از مطالعه نورزاد و همکاران و مطالعه توانانیا مطابقت دارد، ولی در مطالعه شمس خرم‌آبادی و همکاران بیش‌ترین فراوانی در فصل زمستان بود [۲۳،۲۲،۲۰،۱۷]. بالا بودن فراوانی مرگ در ماه‌های شهریور و تیر می‌تواند به‌دلیل بالا بودن تعداد ترددها در محورهای برون‌شهری (حدود ۸۲ درصد از مرگ‌ها در محورهای برون‌شهری رخ داده بود) در ماه‌های تیر و شهریور که مردم به‌خاطر تعطیلات بیش‌تر به مسافرت می‌روند باشد.

در این مطالعه بیش‌ترین فراوانی مرگ در گروه سنی ۶۴-۳۵ سال و بالاترین میزان بروز مرگ در گروه سنی بیش از ۶۵ سال مشاهده شد. که با نتایج حاصل از مطالعه قربانی و همکاران مطابقت دارد، در مطالعه وفایی و همکاران، مطالعه نورزاد و همکاران و مطالعه شمس خرم‌آبادی و همکاران بیش‌ترین مرگ در سنین ۳۰-۲۰ سال، و در مطالعه توانانیا در سنین ۳۶-۱۹ سال مشاهده شد [۲۴،۲۲،۲۰،۱۸،۱۷]. بالاتر بودن میزان بروز مرگ در گروه سنی بالای ۶۵ سال می‌تواند به‌دلیل آسیب‌پذیر بودن این گروه سنی در تصادفات و واکنش کندتر به خطر باشد.

در این پژوهش زمان اوج مرگ ساعت ۷ و ۸ صبح و بالاترین میزان بروز مرگ براساس ترددها در ساعات بین ۸-۵ صبح بود. در مطالعه قربانی و همکاران بیش‌ترین تصادفات در ساعت ۱۸-۱۳، در مطالعه زرگر و همکاران ساعات ۱۲ ظهر تا ۶ عصر و در مطالعه محمد فام و صدری ساعات ۱۶ و ۱۷ زمان سیاه حوادث رانندگی بوده است [۲۶،۲۵]. از آن‌جایی که بیش‌ترین ترددها در ساعات بین ۲۰-۱۷ ولی بیش‌ترین فراوانی مرگ و بالاترین میزان بروز مرگ بر اساس تردد در ساعات ابتدایی روز بود، می‌توان دلیل احتمالی این اختلاف را خواب‌آلودگی رانندگان در ساعات ابتدایی روز به‌علت رانندگی زیاد در طول شب به‌خصوص در محورهای برون‌شهری دانست.

در مطالعه پیش رو نشان داده شد که رابطه‌ی معکوسی بین میزان تحصیلات و مرگ وجود دارد. به‌طوری که بیش‌ترین میزان مرگ مربوط به افراد بی‌سواد بود. در مطالعات انجام شده توسط صیاد رضایی و همکاران، نورزاد و همکاران رابطه معکوسی بین میزان تحصیلات و تصادفات مشاهده شد. در مطالعه شمس خرم‌آبادی و همکاران ۶۲/۵ درصد تصادفات در افراد بی‌سواد و کم‌سواد رخ داده بود [۲۷،۲۲،۲۰].

در مطالعه حاضر بیش‌ترین تصادفات از نظر وضعیت روشنایی هنگام تصادف در روز بود که با نتایج مطالعه وفایی و همکاران هم‌خوانی دارد [۲۴].

نتایج این مطالعه نشان داد که بیش از ۸۱ درصد از موارد مرگ در محورهای برون‌شهری رخ داده بود. این نسبت در مطالعه صیاد رضایی و همکاران ۶۳ درصد، در مطالعه نورزاد

و همکاران ۵۷ درصد و در مطالعه‌ی قربانی و همکاران ۵۰ درصد گزارش شده است. بیش‌تر بودن فراوانی مرگ در محورهای برون‌شهری این استان در مقایسه با سایر مطالعات می‌تواند به‌دلیل موقعیت جغرافیایی استان سمنان باشد که در مسیر محورهای متصل به تهران قرار دارد و با افزایش حجم ترافیک عبوری از محورهای برون‌شهری این استان هم‌راه است.

در این مطالعه مرگ اکثر افراد به‌علت ضربه به سر بود که با نتایج مطالعه نورزاد و همکاران مطابقت دارد. در مطالعه قربانی و همکاران اکثر صدمات وارده به بدن مربوط به اندام‌های تحتانی و بیش‌تر به صورت شکستگی ساق پا بود [۲۲،۱۸]. نتایج مطالعه نشان داد که محل فوت اکثر متوفیان در محل حادثه بود. نتایج مطالعه نورزاد و همکاران نیز با نتایج این مطالعه هم‌خوانی دارد [۲۲]. در این مطالعه مرگ ۴/۵ درصد از متوفیان در حین انتقال به بیمارستان و ۳۹ درصد در بیمارستان بود که این امر از عدم کمک‌رسانی به موقع به مصدومین حادثه در سطح استان حکایت می‌کند.

با توجه به بالا بودن تعداد مرگ در استان سمنان، بیش‌تر بودن تعداد مرگ‌های برون‌شهری و هم‌چنین این مطلب که ضربه به سر علت بیش از ۴۰ درصد متوفیان را تشکیل می‌داد، اقدامات پیشگیرانه و برنامه‌ریزی‌های مناسب در جهت کاهش مرگ ناشی از تصادفات، افزیش ایمنی جاده‌ها و راه‌ها به خصوص محورهای برون‌شهری ضروری است. هم‌چنین با توجه به این‌که با کنترل ترددهای صورت گرفته خطر مرگ در تصادفات رانندگی در ماه‌های شهریور و تیر در مقایسه با اسفند ماه بیش‌تر بود لذا نظارت دقیق پلیس در فصل تابستان بر اجرای بستن اجباری کمربند ایمنی و آموزش‌های لازم جهت رعایت قوانین راهنمایی و رانندگی و کنترل سرعت مجاز ضروری به نظر می‌رسد.

