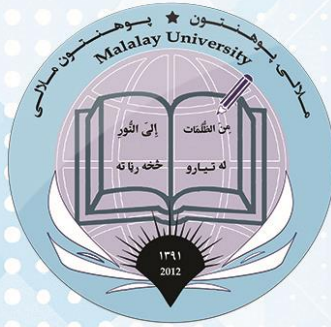




ملالی پوهنتون

ملالی

علمي - څېړنيزه مجله

غوايي، ۱۴۰۵ ل. اوله گڼه، پر له پسې دريمه گڼه



بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

مالی

علمی - خبرنیزه مجله

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د چاپ حقوق ئې محفوظ دي.

د پښتو او دري مقالو فهرست

- 1..... د اکني ولکاریس په متوسط او وخیم مریضانو کښي د ایزوتریتونین او موضعي 2% کلینډا مایسین مؤثریت او مصنویت
- پوهنیار دوکتور عبدالرزاق حرمان
ډاکټر محمد اسمعیل سادات
- 10..... د اسلامي شریعت له نظره د انساني اعضاوو د انتقال او پیوند حکم
- مولوي ذبیح الله صابر
مولوي سمیع الله صابر
- 26..... بررسی ارتباط امراض جوف دهان با امراض سیستمیک و اهمیت آن
- ډاکتر شیرچمن نبوی

د انگلیسي مقالو فهرست

- Clinical and Demographic Profile of Myocardial Infarction in Young Adults in Kandahar, Afghanistan.....1**
- Abdul Matin Rahimi, Mohammad Yunas Sulaiman, Mohammad Qais Baryali, and...
- Prevalence and Associated Factors of Acute Malnutrition Among Under-5 Children Attending Comprehensive Health Centers in Kandahar City, Afghanistan.....19**
- Mohammad Younas Sulaiman, Mohammad Ismail Sadat, and...
- Proportion and Associated Risk Factors of Iron Deficiency Anemia Among Under-5 Anemic Children in 2022, Mirwais Regional Hospital, Kandahar, Afghanistan.....36**
- Hayatullah Habibi, Mohammad Nazir Khan, Nik Mohammad Zafari, and...
- Stress Levels among Medical Students at Kandahar University & Malalay University.....53**
- Ahmad Shah Omar
- Effective Teaching Methods of Medical Education in Kandahar, Afghanistan.....73**
- Mohammad Younas Sulaiman

د اکني ولگاریس په متوسط او وخیم مریضانو کېښي د ایزوتریتونین او موضعي 2% کلینډا مایسین مؤثریت او مصنویت

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لنډیز

ځوانۍ دانې (Acne vulgaris) د پیلو سبیشس واحدونو التهابي ناروغي ده، چې په ځوانانو کې ډیرې زیاتې پېښې لري. اکني ولگاریس یا ځوانۍ دانې عموماً پر مخ، غاړه، د ملا پر لورې برخه او ځیګر باندې وي. اکني ولگاریس د ځوانانو پر فزیکي او روحي حالت باندې ډېر تاثیر اچوي، چې پر وخت تداوي ئې کولای سي په ځوانانو کې د ځوانۍ دانو د اختلاطاتو مخنیوی وکړي. ددې څېړنې موخه داده، چې په متوسطو او وخیمو زوردانو کېښي د ایزوتریتونین جمع موضعي 2% کلینډا مایسین مصنویت او مؤثریت پرتله سي. دغه څېړنه د خلاص کلینیکي ټرایل له مخې ترسره سوې ده، چې پکښي د زوردانو 400 داسي نارینه ناروغان، چې عمرونه ئې تر 15 کلنۍ لوړ ول او داسي ښځینه ناروغانې، چې عمرونه ئې تر 15 کلنۍ لوړ ول خو واده ئې نه وو کړي او یا هم راتلونکي درې کاله ئې د اولاد د پیدا کولو پلان نه درلود داخل سوي دي. 400 ناروغان د لس میلی ګرام ایزوتریتونین تر څنګ 2% موضعي کلینډا مایسین په وسیله د 12 اونيو له پاره تر درملنې لاندې نیول سوي، چې په هرو څلورو اونيو کې د تداوي د مؤثریت او مصنویت له پاره راغونښتل کېدل. 90 سلنه ناروغانو د شونډو د وچوالي څخه شکایت درلود. په 30 سلنه ناروغانو کېښي یې د پزي وچوالي هم پېښ کړې وو بغیر له دغو جانبې عوارضو ناروغانو دواړه درمل په ښه ډول تحمل کول. ایزوتریتونین جمع 2% کلینډا مایسین ډېر ښه مؤثریت په 65% (260 ناروغانو) کېښي، ښه مؤثریت په 20% (80 ناروغانو) کېښي او په پاتې 15% (60 ناروغانو) کېښي یې درملنې مثبت مؤثریت نه درلود. د څېړنې پایله دا ښيي، چې د 12 اونيو په جریان کې دواړو درملو تاثیر درلود. ایزوتریتونین په هغو ناروغانو کې ډیر تاثیر کوي چې التهابي نه وي او یا هم التهاب ئې کم وو، حال دا چې ایزو ټریټونین جمع موضعي کلینډامایسین بیا په هغو ناروغان کې ډیر اثر درلود چې التهابي زوردانې ئې درلودې.

کلیدي کليمې: التهاب، ځوانۍ دانې، ایزوتریتونین، کلینډا مایسین، پیلو سبیشس واحد

پېژندنه

ځوانۍ دانې په جلدي امراضو کې ډېره عامه ناروغي ده، چې د نړۍ د نفوس تقریباً 9.4٪ انسانان ځنې کپړي او یوازې د امریکا په متحده ایالاتو کې یې اقتصادي مصارف تر درې میلیارډه دالرو اوږي. که څه هم زور داني د انسانانو په عمومي صحت باندې کوم اثر نه لري خو د اکني (Acne) تیونه د انسان پر ځان باور کموي او کوښښ کوي، چې د ټولنې څخه ځان لیري وساتي او په محفلونو او مجلسونو کېښي گډون ونه کړي، چې دا د روحي خفگان سبب ګرځي. همدارنګه، هغه کسان چې ځوانۍ داني لري نسبت هغو کسانو ته چې ځوانۍ داني نه لري د وظیفې په پیدا کولو کې کم چانس لري (Hazarika, 2019).

ځوانۍ دانې عموماً پر مخ، ملا او ځیگر باندې وي، چې دوه ډوله لري، التهابي او کومیدونل (Comedonal) یا غیر التهابي هم ورته ویل کېږي. د اکني ولگاریس په ځانګړتیاوو کېښي کومیدونونه، پاپولونه (Papules)، پسچیلونه (Pustules)، نوډیولونه (Nodules) او کاذب سیستونه (Pseudocysts) راځي. د اکني ولگاریس په درملنه کې د موضعي انټیبیوټیک، سیسټمیک انټیبیوټیک درمل، موضعي ریتینوید (Topical retinoid)، ایزوتریتونین اورل، هورموني تداوي، لکه د امیدواری ضد درمل، بنزایل پر اکساید (Benzoyl Peroxide)، ازه لیک اسید (Azelaic Acid) او داسې نور درمل شامل دي (Fallah & Rademaker 2021).

ایزوتریتونین چې د ریتینوید ګروپ له ډلې څه دی د سبیشس غدو د افرازاتو مخنیوي کوي چې هم په التهابي زور دانو کېښي او هم په کومیدونل اکني کېښي خاص رول لري. جانبي عوارض یې د شونډو او پزې وچوالي دي. سربېره پر دې، هم مصؤن او د ناروغ له خوا ښه تحمل کیدونکي درمل دي. کلیندامایسین، چې د لینکوزامایډ (Lincosamide) ګروپ انټیبیوټیک دي د باکټریا پروتین جوړونه محدودوي د پروپینو باکټریم اکنيس (Propionibacterium acnes) مخنیوی کوي. همدارنګه د پوستکي سطحي شحمیات کموي، چې د اکني په درملنه کې خاص رول لري (Tobiasz et al., 2022).

دا چې ایزوتریتونین ځینې جانبي عوارض لري او مریض ته توصیه یې باید په خاصو شرایطو کې وسي او همدارنګه کلیندا مایسین چې انټیبیوټیک درمل دي او د مقاومه باکټریاوو په ډېریدو کې رول لري او په کندهار کېښي د انټیبیوټیک درملو سره مقاومت ډېر دی نو ددې دواړو درملو مصؤنیت او مؤثریت باید وڅېړل سي، چې متاسفانه تر اوسه پوري زموږ په ټولنه کېښي په دې اړه څېړنه نه ده سوي. د دې څېړنې موخه همدا ده، چې ددې درملو مؤثریت او مصؤنیت زموږ په ټولنه کې د هغو اشخاصو په درملنه کې معلوم کړي چې د ځوانۍ دانو په ناروغۍ اخته دي.

ځینو څېړنو ښوولې ده، چې په هغو ځوانۍ دانو ناروغیو کې چې شدت یې متوسط او یا ډېر وي د انټي بیوټیک او موضعي درملو په واسطه نه رغېږي، فمي ایزوتریتونین په پراخه کچه کارېږي. دې څېړنې دا هم ښوولې ده، چې د ایزوتریتونین او کمباین انټي بیوټیک او موضعي تداوي د لېږنونو (Lesions) په کومولو کې کوم خاص توپیر نسته، که څه هم د ډاکترانو له نظره د مریضۍ په شدت کې د پام وړ کموالی راغلی دی (Costa et al., 2018). داسي شواهد سته چې فمي ایزوتریتونین په نوډلر اکني لیژن (Nodular acne lesion) تر فلاسبو (Placebo) ډېر تاثیر لري ځکه د یوې میاشتي تداوي په جریان کې 32٪ د لیژنونو رغېدنه پکښي رامینځ ته سوې وه (Purdy & DeBerker, 2008).

د څېړنې ستونزه

اکنې ولگاریس په ځوانانو کښې ډېره عامه ناروغي او عموماً ډاکټران د التهابي اکنې ولگاریس د تداوي له پاره اورل انتیبیوتیک (د خولې له لاري خوړل کېدونکي) درمل کاروي. دا چې په نړۍ کې د انتیبیوتیک (د مکروب ضد) درملو سره مقاومت ورځ په ورځ ډېرېږي او خصوصاً په کندهار ولایت کې، چې د انتیبیوتیک درملو سره د مقاومت مرکز دی، باید کونښن سې د داسې درملو استفاده زیاته سې چې هم ناروغ تداوي کړي او هم اورل انتیبیوتیک نه وي نو ددې له پاره دا څېړنه په لاره اچول سوې ده ترڅو معلومه کړي چې موضوعي درمل څومره مؤثر تمامېږي او جانبي عوارض ئې څومره کم وي.

د څېړنې موخه

په متوسط او وځیمو زوردانو کښې د ایزوتریتونین جمع موضعي 2% کلینډا مایسین مصونیت او مؤثریت مقایسه کول تر څو معلوم کړل سې چې په متوسط او وځیم ناروغانو کښې کومه تداوي بهترینه نتیجه ورکوي، په خاص ډول په کندهار ښار کښې تر څو یوه داسې تگلاره موجوده کړي چې هم د اورل انتیبیوتیک درملو استعمال کم سوي وي او هم مثبتې نتیجه تر لاسه سوې وي.

د څېړنې پوښتنه

د اکنې ولگاریس له پاره عموماً بنزایل پر اکساید کریم کارول کېږي، ایا بل انتخاب سته؟ کولای سو 2% موضعي کلینډا مایسین د لس ملي گرامه ایزوتریتونین سره یو ځای کړو او خپله مثبتې نتیجه تر لاسه کړو؟

د څېړنې ارزښت

ددې څېړنې ارزښت په دې کې دی چې موږ وکولای سو د کندهار په کچه لږ تر لږه یوه څېړنه ولرو، چې د ذکر سوو دوو درملو مؤثریت او مصونیت معلوم کړي او د دې څېړنې له مخې به په راتلونکي کې داسې نورې څېړنې سې تر څو موږ وکولای سو د اورل انتیبیوتیک درملو استفاده په اکنې ولگاریس کښې ډېره کمه کړو. هر څومره چې موږ وکولای سو د عادي امراضو له پاره د انتیبیوتیک درملو کارول کم کړو په هماغه اندازه به مو په ټولنه کې د انتیبیوتیک درملو سره مقاومت کم کړی وي.

مواد او میتود

دغه څېړنه خلاص کلینیکي ټرایل دی، چې د کندهار ښار په الفرهاد خصوصي روغتون کښې د 2022 کال د اکتوبر میاشتې څه تر 2024 کال تر اکتوبر میاشتې ترسره سوې ده. لومړی تر څېړنې لاندې ناروغانو ته خبر ورکړل سوی او د دوی رضایت پانې په لاسلیک سوي او وروسته د ناروغانو څخه مکمله کلینیکي تاریخچه اخیستل سوې ده. په مجموعي ډول په دغه دوران کښې الفرهاد روغتون ته 760 ناروغانو چې تشخیص ئې اکنې وو مراجعه وکړل. یاد ناروغان پر درو ډلو ووېشل سول، (خفیف، متوسط او وځیم اکنې ناروغان). خفیف ناروغان د څېړنې تگلاري ته په کتو د څېړنې څخه و ایستل سول او یوازې متوسط او وځیم ناروغان چې عمرونه ئې تر 15 کالو لوړ ول، نارینه او نا واده سوي ښځې یا هم هغه ښځې چې د راتلونکو درو کلونو له پاره ئې د اولاد پیداکولو پلان نه درلود په څېړنه کې شامل سول. خفیف ناروغان هغه ول، چې

یوازي ئي کومیدونونه درلودل او د پیپلونو تعداد ئي ډېر کم وو. متوسط ناروغان هغه ول چي بسچیلومه ئي درلودل او په ځینو ساحو کي ئي نوډیلونه درلودل. وخیم ناروغان هغه ول چي د بسچیلونو او نوډیلونو سربېره ئي سیستمونه درلودل او شدید درد ئي هم درلود.