محدودیت‌ها: از جمله محدودیت‌های مطالعه می‌توان به عدم دسترسی به متغیرهایی مانند سرعت وسیله نقلیه، استفاده از مشروبات الکلی، وضعیت هوا و وضعیت شغلی اشاره نمود. هم‌چنین با توجه به این‌که تعداد ترددها در تمام محورهای برون‌شهری استان سمنان گزارش نشده بود، ما در این مطالعه برای به‌دست آوردن تعداد کل ترددها در محورهای برون‌شهری تعداد تردد در ۱۰ محور استان سمنان را محاسبه کردیم و تعداد ترددها در ۲۲ محور را برآورد کردیم که این بهترین برآوردی بود که می‌توانست انجام شود. برآورد تعداد ترددهای درون‌شهری امکان‌پذیر نبود که بهتر بود تعداد ترددهای درون‌شهری نیز برآورد می‌شد و بر اساس کل ترددهای استان (درون‌شهری و برون‌شهری) بروز مرگ بر اساس تعداد تردد را به‌دست می‌آوردیم.

تشکر و قدردانی

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منابع

[1] Ainy E, Soori H, Ganjali M, Baghfalaki T. Road traffic injury cost estimation by willingness to pay method. J Safe Prom Injury Prrevent 2014; 2: 215-225.

[2] Bahadorimonfared A, Soori H, Mehrabi Y, Delpisheh A, Esmaili A, Salehi M, et al. Trends of fatal road traffic injuries in Iran (2004–2011). PloS One 2013; 8: e65198.

[3] World Health Organization. Available http://www.who.int/gho/road_safety/mortality/number_text/en./

[4] Pfortmueller CA, Marti M, Kunz M, Lindner G, Exadaktylos AK. Injury severity and mortality of adult zebra crosswalk and non-zebra crosswalk road crossing accidents: a cross-sectional analysis. PloS One 2014; 9: e90835.

[5] Saadat S, Soori H. Epidemiology of traffic injuries and motor vehicles utilization in the Capital of Iran: A population based study. BMC Public Health 2011; 11: 488.

[6] Krug E, Organization WH. Injury: a leading cause of the global burden of disease: violence and injury prevention, department for disability/injury prevention and rehabilitation. World Health Organizat 1999.

[7] World Health Organization. World health report 2002: reducing risks, promoting healthy life. Geneva: World Health Organizat 2002.

[8] Sanaei H, Irani G, Rafati H. Evaluate the frequency and risk factors of traffic accidents in a military base in Tehran. J Management Studies, Law. 1388;1:30-19.

[9] Tabibi Z, Pfeffer K, Sharif JT. The influence of demographic factors, processing speed and short-term memory on Iranian children's pedestrian skills. Accid Anal Prev 2012; 47: 87-93.

[10] Yonesian M, Moradi A. Knowledge, attitude and practice of drivers on regulation of traffic in Tehran. J Sch Public Health Instit Public Health Res 2005. (Persian).

[11] Kim JK, Ulfarsson GF, Shankar VN, Kim S. Age and pedestrian injury severity in motor-vehicle crashes: A heteroskedastic logit analysis. Accid Anal Prev 2008; 40: 1695-1702.

[12] Maracy M, Isfahani MT. The burden of road traffic injuries in Isfahan, Iran in 2010. J Kerman Univ Med Sci 2013; 20: 505-519. (Persian).

[13] Iranian Legal Medicine Organization. Semnan province- general office of legal medicine. Availaible From: http://sm.lmo.ir/uploads/sm_tas_90.pdf. .

[14] World Health Organization. avaliable http://apps.who.int/gho/data/node.main.A997.

[15] Chauhan A, Ahmed N, Singh JV, Singh VK, Singh A, Kumar S. Epidemiology of road traffic injuries in a tertiary care centre of Lucknow. Indian J Comm Health 2014; 26: 181-186.

[16] Hesse CA, Ofosu JB. Epidemiology of road traffic accidents in ghana. Eur Sci J 2014; 10.

[17] Tvananya M. Epidemiology of road traffic accidents in Qom. Qom Univ Med Sci J 1390; 5. (Persian).

[18] Afyh G, Mohammad Reza R, Chakozi A. Epidemiology of trauma from accidents Motahari Hospital Kavos Gonbad. J Forens Med 1388; 15: 29-34. (Persian).

[19] Yousefzadeh S, Ahmadi Dafchahi M, Mohammadi Maleksari H, Dehnadi Moghadam A, Hemati H, Shabani S. epidemiology of injuries and their causes among traumatic patients admitted into poursina hospital, Rasht. J Kermanshah Univ Med Sci 2007; 11. (Persian).

[20] Shams M, Geledar N, Madanipoor M, Amiri Z, Dehdast S, Mirzaei Z, et al. An epidemiological study of 2997 cases of traffic accidents in patients admitted to trauma center Shohada Hospital in Tehran during the 1389-87 academic. J Sci Health 1389; 5: 214. (Persian).

[21] Zangi M, Saadat S, Nahidi S, Svanström L, Mohammadi R. Epidemiology of injuries in metropolitan Tehran, Iran: a household survey. Internat J Injury Cont Safe Prom 2014 (ahead-of-print):1-8.

[22] Norzad S, Nazmfar H, Valizadeh B, Sadeghie S, Farzaneh E. Geographical dispersion of causes of death and risk factors in fatal road accident in Ardebil province(a GIS analysis). Ardabil Univ Med Sci Health Servic 1393. (Persian).

[23] ICT PDOo. Statistical calendar 1391 http://www.rmto.ir/SalnameAmari/1392 [cited 1392].

[24] Vafaei R, abadi HH, Haddadi M, Soori H, Esmaeili A, Akbarpoor S, et al. Epidemiological survey of road traffic accidents leading to injury in Tehran - Abali in 1387 to police reports. J Sci Health 1389; 5: 74.

[25] Zargar M, Sayyar Roudsari B, Shadman M, Tarighi P. Epidemiology of traffic related injuries among children in Tehran: The necessity of implementation of injury prevention protocols. Hakim Res J 2002; 2: 77-82. (Persian).

[26] Mohamad Fam I, Ghazizadeh A. An epidemiological survey of lead to death road accidents in Tehran province in 1999. Sci J Kurdistan Univ Med Sci 2002; 23: 35-40.

[27] Sayyad Rezaei E, Zohori H, Rostami K. Therapeutic efficacy of topical fluorouracil and cryotherapy in the treatment of plantar warts. Ardabil Univ Med Sci Health Serv 1380. available http://eprints.arums.ac.ir/393/.

Ranking and clustering Iranian provinces based on important health indicators of vital horoscope in rural areas by using multivariate methods

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Introduction*:* Gaining information about the condition of a society from various aspects is one of the main requirements for planning. Assessment and determination of social condition would help the executives to quickly estimate the essential requirements. In regard to the lack of proper ranking and clustering information related to provinces with the use of related variables due to health indicators of vital horoscope in rural areas, we conducted this study with the aim of ranking and clustering of provinces using these indicators.

Materials and methods*:* Provinces were ranked based on the group of vital horoscope indices related to the rural areas published by the Ministry of Health. Multivariate analysis of the principal components and factorial analysis were used to rank the provinces and cluster analysis was applied to specify the homogeneous provinces. The data were analyzed by using SPSS16 and R3.1.1 software.

Results*:* Three extracted factors of mortality, fertility and population, and performance indices were composed more than 86% of data variations. Ranking based on the first factor indicated that south and north Khorasan and Kordestan conditions were unfavorable, while, Tehran and Mazandaran were in favorable conditions. The cluster analysis also placed the similar provinces in terms of health and social indicators in one group.

Conclusion*:* This study showed that the provinces with favorable socio-economic conditions were those with closest distance to the Capital and also those with more social and cultural exchanges due to the tourist industries. Since the socio-economic facilities are not distributed equally through the country, therefore, more equitable socio-economic attention and care to more deprived areas seems essential, which eventually would lead to the growth and development of health indicators in the country.

Keywords*:* Cluster Analysis, Statistical Factor Analysis, Vital Statistics, Rural Population

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Effects of hydroalchoholic extract of Securigera securidaca L. seed on acute, chronic and visceral pain in male albino mice

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***Introduction*:** Studies have shown that *Securigera securidaca L. seed* (SS) has anti-epileptic, anti-diabetic, anti-hypertensive, hypokalemic, hypoglysemic, diuretic and anti-convulsion effects. The present study was designed to test the antinoceceptive effects of hydro alcoholic extract of SS seed on acute, chronic, and visceral pain in mice.

Material and Methods: Young adult male albino mice (n =160) within the weight range of 25-30 g were randomly divided into 20 groups (n = 8). SS (100, 200, and 500 mg/kg) and vehicle (VEH) were administered (IP) 30 min before the pain evaluation tests. Acute and chronic pain was assessed by Hot Plate, Tail Flick, Formalin and Writhing (visceral pain) tests.

Results: Results indicated that SS had analgesic effects ($P < 0.05$) in comparison to the control group and the highest dose was more effective ($P < 0.001$).

Conclusion: The finding of this study showed that SS has inhibitory effects on pain in experimental animals.

Keywords: *Securigera Securidaca*, Acute Pain, Chronic Pain, Visceral Pain, Mice.

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Incidence of retinopathy of prematurity and some related factors in premature infants born at Amir –al- Momenin hospital in Semnan, Iran

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Introduction*:* Retinopathy of prematurity (ROP) is a retinal damage in preterm and low weight born infants, which can lead to blindness. Therefore, in this study we tried to investigate the probability of ROP incidence and some other related factors in preterm infants in the neonatal intensive care unit (NICU) of Amir-al-Momenin hospital in Semnan.

Materials and Methods: This study included 270 preterm infants with gestational age less than 37 weeks or birth weight less than 2000gr. The infants were treated with different concentrations of oxygen, and at 32-33 weeks of corrected gestational age or 4-6 weeks after birth were examined for ROP by using an indirect ophthalmoscope

Results: 55.2% infants were male. The lowest gestational age was 28 week and the highest was 36. 21.5% of premature infants were weighed less than 1500gr and only 2.6% of them received more than 60% oxygen concentration. Incidence of ROP in these neonates was 1.1%. The incidence of ROP in infants with birth weight up to 1500g was 5.2%. No ROP development was detected in infants above 1500g. The relationship between birth weight and the incidence of ROP was significant (P= 0.010). Also, the incidence of ROP in infants who received oxygen concentration up to 60% was 0.4%, and in those who received oxygen concentration more than 60% was 28.6%. The relationship between oxygen concentration and the incidence of ROP was significant (P=0.002). There was no significant relation between gender, gestational age and the incidence of ROP.

Conclusion: Our findings show that the incidence of ROP in this region is considerably lower than that in other regions of Iran and the world. The probable reasons might be suitable oxygen therapy in neonatal intensive care unit or death of infants at very low gestational age in this center. Nevertheless, the cause of this serious disease in neonates warrants further investigation and assessments.

Key words: Retinopathy of Prematurity, Infant Premature, Ophthalmoscopy**,** Oxygen Inhalation Therapy

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An epidemiological study of fatal road traffic accidents in Semnan province (Iran) in 2011

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Introduction*:* Road traffic accidents are responsible for 2.1% of the all-cause mortalities and 23% of injury-related deaths in the world. Iran has been recognized as one of the countries with the highest rate of road accidents and mortalities related to it. Considering the fact that mortality following traffic accidents is much higher in Semnan province in comparison to the country average, we aimed to investigate the epidemiology of these accidents in Semnan.

Materials and Methods*:* In this cross-sectional study, information related to traffic accident deaths in Semnan province (Iran) in 1391 was provided by the Legal Medicine Organization. First all the received data was controlled and then in the form of epidemiological variables were analyzed using the statistical software Stata 12. The relationship between some of the variables affecting the accident was evaluated by statistical tests.

Results*:* During the 1391,331 of death cases following traffic accidents were reported from Semnan Province. Crude mortality rate and age adjusted mortality rates were 52.29 and 52.9 per 100,000, respectively. 228 (68.88%) of these cases were male. The highest number of deaths, 134 (40/5%) occurred in the age group of 35-64 years old. The cause of death in 44.07% of cases was head injury. The highest percentage of deaths occurred in Shahrivar (September) and Tir (June). Almost 81.9% of deaths occurred in roads outside the cities.

Conclusion*:* Considering the higher rate of traffic accidents related deaths in this province in comparison to the country averages and the higher percentage of deaths in the roads outside the cities, also the fact that the cause of death was head injury in more than 40% of accidents, it is recommended that the authorities to adopt appropriate preventive programs to increase the safety of roads especially outside the cities to decrease the traffic accident mortality rate in that Province.

Keywords*:* Traffic Accidents, Semnan Province, Epidemiology, Mortality

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Vitamin D serum levels in nurses in Semnan educational hospitals and its association with depression

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Introduction*:* The incidence and exacerbation of psychiatric problems such as depression and anxiety resulting from vitamin D deficiency is an important issue that has been considered in recent studies. However, from the professional perspective, medical careers are more exposed to either of problems. This study was aimed to determine the serum levels of vitamin D and its association with depression in Semnan University hospitals nurses.