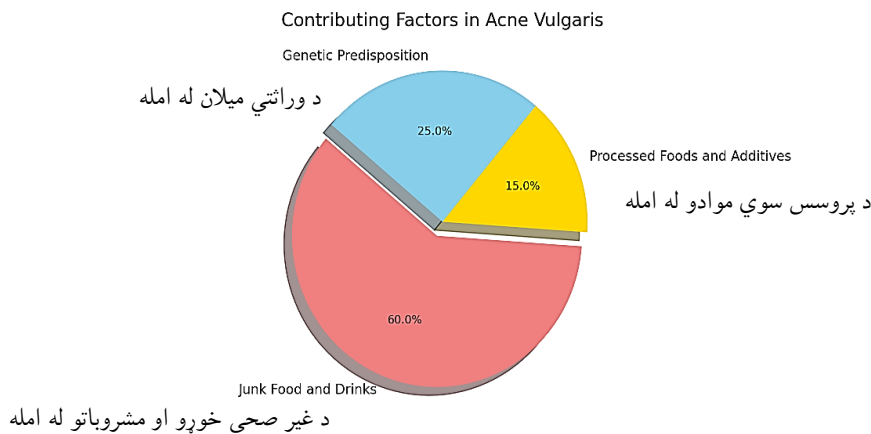
هغه ناروغان چي په څېړنه کي د گډون او نه گډون د معیارونو له مخي چمتو ول په ناکاکی یا رنډم ډول وټاکل سول او په دوو گروپونو وویشل سول. په اول گروپ کي دوه سوه تنو ناروغانو ته ایزوتریتونین لس ملي گرامه هره ورځ یو ټابلیټ ورکول کېدی او د دوهم گروپ ناروغانو د لس ملي گرامه ایزوتریتونین تر څنگ 2% موضعي کلیندا مایسین هم کارول. هغوی دواړه درمل یو ځل د شپي له طرفه استعمالول. ناروغان د دولسو اونیو له پاره تعقیب سول. د دې له پاره چي د درملو مؤثریت د ځوانۍ دانې د پاکوالي او د له منځه تگ له رویه معلوم کړي، د یو پروتوکول پر بنسټ په څلورو کټگوري وویشل سول. لومړي گروپ د اکنو د اندفاعاتو پاکوالي او پوره له منځه تللي ئي د 80 څه تر 90 فیصده ول. دوهمه کټگوري چي د اکنو اندفاعات ئي د 50 څه تر 80 فیصده له منځه تللي ول. دریمه کټگوري چي د اکنو اندفاعات ئي د 30 څه تر 50 فیصده له منځه تللي ول او څلورمه کټگوري چي د اکنو اندفاعات ئي تر 30 سلنه کم له منځه تللي ول. په دغه څېړنه کېښي جنس، د بسچیلونو ډیوریشن، د درد موجودیت او جانيي عوارض د پایلو متغیرونه ول او دواړه گروپونه پورتنیو متغیرونو ته په کتو سره یو له بل سره مقایسه سول.

نتایج

په څېړنه کي ټول 480 ناروغان راجسټر سوي ول، چي له جملې څخه ئي یوازي 400 ناروغانو څېړنه بشپړه کړه. په دوي کي 30 داسي ناروغان ول، چي وروسته ئي څرگنده کړل چي د اکنو د تداوي له پاره ئي نور درمل هم کار کړي ول، نو ځکه د څېړني څخه وایستل سول. 20 تنه داسي کسان ول، چي ایزوتریتونین ئي په منځ کي پرې ایښي ول او استعمال ئي بند کړی وو، چي دوی هم له څېړني څخه وایستل سول. پاتي 30 کسان د څېړني تر اخیر پوري پاته نه سول او تر وخت مخکي ئي غوښتنه وکړل، چي دوي دي د څېړني له گروپو څخه وایستل سي. په هر گروپ کي 200 تنه د څېړني تر پایه پاته سول او څېړنه ئي بشپړه کړه. په دواړو گروپونو کي د ناروغانو عمر د 15 څه تر 25 کلنۍ پوري وو، خو د ناروغانو اکثریت په دواړو گروپونو کي د 18 او 22 کلنو تر منځ ول، د نارینه ناروغانو تعداد نسبت ښځینه ناروغانو ته په دواړو گروپونو کي ډېر وو او نسبت ئي 7:1 وو. د اکثریت ناروغانو د ناروغي عمر د 5 اونیو څه تر یونیم کال پوري وو (77%) او د یونیم کال څه تر دوو کلونو پوري (15%) او د پاتي نورو ئي تر درو کلونو زیات وخت د ناروغۍ کیدل. اکثریت ناروغان هغه ځوانان ول، چي د رستورانټونو خوراک ئي تر کورني خوراک ډیر وو (60%) او دوهمه ډله هغه ځوانان ول، چي د بازار له دوکانو څخه ئي پروسیس سوي خواړه خوړل لکه چیس او سلتي (15%) پاتي برخه ئي هغه ځوانان ول چي اکني ولگاریس ئي ارثي درلود، یعني هغه ځوانان چي په فامیل کي ئي دا ناروغي موجوده وه.

په 65% مریضانو کي ایزوتریتونین بهترینه پایله درلوده، چي په 20% مریضانو کي ئي نتیجه ښه وه او په پاتي 15% ناروغانو کي ئي مثبت نتیجه نه وه ورکړې. د دې په خلاف، ایزوتریتونین جمع 2% موضعي کلیندامایسین په 85% مریضانو کي ډېره ښه نتیجه ورکړي وه. په 10% ناروغانو کي ښه نتیجه او په پاتي 5% ناروغانو کي ئي نتیجه سمه نه وه. پایلو ته په کتو دا انگېرل کېدای سي چي د ایزوتریتونین سره د موضعي کلیندامایسین یوځاي کیدل د اکني ولگاریس په ناروغانو

کي ډېره بڼه نتیجه ورکوي او هغه اکثري څي التهاب ولري په يوازي ايزوتریتونين باندې نه کنټرولېږي. په دواړو گروپونو کي جانبي عوارض ډېر کم او ددې وړ نه ول، څي ناروغ دي تداوي د جانبي عوارضو له وجي په منځ کي پرېږدي.



اول شکل: د ځوانۍ دانې په پيدايښت کي مرسته

جدول اول: د ځوانۍ دانو په تداوي کي د ايزوتریتونين 10 ملي گرام او موضوعي کلينډاميسين 2% ناوړه اغيزې

Adverse Effect	Group A (10 mg Isotretinoin)	Group B (2% Topical Clindamycin)
د شونډو او پوستکي وچوالی Dryness (Skin/Lips)	لوړ وقوعات (High incidence)	تيټ وقوعات (Low incidence)
موضوعي خارش (Irritation (Local)	متوسط (Moderate)	High incidence (localized)
سوروالی Redness (Erythema)	د تيټ څخه تر لوړ پوري (Mild to moderate)	منځنی (Moderate)
رژيدل (Peeling)	عادي (Common)	ډېر لږ (Rare)
هضمي مشکلات Gastrointestinal Issues	ډېر لږ (Rare)	راپور ندی ورکول سوی (Not reported)
سردرد (Headaches)	کم وخت (Occasionally reported)	Not reported
د رڼا سره حساسيت (Photosensitivity)	عادي (Common)	لږ (Minimal)
حساسيتي غبرگون (Allergic Reaction)	ډېر لږ (Rare)	کله کله (Occasional)

په پورته اول جدول کي هغه جانبي عوارض چي د موضعي کلیندامایسن 2% او ایزوتريټونین لس ملي گرام له کبله رامینځ ته سوي راوړل سوي دي. د دې ترڅنگ، د دوی دواړو ترمینځ مقایسه هم په جدول کي خلاصه سوې ده. د جدول له مخي هغه خلک چي د ځوانۍ دانو له پاره د ایزوتريټونین لس ملي گرام څخه استفاده کوي د شونډو او د پوستکي د وچوالي وقوعات ډېر پکښي لیدل سوي، نظر هغو خلکو ته چي د کلیندامایسن دوه فیصده څخه استفاده کوي. په هغو خلکو کي چي له کلیندامایسن دوه فیصده څخه استفاده کوي د موضعي خارش وقوعات ډېر پکښي لیدل سوي نظر هغو خلکو ته چي د ایزوتريټونین لس ملي گرام څخه استفاده کوي. په جدول کي پاته جانبي عوارض ډېر کم او یا هم په یادو خلکو کي نه دي لیدل سوي.

مباحثه

دا څېړنه ددې له پاره ترسره سول، چي د یو موضعي انټي بیوټک درملو 2% کلیندامایسن او ایزوتريټونین موثریت د اکني ولگاریس په ناروغانو کي معلوم کړي. د موضعي کلیندامایسن د ټاکني سبب دا وو، چي په دې اړه ډېري څېړني نه دي سوي او اکثره جلدي ډاکټران د بنزایل پراکساید کارول بهتره بولي، خو دا چي هغه نسبت کلیندامایسن ته گران تمامېږي او همدارنگه په ځینو ناروغانو کي ئې مقاومت ډېر سوی دی، نو مو وغوښتل چي کلیندامایسن هم د بنزایل پر اکساید غوندي ډېر عادي وکارول سي، تر څو ډاکټر او ناروغ څو انتخابه ولري. همدارنگه، مو وغوښتل چي د قوي سیستمیک انټیبیوټیک درملو د مخنیوی له پاره په اکني ولگاریس کي استفاده کمه سي او یا هم ونه سي. موضعي کلیندامایسن د اوږد مهال له پاره هم کارول کېدای سي او مریضان نه ورسره مقاومه کېږي (Layton & Ravenscroft, 2023).

د څېړني نتیجه په متوسط او وخیم ناروغانو کښي دا وه چي د ایزوتريټونین یوازي کارونه دومره ډېر اثر نه لري نسبت دي ته چي موضعي کلیندامایسن ورسره یو ځای سي، چي یوازي ایزوتريټونین په 65% مریضانو کي بهترینه نتیجه ورکول مگر کله چي کلیندامایسن ورسره یو ځای سو بیا 85% ته بهترین نتیجه ورکونکي مریضان ورسیدل. دا خپله یو ډېر لوی تغیر دی چي دا نتیجه د نړۍ په کچه د نورو څېړنو سره مشابهت لري، چي سبب ئې دا کېدلای سي چي په افغانستان کي التهابي اکني ولگاریس نسبت کومیدونل اکني ته ډېر دي نو په دې وجهه هم د یو موضعي انټي بیوټیک اضافه کېدل د هغو مریضانو پر فیصدي مستقیم اثر درلود چي بهترینه نتیجه ئې ورکړي ول. په دغه څېړنه کي نارینه ناروغان اکثریت ول، چي دا د نړۍ والو څېړنو برعکس ده، چي سبب ئې کېدای سي د افغانستان کلتوري ماحول او همدارنگه د نارینه وو اقتصادي وضعیت نسبت ښځو ته بهتروالي ولري. په عمومي ډول د افغانستان نارینه مالي سرچینو ته د ښځینه وو په نسبت ډېر لاس رسی لري. همدارنگه دا په اثبات رسوي چي په کندهار کي نارینه نسبت ښځو ته ډېر د اکني ولگاریس له ناروغۍ څخه په تکلیف دي، چي دا هم د نړۍ د نورو څېړنو خلاف نتیجه ده. سبب ئې کېدای سي دا وي چي نارینه زموږ په ټولنه کي ډېر دباندي د رستورانټ (Fast Food) خوراکونه خوري، مشروبات ډېر چښي او د پوستکي خیال ډېر نه ساتي (Heng & Chew, 2020).

د لس ملي گرامه ایزوتريټونین موثریت 65% فیصده وو او عموماً په هغو ناروغانو کي ئې موثریت ډېر وو چي التهاب ئې کم وو، خو په دوهم گروپ کي چي کله کلیندامایسن ورسره یو ځای سوي وو نو بیا په هغو ناروغانو کي چي التهابي اکني ئې درلودل هم ډېره ښه نتیجه ورکړي وه، چي بهترین موثریت ئې 85% ته وختي او دا نتیجه د نړۍ والو څېړنو سره ورته

والي لري. همدارنگه، که چيري ددې درملو د مصونيت له پلوه مقايسه وسي دا به جوته سي، چي دواړه درمل مصون دي. اما ايزوتريتينون د جانبي عوارض لرونکي ول چي اکثریت مريضانو ترې شکایت درلود، چي هغوی ته ئې د شونډو وچوالی پېښوی. وروسته له دې د جلد سوزش په دوهم گروپ کي، چي کلیندامایسین هم ورسره یو ځای استفاده سوي ول د مريضانو د شکایتونو لویه برخه تشکیلول، چي دا پایلي هم د نورو نړۍ والو څېړنو سره یو شي وې. د څېړني په جريان کي وليدل سول چي د شونډو وچوالی او همدارنگه د جلد سوزش د يادو درملو د تکراري استعمال څخه ورسته کرار کرار کمېدل. د وچوالي او سوزش دا مرحله په حقيقت کي د حساسيت د دور په نامه پېژندل کيږي، چي نورو نړۍ والو څېړنو هم دې ته اشاره کړې ده. لوړ ذکر سوي جانبي عوارض د شپږمې هفتي وروسته په تدريجي ډول سره کم سول. که چيري جانبي عوارض ئي د نړۍ والو څېړنو سره پرتله کړو نو دا به جوته سي، چي د هغو څېړنو پایلي هم د دغه څېړني سره ورته والی لري (Sardana et al., 2009; Rath, 2011).

فمي ايزوتريتينون (Oral isotretinoin) د منځنۍ او شديدې ځوانۍ دانې له پاره تر ټولو اغېزمنه درملنه ده او ډېری جانبي عوارض ئې د درملو له دوز (مقدار) سره تړاو لري. د ايزوتريتينون ټيټ دوز (0.5 ملي گرامه پر کيلوگرام د بدن وزن، هره ورځ د يوې اوونۍ له پاره، چي د هرو څلورو اوښو وروسته تکرار سي، د شپږو مياشتو له پاره) هم اغېزمن تمامېدای سي، او د درملنې وروستۍ پایلي ئې د لوړ يا معياري دوزونو له پایلو سره نږدې يا ورته کېدای سي (Sadeghzadeh-Bazargan et al., 2021). ياد نتايج د دغه څېړني سره په توپير د کلیندامایسین 2% جمع کېدل د فمي ايزوتريتينون سره د ياد مرض په تداوي کي څو چنده مثبت رول لوبولای سي.

په آخیر کي، دغه څېړنه د قوت ټکو تر څنگ ځيني محدوديتونه هم لري. دغه څېړنه په يوه روغتون کي ترسره سوې ده، چي دا خپله يو محدوديت دی، بايد د کندهار ښار د ټولو روغتونو ډاټا را ټوله سي، چي لا هم ښه موثريت ولري. د څېړني د سمپل اندازه کمه ده بايد تر 3000 ډېري نمونې وي، چي د درملو د مصونيت اړوند ښه فيصله وسي. بل داچي له څېړني زيات مريضان ووتل او يا ئې څېړنه تکميل نه کړه چي دا هم يو محدوديت دی.

پایله

د څېړني پایله داده، چي لس ملي گرامه ايزوتريتينون په يوازي سر د اکني ولگاریس مريضانو کي هغومره موثره نه دی لکه موضوعي 2% کلیندامایسین چي ورسره یو ځای سي په دې ډول کېدای سي چي التهابي او غير التهابي اکني ولگاریس تداوي سي که څه هم ايزوتريتينون په غير التهابي اکني کښي ډېر رول لري، لکه د کميدونو په له منځه وړلو کي په متوسط او وخیم حالت کي التهابي ځوانۍ دانې ډيري وي نو يو موضوعي انټي بيوتيک ته ضرورت سته چي ورسره اضافه سي.

سپارښتني

د ځوانۍ دانې د تداوي له پاره د لس ملي گرامه ايزوتريتينون او 2% موضوعي کلیندامایسین کارول يو ښه کمباينيشن (يو ځای والی) کېدلای سي، چي په اکثریت مريضانو کښي چي متوسط او وخیم التهابي اکني ولري موثر واقع سي او هم مصون دي. ددې له پاره چي موږ تر دې هم ډېر انتخابونه ولرو بايد د اکني ولگاریس د تداوي اړوند نوي څېړني وسي او

موضوعي درمل مشخص او ډاکټرانو ته ور وپیژندل سي، چي د هغو څخه استفاده کېدلای سي د ځوانۍ دانو لرونکو ناروغانو له پاره گټور تمام سي.

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Efficacy and Safety of Oral Isotretinoin and Topical 2% Clindamycin in Patients with Moderate and Severe Acne Vulgaris

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Abstract

Acne vulgaris is an inflammatory disease of the pilosebaceous units, which occurs very frequently among adolescents. Acne vulgaris commonly affects the face, neck, upper back, and chest. Acne vulgaris has a significant impact on the physical and psychological condition of adolescents. Timely treatment can prevent complications of acne vulgaris in young people. The purpose of this study is to compare the safety and efficacy of isotretinoin combined with topical 2% clindamycin in patients with moderate to severe acne. In this study, 400 male patients over the age of 15, and female patients over the age of 15 who were unmarried or who did not have a plan for childbirth within the next three years, were included. The 400 patients were treated with 10 mg isotretinoin in combination with topical 2% clindamycin for 12 weeks, and were followed up every 4 weeks to assess treatment efficacy and safety. About 90% of patients reported dryness of the lips, and 30% experienced nasal dryness. Other than these side effects, the drugs were generally well tolerated. The combination of isotretinoin with 2% clindamycin showed very good efficacy in 65% of patients (260 cases), good efficacy in 20% (80 cases), and no significant improvement in 15% (60 cases). In the conclusion, both drugs were effective over the 12-week period. Isotretinoin alone showed greater benefit in patients with non-inflammatory or less inflammatory acne, while the combination of isotretinoin with topical clindamycin had superior effects in patients with inflammatory acne.

Keywords: Acne vulgaris, Isotretinoin, Clindamycin, Pilosebaceous unit

د اسلامي شريعت له نظره د انساني اعضاوو د انتقال او پيوند حکم

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لنډیز

دا چې الله جل جلاله انسان یو اشرف المخلوقات پیدا کړی دی او د ضرورت د رفع کولو له پاره یې د نورو اجناسو څخه د گټې اخیستنې اجازه ورته کړې ده، چې په دې ضروریاتو کې یو هم د انسان تداوي ده. د انسان تداوي په مختلفو لارو او بېلابېلو ادویاتو او ماشین الاتو سره کېږي. الله جل جلاله او نبی کریم (صلی الله علیه وسلم) د همدې تداوي له پاره خپل اصول ټاکلي دي، چې انسان باید د هغو اصولو په رڼا کې خپله تداوي ترسره کړي. کله انسان په تداوي کې د خپل بدن اعضاوو ته او کله هم د بل انسان و اعضاوو ته ضرورت پیدا کوي. د دغه څېړنې موخه دا ده، چې معلوم کړي اسلامي شريعت د انسان تداوي او د تداوي په هدف د انساني اعضاوو د انتقال او پيوند په اړه څه دریځ لري. په دغه څېړنه کې له کتابتوني میتود څخه استفاده سوې ده، له معتبرو کتابونو او علمي مقالو څخه معلومات را اخیستل سوي دي. ترڅنگ یې یو شمېر معتبرې اسلامي ویبپاڼې هم پلټل سوي دي. دا چې تداوي د انسان د ډیرو لویو ضرورتونو څخه ده او اسلامي شريعت یې په اړه احکام واضح کړي دي، نن سبا د نړۍ د بې ساري پرمختګ له کبله د تداوي په منظور انساني اعضاء یا غړي یو بل ته پیوندېږي. دا چې انسان خپل د بدن او غړو مالک نه دی، ځکه نو اسلامي شريعت دا ډول تداوي ته اجازه نه ورکوي. د څېړنې موندنې د افغاني ټولنې له پاره په ځانګړې توګه د ډاکترانو له پاره ډېرې اړینې دي، ځکه چې په افغاني ټولنه کې د دغې موضوع په اړه د اسلامي احکامو وضاحت کم دی.

کلیدي کلمې اسلام، شريعت، انساني اعضاء، انتقال، پيوند، حکم

پيژندنه

انسان د الله جل جلاله د مخلوقاتو څخه يو بې جوړې او بې ساري مخلوق دی او ټوله نړۍ يې د انسان د بقاء له پاره پيدا کړې ده او انسان ته يې د خپل ژوند او سلامتيا ساتلو له پاره بېلابېل اسباب په لاس کي ورکړي دي. دا چي الله جل جلاله انسان د له نورو مخلوقاتو څخه جلا او بې مثاله پيدا کړی دی، اما د نړۍ د زيات پرمختگ سره سره بيا هم انسان د خپل صحت د سالم پاته کېدلو له پاره په نړۍ کي کوم څه پيدا نه کړل او مجبور سو، چي ځينو ناروغو انسانانو ته د نورو انسانانو د بدن غړي انتقال او پيوندکړي، ځکه نو ضروري ده چي ياده موضوع د اسلامي شريعت د احکامو له مخي وڅېړل سي.

د څېړني ستونزه

دا چي په موجوده نړۍ کښي انسانان د خپل بدن د غړو تداوي ته اړتيا لري او د طبابت پرمختگ دې مرحلې ته رسېدلی دی، چي د انسانانو غړي پيوندوي. هر کال په نړۍ کي زيات شمېر د انسانانو غړي يو بل ته پيوندېږي، ځيني اړمن خلک ليدل کېږي، چي د بدن يو يا څو غړو ته اړتيا لري، ځکه نو د يو مسلمان په توگه دا سوال پيدا کېږي، چي آيا دا ډول تداوي د اسلام په مبارک دين کي رواينست لري او که يه؟ په پښتو ژبه کي د دې مسئلې اړوند ډېر لږ معلومات موجود دي او په ټولنه کي د دې مسئلې اړوند د بوهواوي کچه هم ډېره ټيټه معلومېږي ځکه نو غوره وگڼل سوه، چي په ياده موضوع کښي يوه علمي مقاله وليکل سي.

د څېړني اهميت

دا چي الله جل جلاله انسان ته ډير عزت او کرامت ورکړی دی او د هغه د بدن او غړو د کرامت ساتلو له پاره يې بېلابېل شرعي احکام وضع کړي دي، خو نن سبا د طبابت او ټکنالوژي د پرمختگ په وجه د انساني اعضاوو او غړو پيوند ډېر سوی دی، چي د دې موضوع د شرعي حکم په اړه ډېر خلک پوره معلومات نه لري، چي دا کړنه په شرعيت کي څه حکم لري، بلخوا دا موضوع يوه نوې موضوع ده چي په دې اړه ليکني ډېر لږ او په پښتو کي بيخي په نه شتون حساب دي، ځکه نو د دې موضوع د څېړلو له پاره اشد ضرورت موجود وو تر څو خلکو ته په خاص ډول ډاکټرانو ته د دې مسئلې د احکامو اړوند پوره معلومات وړاندي سي، د دغه مقالې تر ليکلو وروسته به افغاني ټولنه د انساني اعضاوو د انتقال او پيوند په شرعي حکم خبر سي او په ټولنه کي به د انساني غړو خرڅول او هبه کول ډېر کم سي.

د څېړني موخي

1. د انسان او انساني غړو کرامت پېژندنه؛
2. د انسان د بدن د غړو د پيوندولو او انتقال شرعي احکام واضح کول.

د څېړني پوښتني

1. د انسان د بدن او د هغه د غړو کرامت څه دی؟
2. د انسان د بدن د اعضاوو د انتقال او پيوند شرعي احکام څه دي؟

د خبرني تگلاره

د معلوماتو راغونډولو له پاره کتابتوني میتود کارول سوی دی، د موضوع له پاره د معتبرو او معتمدو کتابونو، علمي مقالو او اسلامي ویبپاڼو څخه معلومات راټول سوي، ترتيب او تنظيم سوي دي. دا چي نوموړې موضوع اختلافي ده نو هغو اقوالو ته ترجيح ورکول سوې ده، چي دلائل ئې قوي دي.

د موضوع تيوريکي شاليد

الحمد لله رب العلمين والصلاة والسلام على اشرف الانبياء والمرسلين سيدنا محمد المبعوث رحمة للعالمين و على آله و اصحابه الطيبين الطاهرين و على من تبعهم باحسان الى يوم الدين.

امابعد: دا د مسلمانانو عقیده ده، چي د ټولو کائناتو هغه که عاقلان دي او که غیر عاقلان، متحرک او که ثابت، بهېدونکي دي او که جامد، د دې ټولو مالک او خالق الله جل جلاله دی. د الله جل جلاله حکمت و غوښتل چي په دې ټولو مخلوقاتو کي دي يو مخلوق له نورو ټولو مخلوقاتو څخه جلا وي. هغه دي په بې شمېره ځانگړو نعمتونو نازول سوی وي او هغه دي په مخکه کي خليفه وگرځي. هغه مخلوق انسان دی. الله جل جلا له انسان لوړکړ، چي الله جل جلاله ئې په اړه فرمايي: {وَلَقَدْ كَرَّمْنَا بَنِي آدَمَ} سورة اسراء (701) ايات. ژباړه: په تحقيق سره موږ انسان مکرم گرځولی دی.

انسان ئې په مخکه کي خليفه وگرځوي، چي الله جل جلاله ئې په اړه فرمايي: (وَإِذْ قَالَ رَبُّكَ لِلْمَلَائِكَةِ إِنِّي جَاعِلٌ فِي الْأَرْضِ خَلِيفَةً قَالُوا أَتَجْعَلُ فِيهَا مَنْ يُفْسِدُ فِيهَا وَيَسْفِكُ الدِّمَاءَ وَنَحْنُ نُسَبِّحُ بِحَمْدِكَ وَنُقَدِّسُ لَكَ قَالَ إِنِّي أَعْلَمُ مَا لَا تَعْلَمُونَ) سورة بقره (30) ايات. ژباړه: کله چي ستا رب جل جلاله ملائکو ته وويل: چي زه په مخکه کښي خليفه پيدا کوم، ملائکو ورته وويل: آيا ته په مخکه کښي داسي څوک پيدا کوې، چي په مخکه کښي فساد کوي او ويني پکښي تويوي او موږ ستا حمد او پاكي بيانوو، الله جل جلاله ورته وويل: زه په هغه څه علم لرم، چي تاسي په هغه علم نه لرئ.

بيا ئې د انسان د خدمت له پاره ټوله کائنات مسخر وگرځول، تر څو انسان مطمئن او په ارام سر ژوند وکړي، چي الله جل جلاله په دې اړه فرمايي: (أَلَمْ تَرَوْا أَنَّ اللَّهَ سَخَّرَ لَكُمْ مَا فِي السَّمَاوَاتِ وَمَا فِي الْأَرْضِ) سورة لقمان (20) ايات. ژباړه: اى انسانه ايا تا نه دي ليدلي چي الله جل جلاله ستاسي له پاره هغه څه، چي په مخکه او آسمانونو کښي دي مسخر کړل او دا تسخير چي الله جل جلاله و انسان ته عطا کړی دی، د دې له پاره چي انسان له هغه څخه گټه واخلي، د ملکيت تسخير نه دی؛ ځکه چي د هر شي حقيقي مالک حتي د انسان مالک هم الله تعالى دی.

له دې امله د ضرورت پر مهال انسان کولای سي، چي د اسبابو څخه د اړتيا پوره کولو په صورت کي د مسخرو شيانو څخه استفاده وکړي، چي په دې لړ کي تداوي هم يو سبب دی، تر څو انسان خپل ژوند ته دوام ورکړي او د خپل ځان او ټولني له پاره د گټي مصدر وگرځي. دا تداوي بايد د شريعت په حدودو کي وي. دا چي موږ ئې نن گورو يا اورو چي د يو جوړ کس اعضاء بل ناروغ کس ته انتقالېږي، که هغه په رانيولو سره وي او که د احسان په شکل وي، دا هغه تداوي ده، چي اسلامي شريعت اجازه نه ورکوي. ځکه چي د انسان د بدن اعضاء د انسان ملکيت نه دی او نه هم دا مال دی، نو په دې کي تصرف کول هم روا نه دی.

د څېړونکي د پلټنې پر اساس د دغه موضوع اړوند په ملي ژبو کوم کتاب، مقاله او نور معلومات شتون نه لري، البته په نور ژبو کې بېلابېل کتابونه لیکل سوی دي، چې د دې مقالې او هغوی ترمنځ توپیر دا دی، چې دغه مقاله نسبت هغوی ته ډېره مختصره او لنډه لیکل سوې ده، لکه: سید ابوالقاسم (2004)، په خپل کتاب انساني اعضا کې پیوند کاري او انتقال خون کې شرعی حیثیت، د انساني غړو د انتقال په اړه داسې وایي: د انساني غړو عطا کول (بل چاته ورکول) د نعمت ناشکري ده، اسلامي شریعت مسلمانانو ته د نورو مسلمانانو سره د اعانت کولو او هغوی ته د فایدي رسولو ترغیب ورکړی دی او دا ډېر د اجر او ثواب کار دی، مگر اسلامي شریعت هیڅ ځای داسې نه دي فرمایلي چې انسان دي خپل د بدن غړي قطع کړي او په هغه سره دي بل انسان ته فایده ورسوي.

مولانا مفتي محمد شفیع صاحب په خپل کتاب جواهر الفقه (2010) کې وایي: کله چې د وینې ورکولو ضرورت وي، یعنې هغه مریض چې د هلاکت خطر ور سره تړلی وی او د ماهر ډاکټر د نظره د هغه د ژوند د ژغورولو کومه بله لار نه وي موجوده، نو وینه ورکول جائز دی.

الشاذلي په خپل کتاب حکم نقل اعضاء الانسان في الفقه الاسلامي، کې وایي: د ژوندي معصوم الدم (هغه انسان چې وینه ئې ساتل سوې وي) انسان د یو غړي پرې کول او بل ضرورتمند انسان ته ورکول د فقهاء کرامو په اتفاق سره حرام دی. علوي په خپله مقاله نقل اعضاء من المنظور الاسلامي، کې د ژونديو انسانانو د غړو د انتقال حکم داسې بیان کړی دی: فقهاء کرامو د معصوم الدم انسان (ژوندي وي او که مړ) حرمت بیان کړی دی او هیڅ انسان ته جایز نه ده، چې بې له حقه د هغه حرمت نفی کړي او پر هغه تیری وکړي. انسان د خپل نفس مالک نه دی او په خپل جسد کېنې یا د خپل بدن په یو غړي کېنې تصرف ورته جایز نه دی، ځکه چې د انسان بدن د الله تعالی له لوري امانت دی، له همدې کبله اسلام، انتحار (خان وژنه) او مثله (د یو انسان څخه د بدن غړي پرې کول او بد رنگ کول) حرام کړي دي.