Materials and Methods*:* In this cross-sectional study the volunteered nurses employed at Semnan University of Medical Sciences hospitals were included in 2014. An inclusion criteria was their consent for participation and the exclusion criteria was a diagnosis to psychological disorder, including depression, in themselves or their first degree relatives. Serum vitamin D levels were measured by ELISA method and depression severity was evaluated by Beck Depression Inventory (BDI). The statistical analysis was done by chi-square and t tests.

Results*:* Nurses who fulfilled inclusion criteria were 182/256 employed nurses, including 138 female (75.8%) and 44 male (24.2%) with the mean age of 29.74 ± 7.919 years. 164 persons (90.1%) had bachelor's degree while the rest had Master's, all with the mean professional experience of 7.09 ± 6.628 years. Mean body mass index in nurses was 22.47 ±3.717 kg/m2 and 12 persons (6.6%) had a history of vitamin D supplement intake during the past six months. Mean of the serum vitamin D level was 13.10 ± 5.865 ng/ml. The mean depression score was 10.45 ± 6.404. There was a significant inverse correlation between serum vitamin D levels and depression score (r = -0.338, P = 0.001).

Conclusion*:* Vitamin D deficiency in the health care professions can be partially attributed to the work environment and night shifts. These persons are predisposed to mental health problems due to occupational stress. Some studies suggest a relationship between vitamin D deficiency and psychological depression. Our results showed that by the increment in the serum vitamin D levels, BDI score decreased, which indicated that the depression severity was minimized.

Keywords*:* Vitamin D Deficiency, Depression, Nurses, Semnan

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Measurement of surface dose in external radiotherapy of brain frontal lobe: A study on patient and phantom

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Introduction*:* Radiotherapy plays an important role in the treatment of most malignant and also benign primary CNS tumors. Radiotherapy affects both tumor cells and normal cells. The aim of this study was to determine the absorbed dose of radiation by the skin surfacing organs at risk (lens, parotid, thyroid and submandibular gland) during radiotherapy of tumors at the frontal lobe of the brain via direct measurement in patients and phantom.

Materials and methods*:* There are two conventional techniques for external radiotherapy of patients with tumors of the right frontal lobe. These techniques were used to estimate the amount of surface dose absorption by organs at risk (lens of eye, parotid, thyroid, submandibular glands). Technique 1 was performed for 10 patients who referred to Reza Radiation Oncology Center. Technique 1 is the radiation of frontal field with an extension to the lateral field portion. Technique I and 2, which included radiation of one frontal field along with a bilateral field were performed for a phantom model with an anthropomorphic head and neck constructed from natural human bone with paraffin wax and NaCl as surrounding soft tissues. The surface dose for each organ was measured using TLD chips.

Results*:* The measured radiation dose within all organs was within the safe limits in phantom and most patients, however, the surface dose were higher in patients in compare to phantom. In some patients, the right lens was not protected and therefore there would be some risk for cataracts. The findings provide estimation for probable complications along with frontal lobe radiotherapy.

Conclusion*:* Our findings showed that regarding these two techniques, technique I impose less harm to normal tissue, since the right lobe of brain is only irradiated. Besides, the higher values of surface dose in patients compared to phantom might be due to larger tumor field in patients, because the tumor dimensions in phantom was considered 4 cm, while in some patients it was larger.

Keywords*:* Brain neoplasms, Radiotherapy, Radiometry, Phantoms Imaging, Radiation Dosage, Organ at Risk

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A compartive study on the prevalence of cesarean section and macrosomia of gestational diabetes using the diagnostic criteria of the international association of the diabetes and pregnancy study groups and American diabetes association

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Introduction*:* Cesarean because macrosomia of fetus more happens in cases with gestational diabetes. There are different methods and outcomes for screening of gestational diabetes. In current study comparison between two accepted method of diagnosis of gestational diabetes, American diabetes association (ADA) and international association of diabetes in pregnancy study group (IADPSG) in occurrence of cesarean and macrosomia of fetus was preformed.

Materials and methods*:* All pregnant women between 24-28 weeks of gestation from April 2013 that were referred to Amir Hospital or private office of gynecologist were evaluated. They were evaluated by both ADA and IADPSG tests. If the gestational diabetes was confirmed they were followed until delivery and the prevalence of macrosomia and cesarean were surveyed.

Results*:* Among 236 cases the prevalence of gestational diabetes were 16(7%) and 20(8%) in IADPSG and ADA (P=0.001, kappa=0.219) and the rate of cesarean were 10(62.5%) and 11(55%) in IADPSG and ADA respectively. The prevalence of fetal macrosomia were 5(31.2%) and 2(10%) in IADPSG and ADA respectively.

Conclusion*:* The percent of gestational diabetes was more with IADPSG. However, two methods have agreement in diagnosis of diabetes but the agreement was not strong. The prevalence of cesarean and macrosomia was more in ADA. It seems that two methods are not equal in diagnosis and prediction of complications of gestational diabetes.

Keywords*:* Gestational Diabetes, Macrosomia Fetal, Cesarean Section

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Antibiotic resistance profile and capsular serotyping of *Streptococcus agalactiae* isolated from pregnant women between 35 to 37 weeks of pregnancy

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Introduction*: Streptococcus agalactiae* (streptococcus group B (GBS)) is the natural inhabitants of the gastrointestinal and genitourinary tract and frequently is isolated from female reproductive tract. It is the most common cause of bacterial sepsis, meningitis, pneumonia and severe diseases in the newborn.

Materials and Methods*:* Sixty *Streptococcus agalactiae* isolates were collected from 500 vaginal smear samples from pregnant women in their 35 to 37 weeks of pregnancy. The antibiotic susceptibility testing was performed by using disk diffusion method on Mueller Hinton agar medium with 5% sheep blood followed by capsular serotyping and PCR for 16Sr RNA, for final approval.

Results*:* Antibiotic susceptibility test showed the lowest resistance was belong to Penicillin, ampicillin, vancomycin (0%), cefazolin (3/33%) and ceftazidime (5%).While the highest resistance was found for erythromycin (28/33%), clindamycin (15%) and tetracycline (96/66%) antibiotics. The frequency of capsular serotypes was as following: III=45%, Ia=18/33%, II=16/66%, V=13/33% and Ib=5%.

Conclusion*:* Based on the current study, high raise in GBS isolates resistance to erythromycin and clindamycin in pregnant women (within the 35-37th weeks of pregnancy) is alarming and Markazi province demands for an expanded screening program in the ground of their GBS preventative plan.