په اسلامي فقه کې د تداوي حکم

له ناروغیو څخه تداوي کول داسې یوه کړنه ده، چې شریعت ئې هم غوښتنه کوي، لکه څنگه چې دا خبره د شریعت علماوو د قرآن کریم او نبوي حدیثو له نصوصو څخه استنباط کړی ده، خو کله تداوي د مباح شي په خوراک سره وي، کله د حرام شي په خوراک سره وي، کله په عملیات سره وي او کله په داغ کېدو سره راځي. په دې ټولو کې فقهاوو شرعي حکم بیان کړی دی، چې دا حکم به اول د قرآن کریم له نصوصو، وروسته له نبوي حدیثو او بیا د علماوو له نظره څخه بیان کړو.

د قرآن کریم آیتونه

کله چې ایوب علیه السلام ناروغ سو، نو ده خپل رب تعالی ته اواز وکړ: چې زه شیطان په تکلیف او عذاب کې اچولی یم، الله جل جلاله دی په هغه څه سره امر کړ، چې هغه د ده له پاره شفا وه او الله جل جلاله پر دې قادر دی، چې ده ته ئې بېله سببه شفا ورکړي وای. الله جل جلاله فرمایي: (وَإِذْ كُنَّا عَبْدًا لِّأَيُّوبَ إِذْ نَادَى رَبَّهُ أَنِّي مَسَّنِيَ الشَّيْطَانُ بِنُصْبٍ وَعَذَابٍ) سورة ص (41) آیات ژباړه: او زموږ د بنده ایوب علیه السلام یادونه وکړه، کله چې هغه خپل رب ته غږ وکړ، چې شیطان زه په سخت تکلیف او عذاب کې اچولی یم. الله جل جلاله ده ته امر وکړ، چې رکض (په پښه سره وهل) وکړي، ده رکض

وکړي، له هغه ځای څخه چینه راووتل، ده په هغه سره غسل وکړ هغه ظاهري ناروغي له منځه ولاړل. بیا ئې هغه اوبه وڅښلې په دې سره ئې باطني ناروغي هم له منځه ولاړل او ایوب علیه السلام له ټولو ناروغيو څخه جوړ سو.

نبوي حدیثونه

د اسامه بن شریک رضي الله تعالى عنه څخه روایت دی، چي یو صحرايي کس و رسول الله صلى الله عليه وسلم ته راغلی؛ فَقَالَ: يَا رَسُولَ اللَّهِ، أَتَدَاوَى؟ قَالَ: «تَدَاوُوا، فَإِنَّ اللَّهَ لَمْ يُزَلْ دَاءٌ، إِلَّا أَنْزَلَ لَهُ شِفَاءً، عَلِمَهُ مَنْ عَلِمَهُ، وَجَهَلَهُ مَنْ جَهَلَهُ» (مسند الإمام أحمد ص 398). ژباړه: هغه وویل: ای د الله رسوله (ص)! موږ دوا وکړو؟ نبی کریم صلى الله عليه وسلم ورته وویل: دوا وکړئ ځکه الله جل جلاله ناروغي نه ده رالېږلې، خو د هغې له پاره ئې شفاء هم نازل کړې ده. هغه کس په خبر دی، چي په پوهېږي او هغه کس ناخبر دی، چي نه په پوهېږي. همدارنگه د حضرت ابوهریره رضي الله تعالى عنه څخه روایت دی، چي رسول الله صلى الله عليه وسلم وفرمایل: «ما أنزل الله داء، إلا أنزل له شفاء» (ابن ماجه ص 1138). ژباړه: الله جل جلاله هیڅ ناروغي نه ده رالېږلې، خو د هغه له پاره ئې شفاء هم رالېږلې ده.

د فقهاوو اقوال

شوکاني (المتوفى 1834)، په نیل الاوطار صفحه (201) کي د احادیثو په اړه لیکي، چي په ټولو احادیثو کي د اسبابو ثبوت سته او بله دا چي دا خبره د توکل علی الله سره مخالف نه ده، د هغه کس له پاره چي دا عقیده لري چي دا هر څه د الله تعالى په اراده او تقدیر سره کېږي او دا په خپل ذات کي گټه نه لري، بلکي دا وړتیا الله جل جلاله په دې کي ایښې ده. کله ناکله دا دوا خپله په مرض سره اوږي انسان ته زیان رسوي، نو د دې خبرو ټول مدار د الله جل جلاله په اراده سره دی او تدای د توکل خلاف نه ده، لکه څنگه چي د لوږي او تندي ورکول په خوراک او چښاک سره د توکل خلاف نه ده او همدارنگه د هلاکت څخه ځان ساتل، د عافیت دعا غوښتل او د مضرو شيانو نه استعمالول د توکل خلاف نه دی. د نبی کریم صلى الله عليه وسلم دا وینا چي په حدیث د خزامه کي ذکر سوې ده، (هي من قدر الله) یعني هر څه د الله جل جلاله تقدیر دی. د دې تر منځ هم مخالفت نه سته، ځکه الله جل جلاله د ټولو سببونو خالق او هر یو ئې په شفا کي ځانگړی کړی دی. شوکاني وايي، چي حق خبره دا ده چي څوک پر الله جل جلاله باندي باور ولري، چي ټول قضاء او قدر ټاکل سوی دی او هغه به ټول واقع کېږي، نو دې ته وايي چي توکل د سببونو تابع دی. له نبی کریم صلى الله عليه وسلم څخه خپله دا شیان ثابت سوي دي، چي هغه د مدينې منورې پر شاه وخوا د خندق راگرځول دي. د مدينې و طرف ته د هجرت اجازه وسوه او ده هجرت وکړ، د خوراک او چښاک شیان برابرول او د خپلي کورني له پاره دا تنظیم کول، حضرت محمد صلى الله عليه وسلم د دې انتظار نه کاوه چي ده ته به دا شیان د آسمان څخه نازل سي او حال دا چي تر ټولو حقدار هم دی دی، چي ده ته را نازل سوي وای. د هغه کس په اړه ئې وویل: (اعقلها و توکل) چي دی اوبښه وټړي او که ئې ايله پرېږدي، نو هغه ته ئې په ځواب کي وویل: چي هغه دي ئې وټړي او پر الله جل جلاله باندي دي توکل وکړي.

د انسان کرامت

الله جل جلاله په مخکه او آسمانونو کښي په ټولو موجوداتو کښي انسان ته یو خاص شرف او عزت ورکړی دی، په ظاهر او باطن کي ئې ممتاز درجه ورکړې ده، چي د ظاهري شکل په اړه ئې الله جل جلاله فرمایي (لقد خلقنا الانسان في

احسن تقويم) سورةالتين(4) آیات. ژباړه: په تحقیق سره موږ انسان پیدا کړی دی په ښه جوړښت سره. او د علم او ادارک په وجه سره ئې هم تر ټولو مخلوقاتو افضل او بهتر وگرځوی، چي په اړه ئې الله جل جلاله داسي فرمایي: (علم الانسان مالم يعلم) سورة العلق(5) آیات. ژباړه: انسان ته مو هغه څه ور وښودل چي هغه علم نه په درلود.

د انساني تکریم دوي وجهي

لومړي: الله جل جلاله انسان ته په ژوند کي د سهولت له پاره د ټولو مخلوقاتو څخه د استفادې حق ورکړ. د ډيرو حيواناتو شیدې، پوست، غوښي، هډوکي او داسي نورو اجناس ئې د انسان د استعمال له پاره مباح وگرځول، د انسان د بدن د حفاظت له پاره ئې ډول ډول سهولتونه ورکړل، او په ځينو اضطراري حالتونو کښي د انسان د بدن د حفاظت له پاره د غير مباح شيانو د استعمال لاره ورته خلاصه کړې ده.

دوهم: انسان د خپل خوراک او علاج له پاره بې شمېره شيان کوتلای او ميده کولای سي او د هغوی څخه کار اخيستلای سي، خو د انسان د بدن د غړو څخه دغه قسم معامله نه سي کولای.

حاجت، ضرورت، منفعت او داسي نور

1. ضرورت: هغه حالت ته ويل کيږي، چي که انسان ممنوع شيان استعمال نه کړي، نو دی به هلاک يا قريب الموت سي. دا اضطراري حالت دی او په دې صورت کي د حرامو او ممنوع شيانو استعمال په خاصو شرائطو سره روا دی.

2. حاجت: هغه حالت ته ويل کيږي، چي که انسان ممنوع شيان استعمال نه کړي نه هلاکيږي، بلکي په مشقت او تکليف کي واقع کيږي، دا اضطرار حالت نه دی، په دې حالت کي اسلامي شريعت په شرعي احکامو کي سهولت کړی دی، لکه په روژه، لمنځ، طهارت او داسي نورو احکامو کي مگر حرام شيان ئې نه دي روا کړي.

3. منفعت: هغه حالت ته ويل کيږي، چي د يو شي په استعمال سره د انسان بدن ته گټه وي، مگر په نه استعمال سره ئې د هلاکت او مشقت شديد خطر نه وي. په داسي حالت کي حرام شی حلال نه گرځي او نه هم د روژې د خوړلو او داسي نورو احکامو د پرېښودلو اجازه سته.

4. زينت: هغه حالت ته ويل کيږي، چي د يو شي په استعمال سره د انسان بدن ته کومه خاصه فايده نه وي، بلکي صرف يو خواهش وي، معلومه خبره ده، چي دلته د حرام شي د حلال والي سوال نه پيدا کيږي.

5. فضول: هغه حالت ته ويل کيږي، چي يو شی د مباح زينت تر دائرې هم وتلی وي، د دې حکم ښکاره دی، چي د دغه شيانو سره اسلامي شريعت د سهولت پر ځای د هغه سره مخالفت کړی دی.

د اضطراري حالت تفصيل

اضطرار د ضرورت د لفظ څخه اخيستل سوی دی او د ضرورت د لفظ په تعريف کي تېر سول، چي خطر يقيناً د نفس هلاکونکی وي او قرآنکريم د هلاکت په وخت کي د حرام استعمال ته اجازه ور کړې ده. که د نفس هلاکت يقيني نه وي، صرف يوه بيره موجوده وي، دا حالت اضطرار نه بلل کيږي، د مثال په ډول: زيد و خالد ته د قتل اخطار ورکړی او د قتل اراده ئې هم کړې وي، يواځي په دغه خبره سره خالد مضطر نه بلل کيږي، ترڅو چي د قتل حالات او اسباب داسي جمع

سوي نه وي، چي د هغه څخه خلاصون ناممکن وي. که داسي حالت راغي، چي د قتل خبره يقيني سول، بکر مضطر بلل کېږي او د حرامو شيانو استعمال او په ژبه سره د کفري الفاظو ويلو اجازه ورته سته. لنډه دا چي د حرام شي د استعمال له پاره درې شرطونه اېښودل سوي دي:

1. د اضطراب حالت داسي وي، چي د حرام شي په نه استعمال سره د نفس د هلاکت خطر موجود وي.
 2. خطر به يواځي يو وهم نه وي، بلکي د يو معتمد ډاکټر يا حکيم په خبره سره به يقيني وي.
 3. د حرام شي په استعمال د نفس حفاظت د معتمد ډاکټر يا حکيم په تجويز يقيني سوي وي.
- مسئله: د دغه اضطرابي حالت څخه بعضي صورتونه مستثنی دي. مثلاً: يو شخص بل شخص ته ووايي، چي ته فلان شخص مړ کړه، که نه زه تا وژنم، دلته مضطر ته د خپل نفس د حفاظت له پاره د دريم شخص قتل روا نه دی.

ايا انسان په خپل بدن کي د تصرف حق لري او که نه؟

د تصرف تعريف: تصرف په لغت کي تقلب او اړولو ته وايي، يعني د يو شي د يوه حال څخه بل حال ته اړول او په اصطلاح کي علماوو په دوه قسمه ويشلی دی، 1- تصرف حسی: لکه خوراک، چنباک، قتل او داسي نور ... 2- تصرف شرعي: لکه نکاح، طلاق، بيع او داسي نور...

د یاد سوال په جواب کي دوه ډوله نظرونه موجود دي:

لومړی: کوم کسان چي د انساني غړو انتقال او پيوند جائز بولي، هغوی وايي: انسان په خپل نفس کي د تصرف حق لري. دوهم: کوم کسان چي د انساني غړو انتقال او پيوند ناجائز بولي، هغوی وايي: انسان په خپل نفس کي د تصرف حق نه لري، دليل ئې دغه آیات کریمه دی. (لقد کرّمنا بنی آدم) سورة الاسراء (70) آیات. ژباړه: په تحقيق سره موږ انسان ته عزت ورکړې. دوی وايي، چي انسان که ژوندی وي او که مړ محترم بلل کېږي. علماء کرام وايي: د موجوده دلائلو څخه معلومېږي، چي اصلي موضوع د انسان د ژوند او جسد ساتل دي او انسان په خپل بدن کېښي تصرف نه سي کولای، ځکه چي حقوق پر درې ډوله وېشل سوي دي.

1- حق الله 2- حق العبد 3- حق مشترک بين الله والعبد

1. حق الله: هغه حق ته ويل کېږي، چي په عامه منفعت پوري متعلق وي، لکه حدود، عبادات او داسي نور...
2. حق العبد: هغه حق ته ويل کېږي، چي يواځي د يوه انسان په مصلحت پوري خاص وي، لکه د بل چا د مال حرمت او داسي نور...

3. مشترک حق: هغه حق ته ويل کېږي، چي د الله پاک او بنده ترمنځ شريک وي، يعني د ټولني او د يوه خاص بنده ترمنځ مشترک وي، لکه د انسان د ژوند حق، د انسان د بدن د حفاظت حق او داسي نور...

د علماوو د دغه نظرونو څخه معلومېږي، چي انسان نه سي کولای خپل نفس قتل کړي او يا په هغه کېښي تصرف وکړي او نه هم د دې مالک بلل کېږي، چي بل چاته اجازه ورکړي چي د ده په نفس کېښي تصرف وکړي.

په محرماتو سره د تداوي حکم

نبي کریم صلی الله علیه وسلم فرمایي (فَإِنَّ اللَّهَ حَرَّمَ عَلَيْكُمْ دِمَاءَكُمْ، وَأَمْوَالَكُمْ، وَأَعْرَاضَكُمْ كَحَرَمِهِ يَوْمَكُمْ هَذَا، فِي شَهْرِكُمْ هَذَا، فِي بَلَدِكُمْ هَذَا) (صحیح البخاري ص 177). ژباړه: الله جل جلاله پر تاسي ستاسي ويني، مالونه او سامان الات داسي حرام کړي دي لکه حرمت د دې ورځې، حرمت په دې میاشت کې او حرمت په دې ښار کې. او بل ځای نبي علیه السلام فرمایي: کل المسلم على المسلم حرام دمه وماله وعرضه. ژباړه: پر هر مسلمان باندي د بل مسلمان وينه، مال او سامان الات حرام دي. کله چې د انسانانو مالونه، سامانونه یو پر بل باندي په حدیث شریف سره حرام سوه، نو د عضوي په نقلولو سره د انسان تداوي، که هغه انسان ژوندی وي او که مړ وي و بل انسان ته دا تداوي په حرام سره ده له دې امله لاندې هغه حدیثونه ذکر کېږي، چې هغه په حرامو سره د تداوي حکم بیانوي، له ابو درداء رضي الله عنه څخه روایت دی، چې نبي کریم صلی الله علیه وسلم وفرمایي: «إِنَّ اللَّهَ أَنْزَلَ الدَّاءَ وَالِدَّاءَ وَجَعَلَ لِكُلِّ دَاءٍ دَوَاءً فَتَدَاوَوْا وَلَا تَدَاوَوْا بِحَرَامٍ» ژباړه: الله جل جلاله ناروغی او دوا را لېږلي ده او د هري ناروغۍ له پاره ئې دوا ټاکلې ده، نو تاسي دوا وکړئ او په حرام سره دوا مه کوئ، ابن مسعود رضي الله عنه د مسکراتو په اړه حدیث روایت کړی دی: «إِنَّ اللَّهَ لَمْ يَجْعَلْ شِفَاءَكُمْ فِيمَا حَرَّمَ عَلَيْكُمْ» (صحیح البخاري ص 110). ژباړه: الله جل جلاله په هغو شيانو کې، چې پر تاسي باندي حرام سوي دي ستاسي له پاره شفاء نه ده ایښې.

د علماوو نظرونه چې تداوي په حرام سره څه حکم لري؟

نبي کریم صلی الله علیه وسلم د شرابو په اړه فرمایي: (انه ليس بدواء لكنه داء) (مرقاة المفاتيح شرح مشكاة المصابيح ص 277). چې شراب دوا نه ده په دې سره تداوي کول حرامه ده، لکه څنگه چې ئې چښاک حرام دی، همدا ډول هغه نجس او حرام شيان چې هغه حرام بلل سوي دي په هغو سره تداوي حرامه ده، چې دا خبره جمهور علماء کوي. په فتح القدیر کې راځي: قال (ولا بأس بالحقنة يريد به التداوي) لأن التداوي مباح بالإجاء، وقد ورد بإباحته الحديث. إلا أنه لا ينبغي أن يستعمل المحرم كالخمر ونحوها؛ لأن الاستشفاء بالمحرم حرام. ژباړه: پیچکاری لگول پرواه نه کوي، چې د تداوي له پاره وي، ځکه چې تداوي په اجماع سره مباح ده او د دې په مباح والی کې حدیث راغلی دی. خو دا نه ښایي چې حرام په کښي استعمال سي لکه شراب او نور، ځکه په حرامو سره شفا حاصلول هم حرام دی.

د ضرورت په وخت کې د ژوندي انسان عضو پيوندول

په دې بحث کې موږ ته لازمه ده چې اول په تفصیل سره هغه حالات بیان کړو، چې هغه اعضاء نقل کېږي. که هغه عضو ورکوونکی وي او که عضو اخیستونکی وي او که هغه خپله همدا عضو وي، چې پیوندېږي او هغه تاثیر چې پر هغه انسان باندي کېږي او هغه لاري چاري چې په هغه سره د عضوي پیوند ممکن وي. که د خپل انسان عضو و بل ځای ته پیوندوي او که ئې د ځان څخه بل کس ته پیوندوي.

هغه اعضاء چې انسان ئې د خپل بدن و بل ځای ته پیوندوي

انسان د خپل بدن و ځینو اعضاوو ته ضرورت پیدا کوي، چې هغه عضو کله ناکله د ښایست او اصلاح له پاره پیوندوي او کله ئې د ضرورت او ژوندي پاتېدو له پاره پیوندوي.

1: د هغو اعضاوو پيوند چې د اصلاح له پاره کېږي: هغه غړي چې انسان د دې له پاره ضرورت ورته پيدا کوي چې خپل ځان په اصلاح کړي لکه يو انسان چې يو ښکاره عيب ولري او د هغه عيب د له منځه وړلو له پاره د عضوي و پيوند ته ضرورت پيدا کړي، لکه هغه عيب چې د سوزلو وروسته راسي او يا هم د ځينو پښو او ټکرونو وروسته راسي، چې په د انسان په ظاهري شکل کې عيب پيدا سي، چې بيا د جراحي عملياتو وروسته د دې عيب اصلاح راسي. نو دا ډول عملياتونه د تصحيح له پاره قياساً جواز لري. خو هغه عملياتونه چې د ښايست له پاره کېږي او په دې کې هدف هم د ښايست ډېروالي وي، لکه د پزي جگوالی او د دې په څېر نور، نو دا عملياتونه په اسلامي فقه کې منع گڼل سوي دي. لکه څنگه چې په حديث شريف کې راځي، عن عبدالله قال لعن الله الواشيات والمستوشيات والنامصات والمتنمصات والمتفلجات للحسن المغيرات خلق الله قال فبلغ ذلك امرأة من بني أسد يقال لها أم يعقوب وكانت تقرأ القرآن فأنته فقالت ما حديث بلغني عنك أنك لعنت الواشيات والمستوشيات والمتنمصات والمتفلجات للحسن المغيرات خلق الله فقال عبدالله وما لي لا ألعن من لعن رسول الله صلى الله عليه وسلم؟ وهو في كتاب الله فقالت المرأة لقد قرأت ما بين لحي المصحف فما وجدته فقال لئن كنت قرأتيه لقد وجدته قال الله عز وجل { وما أتاكم الرسول فخذوه وما نهاكم عنه فانتهوا } (صحيح مسلم ص 1678). ژباړه: عبدالله ابن مسعود رضي الله عنه وايي: الله لعنت ويلى دى پر خال وهوونكي او پر هغه کس چې دا خال وهي، پر هغه کس چې ورېښتان کاږي او چې ورېښتان ورڅخه کښل کېږي، او هغه کس چې د غاښونو ترمنځ فاصله راوړي، چې دا کارونه د حسن له پاره کوي او د الله جل جلاله په تخليق کې تغير راوړي. دا حديث د بني اسد د قبيلې د يوې ښځې ته ورسېدئ، چې د هغې نوم ام يعقوب وو، هغه راغلل و حضرت ابن مسعود رضي الله عنه ته ئې وويل: ماته ستا خبره ورسېدل چې تا پر واشمه او مستوشمه باندي لعنت ويلى دئ او دا دي د الله جل جلاله په تخليق کې تغير راوستونکي بللي دي. حضرت ابن مسعود رضي الله عنه ورته وويل: زه به ولي پر هغه چا لعنت ونه وايم چې نبي کریم عليه السلام پر هغه باندي لعنت ويلى دئ او هغه د الله جل جلاله په کتاب کې هم راغلي دئ. هغې ښځې ورته وويل: آيا په قرآن کریم کې دي همدا خبره موندلې ده؟ ده ورته وويل: که ته چيري قرآن کریم ولولې ته به ئې هم پيدا کړې الله جل جلا له فرمايي: څه چې پېغمبر صلى الله عليه وسلم تاسي ته درکوي هغه واخلي، او له څه شي څخه چې تاسي منع کوي، له هغه څخه منع سي.

2: د هغو اعضاوو پيوند چې د انسان ژوند پر ولاړ وي: فقهاء د دې په اړه فرمايي لکه يو څوک چې ډېر سخت وږى وي او د خوراک له پاره هيڅ شى پيدا نه کړي نو د خپل بدن يوه عضوه پرې کړي، چې خوراک ورڅخه وکړي او د ده ژوند ډېر سي د دې له پاره چې دى له دې اضطرابي حالت څخه ووځي. نو په دې مسئله کې د فقهاء کرامو اختلاف دئ. احناف علماء کرام وايي: انسان ته روا نه ده، چې د خپل بدن يوه برخه د اضطراب په حالت کې پرې کړي، (الضرر لا يزال بالضرر) ولا يأكل المضطر طعام مضطر آخر ولا شيئاً من بدنه. (ابن نجيم، المتوفى 970هـ.ق، ص 74). ځکه چې د مضطر کس له پاره دا جايز نه ده، چې يو مضطر کس دي د بل کس څخه خوراک وکړي او نه هم دا ورته جايز ده، چې د خپل بدن څخه يو شى وخوري. د محمد بن حسن رحمة الله عليه څخه په فتاوى هنديه کې رانقل سوې ده، چې تداوي په هډوکى سره روا ده هغه وخت که دا هډوکى د پسه، غوا او آس وي خو د خنزير او انسان هډوکي به نه وي په دې سره تداوي صحت نه لري. دا بيا توپير نه لري که دا حلال سوى او که مې سوى وي. او شوافع علماء کرام د مضطر کس له پاره د خپل بدن څخه د يو جزء پرې کول او د هغه څخه خوراک کول روا گڼي او ودي ته دوى دوه شرطونه اېږدي: اول دا چې له دې ماسېوا بل شى به موجود نه وي. دوهم دا چې د پرې کوونکى له پاره به دا بېره لږ وي چې دى له پرې کولو څخه نه مړ کېږي، که

چيري د پرې کولو او اضطراب بېرته سره مساوي او هم ډېره وه بيا ئې پرې کول او د هغه څخه خوراک کول حرام دئ (شمس الدين، 1994، ص 164).

د ژوندي انسان څخه و بل ژوندي انسان ته د اعضاوو د پيوند حکم

مخکې موږ هغه مسائل بيان کړل، چي انسان د بل انسان د مړې عضوي څخه گټه اخلي. دا قاعدې دلته ډېريري او سختېري له دې امله چي دلته د انسان په بدن کي روح سته او د ده د ويني ساتنه راغلې ده او پر ده باندي هر ډول تجاوز که ډېر وي او که لږ وي منع سوی دئ او د هغه کس له پاره چي پر انسان او يا هم د هغه پر يو جز باندي تجاوز کوي عذابونه بيان سوي دي. د دې قاعدو د بيانولو له پاره اوس هم يوازي د اړتيا په صورت کي بيان کوو (فَمَنْ اضْطُرَّ غَيْرَ بَاغٍ وَلَا عَادٍ فَلَا إِثْمَ عَلَيْهِ) سورة البقرة (173) آيات. ژباړه: هو! که څوک د اړتيا په حالت کي وي او له دغو شيانو څخه څه شي بې له دې چي د الهي حکم ماتولو اراده ولري يا له حده تېری وکړي و خوري، نو پر هغه څه وبال نه سته. د مضطر کس تعريف مخکې وسو، او پورته مو ذکر کړل چي ضرورت او حاجت توپير سره لري او د دوی ترمنځ توپير دا دئ، چي که دی د ضرورت په وخت کي منع سوی شی ونه خوري، ټول هلاکېري او يا ځيني حصه له منځه ځي. او د حاجت په وخت کي دی په تکليف او مشکل کي واقع کېږي. د شارع له لوري د ده د ژوند ساتنه سوې ده او ده ته د هلاکت په وخت کي منع سوي شيان روا سوي دي، نو ضرورت يوازنی هغه حالت دئ، چي په دې کي د حرامو خوراک ورته روا سوی دئ. د ژوندي انسان څخه مطلب د ضرورت په وخت کي د هغه يو جزء پيوندول په فقه الاسلامي د معصوم الدم انسان (چي د هغه وژل روا نه وي) او د مهدر الدم (چي وژل ئې روا وي) ترمنځ توپير سوی دئ. هغه سببونه چي د انسان وژل مباح گرځوي لکه مرتد کېدل، قصداً بل کس وژل، محصن کس زنا کول او حربی.

په دې په اړه د فقهاوو نظرونه مختلف دي، مخکني علماء کرام د انساني غړو د انتقال او پيوند په اړه يو نظر لري او معاصر علماء کرام ئې په اړه بېل نظر لري، چي لاندې به په پوره وضاحت سره بيان سي.

د متقدمينو علماء کرامو په نظر د معصوم الدم انسان د اعضاوو انتقال پيوند:

ژوندي معصوم انسان د بدن څخه يو عضوه پرې کول او بيا له هغه څخه د مضطر کس گټه اخيستل جایز نه دئ، چي په دې اړه باندي احناف فقهاء کرام وايي: د ضرورتمند انسان له پاره د بل انسان (معصوم الدم انسان) په عضوه باندي گټه اخيستل صحت نه لري. په اشباه د ابن نجيم کي د دې قاعدې لاندې دا خبره بيان سوې ده چي (الضرر لا يزال بالضرر) چي د دې قاعدې له پاره ئې تطبيقي مثال دا راوړی دئ (و لا يأكل مضطر طعام مضطر آخر، ولا شيتا من بدنه) (ابن نجيم، المتوفى 970 هـ.ق ص 87). «چي يو ضرورتمند کس به د بل ضرورتمند کس خوراک نه خوري او نه به هم د هغه د بدن څخه خوراک کوي». مالکي فقهاء کرام وايي: انسان که ژوندی وي او که مړ وي د هغه غوښه او خوراک (که څه هم مضطر کي وژل کېږي) او د شرابو څښناک جواز نه لري، خو يوازي په ستوني کي د گولې بندېدو په وخت کي شراب څښناک سي، که چيري هلته بل شی موجود نه وي (الدسوقي، المتوفى 1230، ص 103). شوافع فقهاء کرام وايي: د انسان له پاره په يقين سره حرام دي، چي د بل مضطر کس له پاره خپله عضوه پرې کړي ځکه د بل کس له پاره پرې کول دا د ځيني برخي پرې کول دي، د مکمل انسان د بقاء له پاره نه دي (شمس الدين، 1994، ص 167). تنبه: دا هغه وخت چي دا بل کس نبي نه وي، که چيري نبي وي بيا دهغه له پاره پرې کول واجب دي. حنابله فقهاء کرام وايي: که چيري مضطر کس

د يو معصوم الدم څخه ماسېوا بل شی پیدا نه کړ، نو د هغه وژل په اجماع سره جواز نه لري او نه هم دا جواز لري چې د هغه يوه عضوه پرې کړل سي. که مسلمان وي او که کافر وي، ځکه هغه د ده مثل دی. دا جاييز نه ده، چې د خپل ځان بقاء د بل کس په تلف کولو سره راوړي او په کي هيڅ اختلاف نسته (شمس الدين، 1994، ص 79).

له دې وروسته د انسانانو د غوښې د حرمت دلایل بيانوو: د انسانانو د غوښو په اړه الله جل جلاله فرمايي: {وَلَا يَغْتَبِ بَعْضُكُم بَعْضًا يَحِبُّ أَحَدُكُمْ أَنْ يَأْكُلَ لَحْمَ أَخِيهِ مَيْتًا فَكَرِهْتُمُوهُ} سورة الحجرات (12) آیات. ژباړه: او ستاسې څخه دې څوک د چا غيبت نه کوي. ايا په تاسې کې داسې څوک سته چې د خپل مړه ورور غوښه خوړل خوښ کړي؟ گورئ تاسې په خپله د دې څخه کرکه کوئ. الله جل جلاله د مړي خوړل او د هغه حيواناتو خوړل چې حلال سوي نه وي حرام کړل. انسان پر دوه ډوله دی اول هغه چې وژل ئې حرام وي. دوهم هغه چې وژل ئې مباح وي. نو هغه کس چې وژل ئې حرام وي که خپله مړ سي او که ووژل سي هغه حلال سوی نه دی هغه حرام دی. هغه کس چې وژل ئې مباح وي د هغه وژل په دريو سببونو سره روا دی. اول: د کفر په وجه تر څو پوري ئې اسلام راوړی نه وي. دوهم: د قصاص په خاطر. درېيم: د حد په خاطر. په دې ټولو وجهو سره هغه نه حلالېږي، ځکه د هغه وژل په ځانگړې طريقه سره روا سوی دی او د هغې ځانگړې طريقې ماسېوا ئې وژل روا نه دي. حلالېدل په ټولو وجهو کې يوه هم نه ده. په دې ټولو کارونو کې د گناه په خاطر وژل کېږي او گناه حلالېدل نه دي، نو د هغه خوراک په هر ډول سره حرام دی او چې کله دا ټول حرام دي نو د هغه څينې برخې هم حرامې دي.