Keywords*:* Streptococcus Agalactiae, Drug resistance Microbial, Streptococcal Infections / Prevention

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Design, construction, cloning and expression of beta Defensin and its effect on wound healing

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Introduction*:* Defensins are members of the largest family of antimicrobial peptides and due to their activity against bacteria, fungi, and viruses are very profitable as new antibiotics. The aim of this study was to design, synthesis, clone and expression of BNBD2 (Bovine Neutrophil Beta-Defensin2) gene to investigate the wound healing process.

Materials and Methods*:* In this study, according to the preferred codon in E. coli, the BNBD2 gene was optimized and synthesized. The BNBD2 gene was sub cloned in vector pET-32a (+). The BNBD2 protein expression was assessed; using Isopropyl-ß-D-thio-galactoside (IPTG) as an inducer and evaluating by SDS-PAGE. The potency of BNBD2 protein for healing was studied by creating a wound on a group of mice and treating them with BNBD2 protein in comparison with the control group.

Results*:* The results showed that BNBD2 gene was successfully cloned into pET32a (+) vector. The expression of protein was induced by IPTG. There was a significant reduction in wound area in the treatment group in compare to the control group.

Conclusiosn*:* Recombinant protein (BNBD2) was expressed successfully in prokaryotic system. This protein might be potentially beneficial for wound healing procedures in the future.

Keywords*:* Defensins, Wound Healing, Codon, Molecular Cloning, Gene Expression

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Prediction of gestational trophoblastic neoplasia based on trend of β-hCG during the first 21 days after molar pregnancy evacuation: an application of growth mixture model

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Introduction: Gestational trophoblastic neoplasia (GTN) is a broad spectrum of benign and malignant tumors derived from human placenta. Although they are rare in incidence, they have the potential to become rapidly fatal diseases. Therefore, predicting this disease in early stages is important. The aim of this study was to gain access to an appropriate marker for early prediction of GTN based on a trend of β-hCG in patients with molar pregnancy**.**

Materials and Methods: In the present study we analyzed the available data from the medical files of 201 patients with hydatidiform mole, according to their pathological results, who referred to the educational and health care centers affiliated to Shahid Beheshti University of Medical Sciences from 2003 to 2013. We used the growth mixture model for longitudinal data analysis in order to assess early prediction of GTN.

Results: The findings from the growth mixture model showed that there were two different patterns (classes) of trend in β-hCG logarithm in these women. So that, in the first pattern with a modest decreased slope in β-hCG logarithm, the post-molar GTN was observed in 91 percent of the women. While, in the second pattern with a steeper decreased slope in β-hCG logarithm, the post-molar GTN was not observed in the women under study.

Conclusion: The slope of trend in β-hCG logarithm (estimated from the growth mixture model) three weeks after molar pregnancy evacuation could be considered as an appropriate criterion for predicting the GTN.

Keywords: Gestational Trophoblastic Neoplasia, Molar Pregnancy, β-hCG, Growth Mixture Model.

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Combinational effects of Trachyspermum ammi and Zataria multiflora Boiss essential oils on some pathogenic food-borne bacteria

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Introduction: Application of natural compounds including essential oils (EOs) is an effective method to fight against the growth of bacterial pathogens in food. This study was conducted to determine the combinational effect of *Trachyspermum ammi* and *Zataria multiflora* Boiss essential oils on some pathogenic food-borne bacteria.

Materials and Methods: The effect of different concentrations of *Trachyspermum ammi* and *Zataria multiflora Boiss* was assessed individually and/or in combination, using microdilution broth method to determine the minimal inhibitory concentration (MIC) effect on the pathogenic food-borne bacteria including *E. coli O157: H7, Salmonella typhimurium, Listeria monocytogenes, Bacillus cereus,* and *Staphylococcus aureus*. Moreover, the effect of EOs was analyzed, individually or in combination, on *B.cereus* and *E.coli* growth curves.

Results: Combination of *Trachyspermum ammi* and *Zataria multiflora* Boiss essential oils showed a synergistic effect against *B. cereus* and *S. aureus* and additive effect on *E. coli*, *Salmonella typhimurium* and *Listeria monocytogenes.* The results of growth curve analysis of the combinational effects of these two EOs showed that they decreased the rate and increased the lag phase of bacterial growth, especially for *B.cereus*. This finding has an important value in food microbiology.

Conclusion: This study showed that *T. ammi*, and *Z. multiflora* Boiss essential oils were effective against bacterial growth, especially when they are used in combination. Based on this study it is suggested that their potential application to be considered in food industry.

Keywords: *Trachyspermum Ammi, Zataria Multiflora,* Oils, Volatile, Plant Extracts, Food Microbiology, Foodborne Diseases

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Effects of cyclic uniaxial strain on morphology of mesenchymal stem cells during differentiation to smooth muscle cells

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Introduction*:* Cells and tissues are mainly exposed to different mechanical stimuli, which are essential for their function. Blood vessels are subjected to circumferential straining induced by pulse pressure. The phenotype regulation and function of vascular smooth muscle cells depend on both chemical factors and their mechanical environment. Chemical and mechanical stem cell stimulations can contribute to their differentiation to functional target cells, including smooth muscle cells. This makes a great potential subject for cell therapy and tissue engineering. Here, we evaluated effects of short term uniaxial cyclic strain on morphology of rabbit adipose derived mesenchymal stem cells.

Materials and Methods*:* Using a custom made bioreactor, a 5% cyclic uniaxial strain with 1Hz frequency were applied on mesenchymal stem cells for 4, 8 and 24 hours. Smooth muscle specific gene expression was analyzed by Real Time PCR. Before and after experiments, cell images were taken and processed for morphological parameters evaluation.

Results*:* Cyclic strain caused cells to re-orient to the direction that cell body were experiencing minimal force. Two fold increases in smooth muscle gene expression was observed after 24 hour mechanical stimulation. Cyclic strain caused morphological alterations including reduction of cell shape index up to 41%, and elevation of aspect ratio up to 45% after 24 hours loading compared to control samples.

Conclusion*:* Cyclic strain caused significant elongation of mesenchymal stem cells close to contractile smooth muscle phenotype. This method can be applied in cardiovascular tissue engineering to provide functional smooth muscle cells.

Keywords*:* Cell Differentiation, Uniaxial Strain, Mesenchymal Stem Cells, Smooth Muscle Cells, Mechanobiology

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Acute effects of proprioception, massage and dynamic stretching warm up protocols on serum CK and LDH activity levels after one session of Plyometric training in male volleyball players

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Introduction*:* The purpose of the present study was to identify the acute effect of proprioception, massage and dynamic stretching warm up protocols on serum CK and LDH activity levels after one session of Plyometric training in men volleyball players.