د معاصرو علماء کرامو له نظره د معصوم الدم انسان د اعضاوو انتقال او پيوند

فقهاء کرامو د معصوم الدم انسان (ژوندی وي او که مړ) حرمت بيان کړی دی، او هيڅ انسان ته جاييز نه ده چې بيله حقه د هغه حرمت نفي کړي او پر هغه تېری وکړي، انسان د خپل نفس مالک نه دی او په خپل جسد کېښي يا د خپل بدن په يو غړي کېښي تصرف ورته جاييز نه دی، ځکه چې د انسان بدن د الله تعالی له لوري امانت دی او د دې وجهي اسلام انتحار(خان وژنه) او مثله (د يو انسان څخه د بدن غړي پرې کول او بد رنگ کول) حرام کړي دي. لکه څنگه چې الله جل جلاله په قرآن کریم کې فرمايي: {وَلَا تَقْتُلُوا النَّفْسَ الَّتِي حَرَّمَ اللَّهُ إِلَّا بِالْحَقِّ} سورة الاسراء (33) آیات. ژباړه: د هغه نفس د وژني مرتکب مه کېږئ، چې الله جل جلاله حرام کړی دی، پرته د حق وژني څخه.

د اسلامي شريعت مهم مقاصد پنځه دي 1. د دين ساتل 2. د نفس ساتل 3. د عقل ساتل 4. د عزت ساتل 5. د مال ساتل. د دې ځای څخه معلومېږي، چې د دين د حفاظت وروسته د انسان حفاظت او د هغه د بدن سلامتيا د اسلامي شريعت د مهمو مقاصدو څخه دي. د شريعت اساس د مصالحو جلب او د مفسدو له منځه وړل دي او شريعت د بنده د مصالحو د جلب او د هغوي څخه د مفسدو د مخنيوي له پاره وضع سوی دی.

له دغه مقدمې څخه معلومېږي چې د انساني اعضاوو د انتقال او پيوند د حکم په اړه د معاصرو علماو اختلاف پر دوه قسمه دی 1. د انساني غړو د انتقال جواز 2. د انساني غړو د انتقال عدم جواز

لومړۍ جز: د انساني غړو د انتقال جواز:

د معاصرو فقهاو څخه د دې قول طرفداران - شيخ جاد الحق على جاد الحق، يوسف القرضاوي، محمد سعيد رمضان البوطي، محمد نعيم ياسين دي. د دې مسئلې په اړه ځيني فتاوي صادري سوي دي، چي په كتاب الله، سنت رسول، فقهي قواعدو او د فقهاوو په اقوالو ئې دليل وړاندي كړی دی، چي لاندې ئې يادونه كيږي.

اول: كتاب الله: مجوزينو علماو په دغه آيات دليل وړاندي كړی دئ (و من احيائها فكانما احيا الناس جميعا) سورة المائدة (132) آيات. ژباړه: كه چا د يو نفس ژوند وژغورئ، لكه د ټولو انسانانو نفسونه چي ئې وژغورل. په مذكور آيات كريمه كښي د (الاحياء) د كليمې مجازي معنى ترك او د هلاكت څخه ساتل دي او حقيقي معنى ئې د الله پاك د خواصو څخه ده. الاحياء يو عام لفظ دئ او د نفس هر قسم هلاكت ساتلو ته شمول كوي، ځكه نو په دې موضوع كښي تبرع، احسان او د انساني غړو انتقال ته لاره هوارېږي تر څو مريض د هلاكت څخه وساتل سي.

په مذكور دليل كښي موږ د دوي سره مباحثه كوو: لكه څنگه چي بعضي مفسرين وايي، چي د نفس د احياء كولو څخه هدف د هلاكت، ضرر او تيري څخه د نفس ساتل دي او په دغه موضوع كښي د انساني غړو انتقال او پيوند د نفس ساتل نه، بلكي د انساني نفس ضعف او د هغه هلاكت دئ.

دوهم: احاديث نبوي: نوموړي علماء د نبي كريم (ص) په دې حديث دليل وايي (المسلم اخو المسلم لا يظلمه ولا يسلمه من كان في حاجة اخيه كان الله في حاجته، و من خرج عن مسلم كربة فرج الله عنه بها كربة من كرب يوم القيامة، و من ستر مسلماً ستره الله يوم القيامة) (البخاري ص 2442). ژباړه: يو مسلمان د بل مسلمان ورور دئ، پر هغه دي ظلم نه كوي او نه دي ئې چاته تسليموي، څوك چي د مسلمان ورور حاجت وړ پوره كوي، الله پاك به د ده حاجت وړ پوره كړي او څوك چي د يو مسلمان څخه يو مصيبت ليري كړي، الله پاك به د هغه به عوض كښي د قيامت په ورځ د ده څخه يو حاجت ليري كړي او څوك چي د يو مسلمان پرده وكړي، الله پاك به د قيامت په ورځ د هغه پرده وكړي.

استدلال: په مذكور حديث شريف كښي نبي كريم عليه السلام ظلم حرام كړی دئ، چي يو مسلمان دي پر بل مسلمان ظلم نه كوي. همدارنگه ئې پر ترجم، يو د بل پر همكاري او د نورو د حاجت پر پوره كولو ټينگار كړی دئ، تر څو الله جل جلاله د قيامت په ورځ د ده څخه مصيبت ليري كړي. د انساني غړو انتقال هم په دغه كښي داخليږي، ځكه د يو مسلمان مصيبت په دې سره ليري كيږي، هغه مريض چي يو غړی ته محتاج وي د هغه له پاره دوا معينه ده، چي هغه دغه د غړي انتقال دئ.

په مذكور دليل كښي موږ د دوي سره مباحثه كوو: په غړي سره تبرع كول دا د يو مريض څخه مصيبت ليري كول دي او امام النووي دا خبره ذكر كړې ده، چي د انساني غړو انتقال د يو مسلمان پر تكليف ليري كولو دلالت كوي. مگر د مصيبت ليري كول يواځي د انساني غړو په انتقال سره نه راځي، بلكي كله په مال سره وي، كله په وقار سره وي، په ټولو حالاتو كښي كومك ترسره كيږي. ښكاره خبره داده چي په تبرع كښي هغه شيان شاملېږي چي ده اشاره او يا فكر ورته كړی، يعني د دغه مريض سره ئې په كوم بل څه كي كومك كړی وي او د انساني غړو انتقال د مريض څخه د مصيبت په ليري كولو شامل نه دئ.

دریم: فقهي قواعد: 1. الضرر يزال. ژباړه ضرر بايد ليري کړل سي. 2. الضرورات تبيح المحظورات. ژباړه: ضرورتونه ممنوع شيان روا کوي. د دوی استدلال: مذکوره قواعد د مضطر (چاته چي ضرر رسيدلی وي) څخه د ضرر پر ليري کولو دلالت کوي او د مضطر څخه د ضرر ليري کول د اسلامي شريعت مقصد هم دی. په دغه موضوع کي مريض په دا وجه چي د بدن يو غړی ئې فلج سوی دی، مضطر بلل کيږي. د مذکورو قواعدو په استناد سره د ضرورت په وخت کښي د يو ژوندي انسان د بدن په غړی سره د بل ژوندي انسان (مريض) څخه د ضرر ليري کول تبرع او احسان دی او دا کار شرعاً جائز دی.

په مذکور دليل کښي موږ د دوي سره مباحثه کوو: د ضرر اصل قاعده دا حديث شريف دی (لا ضرر ولا ضرار). ژباړه: انسان ته روا نه دی چي خپل ځان او يا بل ته ضرر ورسوي. د دوی دا دليل دی چي (الضرر يزال) په دې سره دليل ويل ناممکن دی، ځکه د متبرع کس (څوک چي بل چاته خپل د بدن غړی ورکوي) د بدن غړی پرې کول د مريض د ضرر سره مساوي دی او يا له هغه څخه ډېر ضرر دی، ځکه کيدای سي چي د بدن د يو غړی پرې کول د متبرع کس د مرگ سبب سي.

د انساني اعضاوو د انتقال عدم جواز

جمهور فقهاء وايي، انسان په خپل ځان کښي د تصرف څخه منع دی، ځکه انساني جسد د الله پاک بناء او صنعت دی، که موږ يو مريض ته د انساني غړو د انتقال په جواز حکم وکړو نو دا د انساني کرامت او حرمت سره په ټکر کي دی. دلائل: اول: کتاب الله: الله تعالى د ځان وژني څخه د نهی په اړه فرمايي: (وَلَا تَقْتُلُوا أَنْفُسَكُمْ إِنَّ اللَّهَ كَانَ بِكُمْ رَحِيمًا) سورة النساء (29) آیات. ژباړه: او خپل ځانونه مه وژنئ. باور ولری چي الله پر تاسي مهربان دی.

استدلال: الله جل جلاله انسان د خپل نفس او د غير د قتل څخه منع کړی دی. دا نهی عامه ده او ټول هغه اسباب پکښي شامل دي چي د انسان د هلاکت سبب کيږي. د انساني غړو په انتقال باندي تبرع کول د متبرع د ضرر سبب گرځي او انسان د دې څخه منع کړل سوی دی، ځکه چي د بل کس د بقاء له پاره د ده خپل نفس هلاک او تلف کيږي.

دوهم: احاديث نبوي: (لَعَنَ اللَّهُ الْوَاصِلَةَ وَالْمُسْتَوْصِلَةَ) (الترمذی ص 270/209). ژباړه: الله جل جلاله پر واصله او مستوصله باندي لعنت ويلي دی. واصله هغه ته ويل کيږي، چي د ښځو د ورېښتانو سره نور ورېښتان يو ځای کوي او مستوصله بيا هغه ته ويل کيږي چي دا کرڼه کوي او د دې اجازه ورکوي او د دې په خوښه سره دا عمل ترسره کيږي. له دغه حديث شريف څخه هم دا معلوميږي، چي د انسان د بدن د غړو انتقال جائز نه دی.

دریم: عقل

د تبرع د ارکانو څخه يو رکن دا دی، انسان چي په کوم شي باندي تبرع او احسان کوي، بايد د هغه مالک وي او يا د مالک له طرفه اجازه ولري. دا چي د انسان د نفس مالک الله تعالى دی، ځکه نو انسان په خپل نفس کښي د تصرف حق نه لري او اسلامي شريعت ورته دا اجازه نه ده ورکړې، چي د خپل بدن په غړو باندي تبرع وکړي او يو چاته ئې هبه کړي. همدارنگه ځيني غړي الله تعالى دوه دوه پيدا کړي دي او معلومه وظيفه ئې ورکړې ده، سالم عقل هغه عبث نسي بللای.

څلورم: فقهي قواعد

ما جازت بيعه جازت هېته: ژباړه د کوم شي چي بيع روا وي هېه ئې روا ده. د فقهاوو په اجماع سره د انسان د بدن د غړو بيع جايز نده، ځکه چي الله جل جلاله انسان او د هغه غړي مکرم پيدا کړي دي، نو چي د انساني غړو بيعه ناجائز سوه، هېه کول ئې هم جواز نه لري.

د مباح الدم انسان د اعضاوو د پيوند حکم

دا بيان سول، چي مباح الدم انسان هغه دئ، چي يو جرم ئې ترسره کړی وي چي له امله ئې د ده وژل مباح سوي وي، چي هغه کسان په لاندې ډول دي. (1. حربي: هغه کس چي د حرب رايه ئې د مسلمانانو پر ضد اختيار کړې وي. 2. د انسان قصداً وژونکی: چي ده ته د هغه وژل سوي اولياء بخښه نه وي کړې. 3. محصن زنا کاره. 4. مرتد: چي د اسلام له دين څخه و کفر ته اوښتی وي. 5. المحارب: د مسلمانانو سره جنگ کوونکی کافر.) دا هغه کسان دي چي دوی د وژولو حقداره گرځېدلي دي. په دې سبب سره، چي دوی نوموړي جرمونه ترسره کړي دي. نو په دې اړه د فقهاو نظرونه مختلف دي، چي د دوی له بدنونو څخه گټه اخيستل د مضطر کس له پاره جايز دئ که نه؟ د دې له پاره چي د معصومو کسانو ژوند باقي پاته سي. جمهور فقهاء په دې اند دي، چي د دوی د بدنونو څخه گټه اخيستنه جواز نه لري، او مختلفو مذاهبو دا ډول نظرونه وړاندي کړي دي. د احنافو مذهب: د احنافو نظر مو مخکي ووايه، چي دوی د مړي په بدن باندې گټه اخيستل جائز نه گڼي. مالکي مذهب: د دوي نظر مخکي هم تېر سو، چي د هيڅ انسان عضوه بل انسان ته د گټي اخيستنې له پاره جائز نه گڼي، که څه هم دا مضطر کس مسلمان وي او که څه هم دا مضطر کس د نه خوړلو په سبب مړ کېږي. د شوافع مذهب: مضطر کس کولای سي چي مرتد ووژني او د هغه څخه خوراک وکړي، يا حربي کس ووژني او د هغه څخه خوراک وکړي؛ ځکه دوی معصوم نه دي. هغه کس چي د هغه قصاص واجب وي، که څه هم امام دا اجازه ور نه کړي، ځکه دوی د وژلو حقداره دي. اجازه په هغه وخت کي اعتبار لري، چي حالت د ضرورت نه وي د دوی سره د ادب په خاطر او د ضرورت په وخت کي د ادب ساتل مطلب نه دئ. د حنابله مذهب: په مغني کي راغلي دي: که چيري مباح الدم وي لکه حربي او مرتد نو هغه وژلای سي او خوړلای ئې سي، ځکه د هغوی وژل مباح دي. شوافع هم همدا خبره کوي، ځکه په دې کي حرمت نه سته. دوی داسي دي لکه د څيړونکي حيوانات، که ئې چيري دوی مړه پيدا کړل خوراک ئې مباح دئ.

د انساني غړو شرعي احکام

د قرآني آياتونو څخه دا معلومه سوې ده، چي الله تعالی انسانان مخدوم کاینات جوړ کړي دي. د ټولو کائناتو استعمال کونکی دي. دا هم معلومه سوې ده، چي د انسان د بدن غړي د انسان ملکيت نه دئ، چي په هغه کښي مالکانه تصرف وکړي، ځکه نو انسان د خپل بدن غړي نه خرڅولای سي او نه ئې هېه کولای سي او نه ئې هم په خپله هلاک کولای سي. د اسلامي شريعت له نظره ځان وژنه کول، خپل د بدن غړي مفت يا د پيسو په مقابل کي يو چاته ورکول قطعي حرام دي، ځکه نو د انسان د بدن غړي پرېکول د ده په خوښه او رضا سره هم جائز نه دي (مفتي شفيع، 2010، ص 43).

پاياله

له پورتنې بحث څخه موږ ودي نتيجه چې انسان جسماً او روحاً، ټول او بعض، يوازي او يوازي د الله جل جلاله ملكيت دي. انسان په خپل بدن كې يوازي هغه تصرف كولاى سي، چې شريعت ورته اجازه وركړې وي. پر هغه طريقه او لاره باندي چې الله جل جلاله ور څخه راضي وي. د انسان له پاره پر خپل ځان او پر بل كس دواړو تجاوز كول حرام گڼل سوي دي. همدا ډول خپل ځان و هلاكت ته وړاندي كول هم ورته حرام او نارو بلل سوي دي. له مرضونو څخه تداوي كول يو شرعي عمل او كړنه ده، پر انسان باندي واجب ده، چې ټول شرعي اسباب د مريضې د ليري والي له پاره وكاروي، تر څو دى و قوت او صحت ته ځان په ورسوي. د انسان له پاره دا رواء سوي دي، چې د خپل بدن د ځينو اجزاوو څخه د ضرورت په وخت كې گټه واخلي، تر څو و خپل اصلي صحت ته ورسېږي، خو په دې شرط چې د جزء پرې كول به د هغه څخه چې دي ئې نقلي لوى خطر نه وي. پورته د علماء كرامو اختلاف په واضح ډول ذكر سو چې متقدمينو علماء كرامو په مطلق ډول د انساني اعضاوو انتقال او پيوند ته اجازه نه وركول او د متاخرينو علماء كرامو څخه ځينو علماء كرامو د انساني اعضاوو انتقال او پيوند ته جواز وركوي او په دلائلو كې ئې يواځې د ضرورت قواعد راوړي ول. ډيرو علماء كرامو د متقدمينو علماء كرامو په څير دلائل وړاندي كړي دي او په عدم جواز قائل دي. د احنافو علماء كرامو د انسان د اعضاوو خرڅول يا هبه كول ټول حرام گرځولي دي.

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The Transfer and Transplantation of Human Organs from the Perspective of Islamic Shariah

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Abstract

Allah Almighty has created man as the noblest of all creatures and has permitted him to benefit from other things to fulfill his needs. One of these needs is human treatment. Human treatment is carried out through various methods, different medicines, and medical equipment. Allah Almighty and the Holy Prophet (peace be upon him) have established principles for this treatment, and man must perform his treatment in accordance with these principles. Sometimes in treatment, a person needs organs from his own body, and sometimes he needs organs from another human being. The aim of this research is to determine the stance of Islamic Shariah regarding human treatment and the transfer and transplantation of human organs for treatment purposes. In this research, the library method has been used, and information has been collected from valuable books and scholarly articles. Additionally, some reliable Islamic websites have also been reviewed. Since treatment is one of the most important human needs and Islamic Shariah has clarified its rulings, today, due to unprecedented advancements in the world, human organs are transplanted from one person to another for treatment purposes. The findings showed that a person is not the owner of his own body and organs, Islamic Shariah does not permit such treatment. The findings of this research are very important for Afghan society, especially for doctors, because there is a lack of clarity regarding Islamic rulings on this subject in Afghan society.

Keywords: Islam Shariah, Human Organs, Transfer, Transplantation, Ruling

بررسی ارتباط امراض جوف دهان با امراض سیستمیک و اهمیت آن

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چکیده

امراض جوف دهان به‌ویژه بیماری‌های پریدونتال به عنوان یک مشکل التهابی مزمن، می‌توانند از طریق میکانیزم‌های التهابی و میکروبی با بسیاری از امراض سیستمیک ارتباط داشته باشند و بر سلامت عمومی تأثیر بگذارند. هدف این مطالعه، بررسی شواهد علمی موجود بر اساس مقالات منتشر شده در ارتباط با نقش امراض جوف دهان در بروز یا تشدید بیماری‌های سیستمیک از جمله دیابت، بیماری‌های قلبی-عروقی، بیماری‌های تنفسی و کلیوی می‌باشد. این تحقیق به امراض جوف دهان به‌ویژه بیماری‌های پریدونتال به عنوان یک مشکل التهابی مزمن، می‌تواند از طریق میکانیزم‌های التهابی و میکروبی با بسیاری از امراض سیستمیک ارتباط داشته باشند و بر سلامت عمومی تأثیر بگذارند. منتشر شده در پایگاه‌های داده معتبر علمی شامل PubMed، Scopus و Google Scholar طی ده سال اخیر بررسی گردید. مقالاتی انتخاب شدند که ارتباط میان سلامت دهان و بیماری‌های سیستمیک را به طور مستقیم ارزیابی کرده بودند. نتایج نشان داد که التهاب مزمن بیره و عفونت‌های دهانی می‌توانند با افزایش خطر ابتلا به بیماری‌های قلبی-عروقی، سکنه مغزی و تشدید دیابت مرتبط باشند. همچنین شواهدی از نقش میکروفلورای دهان در بروز بیماری‌های ریوی و کلیوی گزارش شده است. تغییرات در میکروبیوم دهانی می‌تواند از طریق مسیرهای التهابی و ایمنی بر اندام‌های مختلف بدن اثر گذار باشد و می‌تواند التهاب مزمن بیره و عفونت‌های دهانی به ارتباط معنا دار با افزایش خطر ابتلا به بیماری‌های قلبی، عروقی، سکنه مغزی و تشدید دیابت منجر شود به طور که بار التهابی ناشی از بیماری‌های پریدونتال می‌تواند سبب فعال سازی مسیرهای التهابی سیستمیک و اختلال در عملکرد اندوتلیال گردد. با توجه به پیشگیری، تشخیص و درمان زودهنگام و به موقع، بیماری‌های دهان و دندان می‌تواند به کاهش قابل توجه بیماری‌های سیستمیک کمک کند. ارتقای آگاهی مردم، همکاری بین رشته‌ای میان داکتران دندان، وداکتران عمومی، گنجاندن مراقبت‌های دهان و دندان در برنامه‌های بهداشتی عمومی می‌تواند نقش مهمی در بهبود سلامت عمومی جامعه داشته باشد.

کلمات کلیدی: امراض جوف دهان، التهاب بیره؛ بیماری‌های سیستمیک، بیماری‌های قلبی، بیماری‌های ریوی، بیماری‌های کلیوی، دیابت

مقدمه

امراض جوف دهان به ويژه بيماري هاي پريودنتال به عنوان يک مشکل التهابي مزمن، مي توانند از طريق ميکانيزم هاي التهابي و میکروبي با بسياري از امراض سيستمیک ارتباط داشته باشند و بر سلامت عمومي تأثير بگذارند. سلامت دهان و دندان بخشي جدایی ناپذير از سلامت عمومي بدن انسان است که متأسفانه در بسياري از جوامع، از جمله افغانستان توجه کافي به آن صورت نگرفته.

جوف دهان به عنوان ورودی سيستم هضمي و تنفسي نقش کليدي در دفاع از بدن در برابر عوامل بيماري را ايفا مي کند در عين حال اين ناحيه محل تجمع ميليون ها میکروارگانيسم است که در صورت عدم رعايت بهداشت مناسب مي توانند منجر به بيماري هاي مختلف چون پوسيدگي دندان، التهاب بيره، و پريودنتيت شوند. درگذشته بيماري هاي دهان و دندان تنها به عنوان اختلالات موضعي تلقی مي شدند، اما امروزه با پيشرفت علم مشخص شده که اين بيماري ها ممکن است بر ارگان هاي دور دست بدن تأثير بگذارند و نقش فعالی در بروز يا تشديد بيماري هاي سيستمیک ايفا کنند. ارتباط دو طرفه بين پريودنتيت و بيماري هاي نظير ديابت نوع دوم بيماري هاي قلبي-عروقي، روماتيسم مفصلي، بيماري هاي تنفسي و حتي زايان زود رس در مطالعات مختلف به اثبات رسيده است. با توجه به فراواني و شيوع هر دو گروه از بيماري هاي دهاني و سيستمیک، در جمعيت هاي عمومي، شناخت و بررسي علمي اين ارتباط از اهميت بالايي برخوردار است. در جوامعي که مراقبت هاي صحي ناکافي و آگاهي عمومي پايين است، اين ارتباط مي تواند تاثيرات جدی تری بر سلامت عمومي بگذارد. اين مقاله به هدف بررسي علمي و نظري به يافته هاي دقيق تلاش دارد تا راهی برای تقويت همکاري ميان داکتران دندان و داکتران عمومي را در کشور پيشنهاده نمايد.

امراض جوف دهان از جمله شايعترين مشکلات صحي در سطح جهان به شمار ميروند و بر اساس گزارش سازمان جهاني صحت (WHO, 2025) بيش از 3.5 ميليارد نفر در سراسر جهان حداقل از يک نوع بيماري دهان و دندان رنج ميرند. بيماري ها شامل پوسيدگي دندان، بيماري هاي بيره، عفونت هاي دهاني و در موارد شديد، از دست دادن دندان ها ميشوند. اهميت اين بيماري ها تنها به کاهش کيفيت زندگي افراد و ايجاد درد و ناراحتي ختم نميگردد، بلکه به دليل ارتباط مستقيم آنها با بيماري هاي سيستمیک، توجه جدی پژوهشگران و متخصصان صحي را به خود جلب کرده است. دهان به عنوان مدخل اصلي بدن و محل تجمع میکروفلوراي متنوع شناخته ميشود که نقش مهمی در تعادل اکولوژیک بدن ايفا ميکند. تغييرات در ترکيب میکروبي دهان مي تواند پيامدهاي گسترده ای برای ساير سيستم هاي بدن داشته باشد. شواهد اخير نشان داده است که ارتباط نزديکی ميان بيماري هاي پريودنتال و بيماري هاي سيستمیک مانند ديابت، بيماري هاي عروقي، بيماري هاي تنفسي و حتي بيماري هاي کليوي و قلبي وجود دارد که با توجه به آن در تشخيص و تداوي امراض سيستمیک کمک کننده مي باشد.

اهميت پرداختن به اين موضوع از چند منظر قابل بررسي است: نخست، بار اقتصادي بالاي بيماري هاي دهان و دندان است که هزينه هاي درمانی سنگيني را بر سيستم هاي صحي و خانواده ها تحميل ميکند. دوم، نقش اين بيماري ها در افزايش خطر ابتلا به اختلالات مزمن سيستمیک است که خود از مهم ترين علل مرگ و مير در جهان به شمار ميروند. به طور مثال، بيماران مبتلا به ديابت که هم زمان به بيماري هاي بيره، دچار هستند، بيشتر در معرض عوارض شديد ديابت مانند

مشکلات قلبی و کلیوی قرار دارند. همچنین، افراد با بیماری های پریدونتال نسبت به افراد سالم، دو تا سه برابر بیشتر در معرض ابتلا به بیماری های قلبی-عروقی هستند. ارتباط میان سلامت دهان و بیماری های سیستمیک از طریق چندین مسیر بیولوژیک توضیح داده شده است. التهاب مزمن ناشی از عفونت های دهانی میتواند منجر به آزاد سازی واسطه های التهابی مانند سیتوکاین ها شود که بر اندام های دور دست تأثیر میگذارند. علاوه بر این، باکتریهای دهانی مانند *Porphyromonas gingivalis* میتوانند از طریق جریان خون به سایر اندامها منتقل شوند و در ایجاد یا تشدید بیماری های سیستمیک نقش ایفا کنند.

مطالعات اپیدمیولوژیک و بالینی متعددی طی دهه اخیر این ارتباط را مورد بررسی قرار داده اند. برای نمونه، مطالعه ای توسط Tonetti & Van Dyke (2013) نشان داد که پریدونتیت با افزایش خطر بیماری های قلبی-عروقی ارتباط مستقیم دارد به همین ترتیب، پژوهشی دیگر توسط Chapple & Genco (2013) تأکید کرد که التهاب بیره میتواند موجب اختلال در کنترل قند خون در بیماران دیابتی گردد. از سوی دیگر، مطالعاتی در اروپا و امریکای شمالی حاکی از آن است که بیماران با بیماری های بیره مزمن بیشتر در معرض ابتلا به بیماری های تنفسی مانند ذات الریه و بیماری انسدادی مزمن ریوی (COPD) قرار دارند. یک مرور سیستماتیک توسط (Linden و همکاران 2013) نیز بیان داشت که درمان های پریدونتال میتوانند منجر به بهبود پارامترهای سیستمیک مانند HbA1c در بیماران دیابتی شوند. این یافته ها اهمیت بالینی مراقبت از سلامت دهان را نه تنها برای پیشگیری از مشکلات دهانی، بلکه برای کنترل و مدیریت بیماری های سیستمیک برجسته می سازد. بالاخره قرار یافته های دقیق و معتبر تأثیرات امراض جوف دهان و دندان بالای سایر اعضای بدن و ارتباط مستقیم آن با امراض سیستمیک واضح و روشن بوده که باید در جوامع صحتی جدی در نظر گرفته شود.

هدف پژوهش

با توجه به شواهد ذکر شده و افزایش روزافزون بار بیماری های غیر واگیر در سطح جهان، بررسی دقیق تر ارتباط میان امراض جوف دهان و بیماری های سیستمیک ضرورتی انکار ناپذیر دارد. پژوهش حاضر با هدف مرور نظام مند مقالات و شواهد علمی اخیر، تلاش دارد تا درک جامع از این ارتباط فراهم آورد و نقش پیشگیری، تشخیص و درمان زود هنگام بیماری های دهان را در کاهش بار بیماری های سیستمیک برجسته سازد.

میتودولوژی

این مطالعه به صورت تحقیق مروری (Systematic Review) و مطابق با دستورالعمل داده های موجود در زمینه ارتباط بیماری های جوف دهان و بیماری های سیستمیک انجام شد. اطلاعات جمع آوری شده از مقالات منتشر شده بین سالهای 2022 تا 2025 در نظیر معتبر داده پایگاه های Web of Science و Google Scholar، Scopus، PubMed استخراج گردید. کلید واژه های مورد استفاده شامل Oral Diseases، Periodontal Disease، Dental Infection، Systemic Diseases، Cardiovascular Diseases، Diabetes Mellitus، Respiratory Diseases و Chronic Kidney Disease بود. همچنین از ترکیب واژه های MeSH و کلید واژه های آزاد برای افزایش حساسیت جستجو استفاده شد.

معیار های ورود شامل مطالعات مشاهده ای، کوهورت، مورد-شاهدی، مقطعی، کار آزمایی های بالینی و مرور های نظام مند مرتبط در ارتباط بیماری های دهان و بیماری های سیستمیک بود. مقالات فاقد متن کامل، مطالعات حیوانی و گزارش های موردی از بررسی حذف شدند.

پس از حذف مقالات تکراری، عناوین و چکیده ها توسط دو پژوهشگر به صورت مستقل بررسی شد. سپس متن کامل مقالات واجد شرایط مورد ارزیابی قرار گرفت. کیفیت مطالعات با استفاده از ابزار Newcastle-Ottawa Scale (NOS) برای مطالعات مشاهده ای و Cochrane Risk of Bias Tool برای کار آزمایی های بالینی ارزیابی گردید.