Materials and methods*:* Thirty-two volleyball players (mean age: 21/20 ± 1/73 years and body mass index: 22/11 ± 2/53 kg / m²) were randomly assigned to 4 groups of; proprioception, massage, dynamic stretching and control groups. Experimental groups (after 15 minutes of specified warming-up) and control group performed 30 minutes plyometric training. Blood samples were taken before, immediately after and then 24 and 48 h after exercise.

Results*:* Immediately after plyometric training, the serum level of CK activity in massage, dynamic stretching and control groups were significantly increased ($P<0.05$). After 48 hours, the serum level of CK activity reached to the basal level, excluding the massage group which was significantly higher than basal level ($P=0.0001$). No significant change was found in the level of LDH activity in any group ($P>0.05$).

Discussion*:* It seems that in volleyball the use of proprioceptive warm up training is more effective for prevention of muscle injuries in comparison to other warming-up methods.

Keywords*:* Plyometric Exercise, Proprioception, Massage, Muscle Stretching Exercises, Myalgia, Volleyball

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Effects of 8 week regular walking on the neonate in nulliparous women

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Introduction*:* Appropriate daily physical activity is increasingly recommended during pregnancy, since a successful pregnancy and delivery are among the main pillars of health care system. Accordingly, this study aimed to determine the effects of 8 weeks of regular walking on neonatal outcome of nulliparous women.

Materials and Methods*:* This field trial was conducted on 80 healthy non-athletic, 20 to 35 years old nulliparous women, who were housewives, singleton and in their 28th of gestational week and living in Damghan. Following a repeating sampling method, participants were randomly divided into intervention and control groups. The intervention group performed 8 weeks of 30-minute walks, 3 times per week, at their own pace, while the control group was only followed up.

Results*:* There were no significant differences in weight, height, and head circumference of infants after birth between the two groups, but significant improvements were observed in the one-minute (P=0.008) and five-minute (P=0.01) Apgar scores. Also, the meconium passage was 4 times less than control (P=0.034).

Conclusion*:* This study showed that 8 weeks of regular walking caused no growth reduction in the intervention group infants, while led to higher one-minute and five-minute Apgar scores and lower meconium discharge, thus the infants were placed in a better condition. Therefore, regular walking at one's own pace during pregnancy is generally recommended to healthy pregnant women, because of its favorable effects on neonatal outcomes.

Keywords*:* walking, Pregnancy Outcome, Infant Newborn, Pregnancy

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Effects of forced exercise on neuropathic pain induced by chronic constriction injury of sciatic nerve in male rat

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Introduction*:* Central and peripheral nerve injuries may lead to chronic neuropathic pain in addition to immobility in many injured persons. Exercise as a non-medical procedure has beneficial effects on the well being of individuals in normal and diseased state. Therefore, in the current study we aimed to measure the alleviating effect of physical exercise on neuropathic pain.

Materials and Methods*:* Male wistar rats weighting 200±20 gram were divided into 5 groups: Intact, sham, neuropathic, exercise before neuropathy, and exercise after neuropathy. After anesthesia, rats underwent chronic constriction injury (CCI) procedure to induce neuropathic injury on the left sciatic nerve. After surgery animals were transferred to individual cages and covered with a towel to prevent hypothermia until regaining consciousness. Mechanical allodynia and thermal hyperalgesia were detected using von Frey Filament and Plantar test, respectively.

Results*:* Mechanical and thermal withdrawal response thresholds were reduced significantly ($P<0.05$) in the CCI group than sham and intact groups. On the other hand, there was a significant increase in the mechanical ($P<0.01$) and thermal ($P<0.05$) allodynia withdrawal response thresholds in post neuropathic exercise groups than the CCI group.

Conclusion*:* Physical activity following certain models of neuropathic pain may lead to significant reduction in mechanical and thermal allonynia.

Keywords*:* Constriction, Exercise, Hyperalgesia, Neuralgia, Rats

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Success in varicocelectomy and its relation to some important clinical and laboratory factors

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Introduction*:* Varicocelectomy is a common surgical treatment for infertility in men .Due to the fact that infertility treatment is a time-consuming and expensive procedure; this study was aimed to determine the factors associated with the successful surgical procedure, in order to make a better prediction of the outcome of treatment.

Materials and Methods*:* In a cross-sectional descriptive and analytic study, the volunteered patients, whom underwent subinguinal varicocelectomy in Semnan Amiralmomenin hospital between 1387 and 1391, were involved in the study. Patient's information included age, testicular volume, varicocele grade, sperm quality indicators (motility, morphology, count) and the number of the ligated veins were extracted from the medical records. Success in a period of 4 to 12 months after surgery were evaluated according to improved sperm quality (15% improvement in at least two of the sperm parameters) and the occurrence of pregnancy in married patients were followed up by post-surgery semen analysis and phone contacts.

Results*:* Patients (n=134, 116 married and 18 single) with a mean age of 29.49 (± 6.61) participated in the study. The average volume of the testis was 20.19 ± 1.94 ml and the average number of ligated veins was 4.05 ± 1.15. Patients (25.4%) had grade 1 and 74.6% had grade 2 and 3 varicocele. The average motility, morphology and sperm count before surgery were 33.58 +_16.81, 31.95+_15.65 and 35.25+_33.90, respectively and these indexes after surgery were 39.69+_15.94, 34.76+_14.66 and 46.04+_30.72, respectively. The probability of occurrence of pregnancy as well as improvement in sperm quality in patients was 52.2% and 74%, respectively. The chance for improvement in the quality of sperm was significantly associated with higher degrees of varicocele (P =0.004), lesser the motility (P =0.008) and worse the morphology (P =0.013) of the sperm before surgery. Also the occurrence of pregnancy was significantly associated with the lower age (P =0.003), higher testicular volume (P =0.03) and higher grade of varicocele (P =0.004).

Conclusion*:* This study showed that patients who underwent varicocelectomy, those who were younger , with higher grade of varicocele and testicular volume as well as those who had worse sperm quality before surgery, in terms of motility and morphology, gain more benefit from varicocelectomy.

Keywords*:* Varicocele, Infertility, Male, Surgery, Spermatozoma

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Survey on six microbial quality indices inchlorinated swimming pools and Influence of pool depth and swimmers gender on it (case study)

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Background and Aim: Swimming pool can transfer many pathogens. Chlorine concentration and swimmers gender are the most effectors on the quality of pool water. The scope of this study was to determine the effect of chlorination, pool depth and swimmer's gender on the six microbial qualification indices.

Materials and Methods: In this descriptive–analytical study which was performed in 2013, thirty six water samples were taken from the different depths of pools (Pools separated by gender) and the chlorination, turbidity and total Coliform, E.Coli, Heterotrophic bacteria, StreptococcusFeacalis, Staphylococcus Aureus and Pseudomonas Aeroginosa were measured.

Results: The total average of residual chlorine in the men's and women's pools were 1.47 and 2.47 mg/l respectively, which matched with the standard levels in the country, while the mean of E.Coli, Heterotrophic Plate count and Pseudomonas Aeroginosa concentrations in the both pools were higher than Iranian standards and were more concentrated in the women's pools than the men's. Also, the turbidity was 1.34 and 1.47 NTU respectively, which was higher than the Iranian standards.

Conclusion: In spite of the higher concentration of residual chlorine in the women's pool, the average concentrations of microbial indices in the women's pool were higher than the men's. This difference may be related to the swimmers gender. The observed differences in microbial concentrations in different depths of each of the pools and also between men's and women's pools were not significant.

Key Words: Swimming Pools, Escherichia Coli, Heterotrophic Bacteria, Streptococcus, Staphylococcus Aureus, Pseudomonas Aeruginosa

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Comparison of working memory in normal and dyslexia children in Semnan primary schools

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Introduction*:* Working memory is the capacity to store and control information for a short period of time. This memory is closely related to reading and other academic skills such as spelling, comprehension and mathematics. This study aimed to compare working memory in normal versus dyslexic children.

Materials and methods*:* This was a descriptive-analytic study. Dyslexic group included 30 children randomly selected from the *Learning Disability Center of Semnan Department of Education*. The control group consisted of 60 primary school students without any academic failure and intellectual problems. Phonological working memories such as; Word Recall, Digits Recall and Non-word Repetition were used for assessments.

Results*:* The experimental and control groups were not different in two factors of age (P=0.880) and sex (P=0.552). Control group scores in word recall, digits recall (forward), and non-word repetition tasks were highly dominated (P <0.001) over dyslexic children.

Conclusion*:* The findings showed that children with dyslexia have lower performance in subtests of phonological working memory. This study indicates the need to raise the awareness of teachers and speech and language therapists to plan designing and implementing educational and interventional programs based on activities related to the working memory for children with dyslexia and other learning disabilities.

Keywords*:* Working Memory, Dyslexia, Child

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Effects of neurofeedback training on sustain attention and planning in students with attention deficit disorder

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Introduction*:* Neurofeedback training is a new therapeutic method with the ability to improve the sustain attention and planning in students with attention deficit disorder through amending electroencephalographic abnormalities. The aim of this study was to investigate the effects of neurofeedback training on sustain attention and planning ability in students with attention deficit disorder.

Materials and Methods*:* This was a semi-experimental study with a pre-test and post-test design along with a control group. The statistical population included the elementary school students with attention deficit disorder who referred to Gharchak city counseling center in 2013. Totally, 30 students were selected through available sampling method and randomly assigned into two groups. The experimental group received 12 sessions of 60 minutes neurofeedback training. The computer-based test of *Continuous Performance Test* and computer-based test of *Tower of London* were used to measure the sustain attention and planning, respectively.

Results*:* Our findings showed that the neurofeedback training led to a significant increase in sustain attention and planning ability in students with attention deficit disorder ($P<0.05$).

Conclusion*:* Our results showed that neurofeedback training method can improve sustain attention and planning in students with attention deficit disorder. Therefore, it is highly suggested that counselors and therapists to use this method for treating students with attention deficit disorder.

Keywords*:* Neurofeedback, Attention, Attention Deficit Disorder, Video Games

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Association between estrogen and progesterone receptors gene polymorphisms with prostate cancer

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Introduction*:* Prostate cancer, the most prevalent cancer among men, is a steroid hormone receptor-dependent cancer. Mutations in estrogen receptors (ERα and ERβ) and progesterone receptor (PR) may cause steroid hormones to be involved as initiators or promoters in prostate carcinogenesis. The purpose of this study was to determine the association and frequency of incidence of the polymorphisms in the intron1 of ERα, exon 5 of ERβ and intron 7 of PR in the risk of prostate cancer.

Materials and methods*:* Prostate cancer patients admitted to the Department of Urology, Postgraduate Institute of Medical Science and Research (PGIMER), Chandigarh, India (n=100) and an equal number of matching controls visiting same center underwent PCR-RFLP analysis for ERs and PR genes.

Results*:* In the present case -control study, the results show that those patients with the genotype ERα (-/-) had significantly higher risk for prostate cancer (OR, 2.70; 95% CI, 1.08–6.70, P= 0.03). But There was no association between the Rr genotype of ERβ (OR, 1.65; 95% CI, 0.52–5.23, P=0.21) and A1/A2 genotype of PR (OR, 1.90; 95% CI, 0.70-5.15; P=0.204) with the risk for prostate cancer.

Conclusion*:* It seems that in the studied population there was an increased risk of prostate cancer among patients carrying ERα (-/-), but not with other genotypes of ERβ and PR genes.

Keywords*:* Estrogen Receptor, Progesterone Receptor, Gene Polymorphism, Prostate Cancer

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Relationship between phonemic awareness and naming speed in second and third grade primary school students

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***Introduction**:* Reviewing the previous studies on the relationship between phonological awareness and naming speed are controversial. One of the reasons for this contradiction is the language of the studies. The purpose of this study was to investigate the relationship between phonological awareness and naming speed in the Farsi speaking students.

***Materials and Methods**:* In this cross-sectional study, students in second grade and third grade (each, n=15) of public elementary schools in Tehran city (Iran) were involved. The two groups were given rapid automatized naming and phonological awareness tests. Data analysis for two groups was performed and the correlation between task scores in two groups was measured.

***Results**:* The performance of two groups was significantly different in sub-tests of naming and initial phoneme deletion, medial phoneme deletion (P=0.001) and naming and final phoneme deletion (P=0.002). There was no significant difference between two groups in sub-tests of words recognition with the same final phoneme and phoneme segmentation. The time for naming letters (P=0.001) and time for naming numbers (P=0.019) were markedly short in the third grade students. There was no significant correlation between rapid naming of letters, numbers, objects and colors with phonological awareness variables in the second and third grade students except that in the third grade students a significant correlation between rapid naming of letters and words recognition with the same final phoneme was observed (P< 0.05).

***Conclusion**:* The lack of a significant correlation between phonological awareness and naming speed can be indicated that naming speed is independent of phonological awareness in Farsi.

***Keywords**:* Linguistics, Awareness, Iran, Students

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Effects of melatonin on anxiety- like behaviors induced by post–traumatic stress disorder in rat

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Introduction*:* Post traumatic stress disorder (PTSD) is an anxiety disorder. This study was aimed to evaluate the effect of multiple injections of melatonin on anxiety like behaviors induced by PTSD.

Materials and methods*:* PTSD induced in 60 male wistar rats, by combining the shock and single-prolonged stress method (S&SPS). Animals received electric shock (1 mA, 2s) for 5 days, and then on the day 6 they underwent three stages of SPS (restrained for 2 hours, forced swimming for 20 minutes and anesthetized by diethyl ether for 15 minutes). Seven days after PTSD induction, elevated plus maze (EPM) and open field tests were performed to measure anxiety profile. Animals received multiple subcutaneous injections of melatonin (5, 10, 15 mg/kg) or saline, within the 7 days after PTSD.

Results*:* The control (saline) and treated (melatonin) groups showed significant differences in the percentage of time spent in open arms of the EPM. Melatonin, at dose of 15mg/kg, significantly increased the time spent in open arms of the EPM than the corresponding control group. Animals who received 10mg/kg melatonin showed a significant increase in crossing behavior in open field test than the corresponding control group.

Conclusion*:* Our study showed that melatonin is able to reduce PTSD-induced anxiety-like behaviors in rats.

Keywords*:* Anxiety, Melatonin, Post-Traumatic Stress Disorder, Rats

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Is herpes zoster a risk factor for subsequent malignancy?

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Introduction*:* The relation between herpes zoster (shingles) and malignancy has been studied for many years. It has been well established that the herpes zoster occurs more frequently in patients with known malignancy but, whether that previous herpes zoster is associated with subsequent risk of malignancy is still controversial and so far studies have led to conflicting results. Therefore we designed this study in order to investigate a possible relationship between the previous shingles and subsequent risk of malignancies.

Materials and Methods*:* This case-control study consisted of 268 adult patients (≥ 18 years) with diagnosis of malignancy (case group), who referred to Fatemieh hospital in Semnan, Iran. Oncology diagnosis of malignancy was based on medical history, clinical findings, and laboratory and pathology results. Adult patients without history of malignancy (n=268) were selected as control group. In both groups, age, gender and history information about shingles, type of malignancy and the interval between occurrence of shingles and cancer diagnosis were recorded in a check list. Patients with uncertain shingles history excluded from the study.

Results*:* The age and gender were similar in both control and case groups ($p>0.05$). History of herpes zoster was positive in 4.9 %(13 patients) of case group and in 10.4% (28 patients) of the control group. The difference between the positive cases in two groups was significant (OR=0.440, 95% CI: 0.22-0.86, $p=0.017$). The relation between shingles history and malignancy was not significant between genders. Also, the association between shingles history and malignancy in patients with 60 years of age or over was not significant, but association between shingles history and malignancy in patients less than 60 years of age was significant (OR=0.19, 95% CI:0.05- 0.67, $p=0.010$).

Conclusion*:* Our findings showed that herpes zoster might not be a risk factor for subsequent malignancy, though in contrast, it may produce a protective effect against the occurrence of malignancy. Further studies with larger samples at the cellular and immunological levels are recommended to more clear the relation between zoster and later malignancies.

Keywords*:* Herpes Zoster, Malignancy, Risk Factors, Cancer

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Effects of eccentric and concentric exercises on postural sway in type 2 diabetic patients

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Introduction*:* Around 7% of world population is suffering from diabetes and its widespread complications. There are several studies discussing the beneficial effects of aerobic and resistance exercises on postural sway in type 2 diabetic patients. However, the effects of eccentric exercise on displacement and speed of displacement the center of pressure in these patients have not been studied yet. This study was designed to compare the effect of eccentric and concentric exercises on kinetic indices in type 2 diabetic patients.

Materials and Methods*:* Patients with type 2 diabetes (n = 28) with a mean of 51.79 years of age (male and female), who referred to the neuromuscular rehabilitation research center of Semnan University of Medical Science, were assigned randomly in either of two experimental eccentric or concentric groups. Before and after intervention, displacement and speed of displacement the center of pressure in anteroposterior and mediolateral directions were measured.

Results*:* Eccentric exercise training significantly reduced displacement the center of pressure in anteroposterior (P = 0.016) and mediolateral (P = 0.005) directions and speed of displacement in anteroposterior (P = 0.020) and mediolateral (P = 0.037) directions, in compare to concentric exercise.

Conclusion*:* Our findings suggest that eccentric exercise is more effective than concentric exercise in improving the postural sway in type 2 diabetic patients.

Keywords*:* Type 2 Diabetes Mellitus, Exercise, Exercise Therapy, Postural Balance

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Protective effect of hydro-alcoholic extract of Iranian propolis on the structure of neonatal rat ovary following stress

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Introduction*:* Stress has various effects on body systems, including the nervous, endocrine, immune, reproductive and other systems, during neonatal life. The aim of this study was to investigate the effect of hydro-alcoholic extract of propolis on structural and evolutional changes in the neonatal rat ovary following weaning stress.

Materials and Methods*:* female rats aged15 days (n = 48), weighing 15-20 g, were divided randomly into six groups of eight. Experiments started from the day 15 - 21 after birth. First group (negative control) included 21 days infants without any intervention, the second group (positive control) included infants received (0.1 ml) of saline solution daily and were not weaned all over the experiment, the third group (stress group) included infants who were separated from their mothers only six hours per day. The fourth, fifth and sixth groups of rats received daily weaning stress in addition to 50, 100 and 200 mg/kg of Propolis extract. 24 hours after the last injection, serum corticosterone levels were measured. The ovaries were removed and fixed. Sections prepared (5 micrometer) and stained by the methods of H&E and PAS. Histomorphometry was performed using a light microscope equipped with image analysis software.

Results*:* Stress increased the newborn blood serum corticosterone levels and decreased the number of ovarian follicles and oocytes and increased the number of atretic ovarian follicles. However, hydro-alcoholic extract of propolis decreased the corticosterone levels in neonatal rat after stress, increased the number of ovarian follicles and oocytes and decreased the number of atretic ovarian follicles in neonatal rat following stress.

Conclusion*:* This study showed that hydro- alcoholic extract of propolis strongly prevents structural changes in the newborn rat ovaries after stress.

Keywords*:* Propolis, Stress, Ovary, Corticosterone, Infant, Rats

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