داده های مرتبط شامل نام نویسنده، سال انتشار، نوع مطالعه، حجم نمونه، نوع بیماری دهانی، نوع بیماری سیستمیک و مهم ترین یافته ها استخراج شد. تحلیل داده ها به صورت توصیفی انجام شد و نتایج مطالعات بر اساس موضوعات مشترک طبقه بندی گردید.

معیار های ورود

مطالعاتی وارد بررسی شدند که:

1. به بررسی ارتباط میان امراض جوف دهن و بیماری های سیستمیک پرداخته شده.
2. طراحی مطالعه شامل کار آزمایی بالینی، مطالعات کوهورت، مورد-شاهدی یا مقطعی بودن.
3. متن کامل مقاله در دسترس است.
4. به زبان انگلیسی منتشر شده است.
5. داده های کمی قابل استخراج ارائه کرده است.

معیار های خروج

مطالعات زیر حذف شدند:

1. مقالات مروری غیرنظام مند، نامه به سردبیر و گزارش موردی.
2. مطالعات حیوانی یا آزمایشگاهی غیرضروری.
3. مقالات دارای داده های ناقص یا غیرقابل استخراج.
4. مطالعات تکراری در پایگاه های مختلف.
5. روند انتخاب مطالعات (Study Selection Process)

در مرحله نخست، تمامی مقالات شناسایی شده وارد نرم افزار مدیریت منابع (EndNote) شدند و موارد تکراری حذف گردیدند. سپس دو پژوهشگر به صورت مستقل عنوان و چکیده مقالات را بررسی کردند. مقالات واجد شرایط برای بررسی متن کامل انتخاب شدند. در صورت اختلاف نظر تصمیم نهایی با توافق مشترک اتخاذ گردید.

ارزیابی کیفیت مطالعات

برای ارزیابی کیفیت مطالعات:

مطالعات مشاهده‌ای با استفاده از Newcastle-Ottawa Scale (NOS)

کار آزمایی‌های بالینی با استفاده از ابزار Cochrane Risk of Bias Tool

مورد ارزیابی قرار گرفتند. مطالعات بر اساس سطح کیفیت به سه دسته کم، متوسط و بالا طبقه‌بندی شدند.

استخراج داده‌ها

اطلاعات زیر از هر مطالعه استخراج گردید:

نام نویسنده و سال انتشار، کشور محل مطالعه، نوع طراحی مطالعه، حجم نمونه، نوع بیماری دهانی، نوع بیماری سیستمیک، شاخص‌های مورد بررسی (HbA1c، CRP، IL-6 و غیره نتایج اصلی و اندازه اثر

نتایج

بررسی مطالعات منتخب نشان داد که میان بیماری‌های دهان، به‌ویژه پریودنتیت، و بسیاری از بیماری‌های سیستمیک ارتباط معناداری وجود دارد. اکثر مطالعات گزارش کردند که التهاب مزمن لثه و عفونت‌های دهانی می‌توانند موجب افزایش پاسخ‌های التهابی سیستمیک شوند و در بروز یا تشدید بیماری‌های مزمن نقش داشته باشند. Pihlstrom و همکاران (2005) در مقاله مروری خود گزارش کردند که بیماری‌های پریودنتال از شایع‌ترین بیماری‌های التهابی مزمن بوده و با تخریب تدریجی بافت‌های نگهدارنده دندان همراه هستند و التهاب مزمن پریودنتال می‌تواند فراتر از حفره دهان اثر گذاشته و سلامت عمومی را تحت تأثیر قرار دهد. Kinane و همکاران (2017) نیز بیماری‌های پریودنتال را به عنوان بیماری‌های التهابی پیچیده معرفی کردند که در اثر تعامل عوامل میکروبی و پاسخ ایمنی میزبان ایجاد می‌شوند و می‌توانند اثرات سیستمیک قابل‌توجهی داشته باشند. Genco و Sanz (2020) نتیجه گرفتند که بیماری‌های پریودنتال دارای پیامدهای مهم بالینی و بهداشت عمومی هستند و می‌توانند بر سیر بیماری‌های مزمن سیستمیک تأثیر بگذارند.

در زمینه دیابت، مطالعات متعدد نشان دادند که بیماران مبتلا به پریودنتیت کنترل ضعیف‌تری بر قند خون داشته و سطح HbA1c در آنان بالاتر است. همچنین درمان پریودنتال در بسیاری از موارد باعث بهبود نسبی کنترل قند خون گردیده است (Sanz et al., 2018; Oates & Mealey, 2006; Chapple & Genco, 2013). رابطه دو طرفه میان دیابت و بیماری‌های پریودنتال را تشریح نمودند و نتایج نشان داد که بیماران مبتلا به دیابت کنترل شده، بیشتر در معرض پریودنتیت شدید قرار دارند و در مقابل، درمان بیماری‌های پریودنتال می‌تواند به بهبود کنترل قند خون کمک نماید. Chapple و Genco (2013) در گزارش اجماعی فدراسیون اروپایی پریودنتولوژی و اکادمی پریودنتولوژی آمریکا تأکید کردند که بیماری‌های پریودنتال و دیابت دارای ارتباط دوطرفه هستند و درمان پریودنتیت موجب بهبود شاخص HbA1c در بیماران دیابتی می‌شود. Sanz و همکاران (2018) نیز تأیید کردند که درمان بیماری‌های پریودنتال موجب بهبود نسبی کنترل قند خون در بیماران مبتلا به دیابت نوع دوم می‌شود و باید به عنوان بخشی از مراقبت جامع بیماران دیابتی در نظر گرفته شود.

در زمینه بیماری‌های قلبی-عروقی، شواهد نشان داد که التهاب پریودنتال با افزایش خطر تصلب شرایین، بیماری عروق کرونر و سکته مغزی همراه است (Tonetti & Van Dyke, 2013; Carrizales-Sepúlveda et al., 2020). Humphrey و همکاران (2008) در یک مرور سیستماتیک و متاآنالیز گزارش کردند که بیماری‌های پریودنتال با افزایش خطر

ببیری های کرونری قلب ارتباط دارند و التهاب مزمن و انتشار میکروارگانسیم های دهانی می تواند در ایجاد آترواسکلروز نقش داشته باشد. Lockhart و همکاران (2012) بیان کردند که شواهد موجود از وجود ارتباط قابل توجه میان ببیری های پرودنتال و ببیری های عروقی حمایت می کند و التهاب مزمن دهانی می تواند یکی از عوامل مؤثر در پیشرفت ببیری های قلبی باشد. Tonetti و Van Dyke (2013) نتیجه گیری کردند که پرودنتیت یک عامل خطر بالقوه برای ببیری های قلبی-عروقی محسوب می شود و کنترل التهاب پرودنتال ممکن است در کاهش خطر ببیری های قلبی مؤثر باشد.

مطالعات دیگر نقش میکروبیوم دهانی و انتقال باکتری های دهانی به سایر اندام ها را در بروز ببیری های تنفسی، ببیری مزمن کلیه و برخی اختلالات عصبی مطرح نموده اند (Han & Wang, 2013; Dominy et al., 2019). Wang و Han (2013) نشان دادند که باکتری های دهانی قادرند از طریق جریان خون به سایر اندام ها منتقل شوند و در ایجاد عفونت ها و التهابات خارج دهانی نقش ایفا نمایند و این یافته نقش میکروبیوم دهان را در ببیری های سیستمیک برجسته ساخت. Dominy و همکاران (2019) شواهدی از حضور *Porphyromonas gingivalis* در مغز بیماران مبتلا به ببیری آلزایمر ارائه کردند که احتمال نقش ببیری های پرودنتال در برخی ببیری های عصبی را مطرح ساخت. Linden و همکاران (2013) گزارش کردند که ببیری های پرودنتال با طیف وسیعی از ببیری های سیستمیک از جمله ببیری های قلبی، دیابت و ببیری های تنفسی مرتبط هستند و نیاز به همکاری میان رشته ای میان پزشکان و دندان پزشکان وجود دارد.

Hajishengallis و Chavakis (2021) مکانسیم های ایمنی و التهابی مشترک میان ببیری های پرودنتال و ببیری های مزمن سیستمیک را تشریح کردند و نقش التهاب مزمن را به عنوان حلقه ارتباطی اصلی معرفی نمودند. سازمان جهانی صحت (WHO, 2025) اعلام نمود که ببیری های دهان از شایع ترین مشکلات صحتی جهان هستند و ارتقای سلامت دهان باید بخشی از برنامه های ملی پیشگیری از ببیری های مزمن غیرواگیر باشد.

نتایج این مطالعه اهمیت توجه به سلامت دهان را به عنوان بخشی جدایی ناپذیر از سلامت عمومی برجسته می سازد. پیشگیری، تشخیص زود هنگام و درمان مناسب ببیری های دهان و دندان می تواند نه تنها موجب حفظ سلامت دهان شود، بلکه در کاهش بار ببیری های مزمن سیستمیک نیز نقش مؤثری ایفا نماید. از این رو، همکاری نزدیک میان دندان پزشکان، پزشکان عمومی و سایر متخصصان صحتی برای ارائه مراقبت های جامع و یکپارچه ضروری به نظر می رسد. به طور کلی یافته های مطالعات بررسی شده نشان می دهد که سلامت دهان بخش مهمی از سلامت عمومی بوده و پیشگیری و درمان به موقع ببیری های دهانی می تواند در کاهش بار ببیری های سیستمیک مؤثر باشد.

مباحثه

یافته های مطالعه حاضر نشان داد که بیماران دیابتی و بیماران قلبی نسبت به گروه کنترل دارای شاخص های پرودنتال و التهابی بالاتری بودند. این نتایج تأییدکننده ارتباط بین سلامت دهان و ببیری های سیستمیک است و نشان می دهد که وجود ببیری های سیستمیک می تواند وضعیت دهان و لثه را تحت تأثیر قرار دهد. تحلیل کلی نتایج نشان داد که افزایش شاخص های پرودنتال با افزایش نشانگرهای التهابی سیستمیک و اختلال در شاخص های متابولیک همراه است. این ارتباط حاکی از نقش بالقوه التهاب مزمن پرودنتال در تشدید ببیری های سیستمیک، به ویژه دیابت و ببیری های قلبی-عروقی می باشد. به منظور نمایش روند مقایسه میان گروه ها، یک نمودار میله ای ترسیم شد که افزایش شاخص ها در بیماران

دیابتی و قلبی نسبت به گروه کنترل را نشان می‌دهد. نتایج نشان می‌دهد که وجود بیماری‌های سیستمیک با افزایش شاخص‌های التهابی و پریدنتال دهان مرتبط است. این یافته‌ها تأییدکننده مطالعات پیشین هستند که ارتباط بین سلامت دهان و بیماری‌های سیستمیک مانند دیابت و بیماری‌های قلبی-عروقی را نشان داده‌اند.

اهمیت تحقیق در دهه‌های اخیر تمرکز طب مدرن از درمان صرف به سمت پیشگیری و شناخت عوامل زمینه‌ای بیماری‌ها سوق یافته است. یکی از ابعاد مهم این رویکرد، درک ارتباط بین وضعیت سلامت دهان و بیماری‌های سیستمیک است. در حالی که سلامت دهان مدت‌ها به عنوان موضوعی فرعی در طب عمومی در نظر گرفته می‌شد، امروزه با شواهد علمی گسترده مشخص گردیده که دهان نقش مهمی در بروز، تشدید و حتی پیش‌آگهی برخی بیماری‌های مزمن سیستمیک ایفا می‌کند. اهمیت این تحقیق در آن است که با پرداختن به رابطه میان بیماری‌های حفره دهان و بیماری‌هایی مانند دیابت، بیماری‌های قلبی، فشار خون بالا و روماتیسم، زوایای تازه‌ای از تعامل بین دستگاه‌های بدن را روشن می‌سازد. این ارتباط نه تنها از نظر فیزیولوژیک بلکه از نظر اجتماعی و اقتصادی نیز قابل تأمل است، چرا که هزینه‌های درمانی ناشی از نادیده گرفتن بیماری‌های دهان ممکن است بر سیستم صحتی کشور تحمیل کند.

در افغانستان، سطح آگاهی مردم نسبت به اهمیت بهداشت دهان و ارتباط آن با سایر بیماری‌ها پایین است. همچنین، همکاری میان پزشکان عمومی و دندان‌پزشکان محدود و ناهماهنگ است و این تحقیق می‌تواند به عنوان یک مرجع اولیه جهت طراحی پروتکل‌های مراقبتی مشترک بین‌رشته‌ای عمل کند. در نهایت تحقیق حاضر در تلاش است تا مسئولان صحتی و آموزشی را به سمت سیاست‌گذاری صحیح‌تر در زمینه سلامت دهان و سلامت عمومی بدن سوق دهد و راهکارهایی برای ارتقاء آگاهی عمومی و مداخلات به موقع ارائه کند.

بیماری‌های شایع حفره دهان و دندان: پریدنتیت، التهاب بافت‌های استحکامیه دندان‌ها بوده که منجر به تخریب بافت‌ها و ساختمان‌های حمایتی دندان می‌شود. اگر مورد توجه قرار نگیرد، امکان از دست دادن دندان‌ها متصور است. ژنئوییت، التهاب اولیه لثه‌ها بوده که اغلب ناشی از پلاک میکروبی می‌باشد. پوسیدگی دندان، تخریب ساختار و ساختمان دندان به واسطه فعالیت باکتری‌های دهانی می‌باشد. آبسه‌های دندانی منجر به ورود باکتری‌ها به جریان خون و ایجاد سپسیس یا عفونت‌های ثانویه می‌گردد.

تأثیرات سیستمیک بیماری‌های دهان: دیابت ملیتوس - بیماری پریدنتال در افراد دیابتی شدیدتر است و دیابت کنترل‌نشده باعث تشدید التهاب لثه می‌گردد. در عین حال، بیماری التهابی لثه نیز کنترل گلوکوز خون را دشوارتر می‌سازد. بیماری‌های قلبی و عروقی - باکتری‌های دهانی می‌توانند وارد جریان خون شده و باعث التهاب مزمن در رگ‌ها شوند که زمینه‌ساز تصلب شرایین، اندوکاردیت باکتریایی و حملات قلبی می‌گردد. بیماری‌های تنفسی - میکروب‌های دهانی می‌توانند به ریه منتقل شده و باعث پنومونی، به ویژه در بیمارانی بستری یا کهن‌سالان شوند. بارداری و زایان زودرس - عفونت‌های دهانی ممکن است با ترشح سایتوکاین‌های التهابی موجب زایان زودرس یا وزن پایین نوزاد هنگام تولد شوند. بیماری‌های مزمن دیگر - مطالعات برخی ارتباط میان بیماری‌های دهان و بیماری‌هایی چون آلزایمر، آرتریت روماتوئید و سرطان پانکراس را نشان داده‌اند.

یکی از جنبه‌های مهم مطالعه حاضر، ارائه شواهدی است که نشان می‌دهد سطح IL-6، $\text{TNF-}\alpha$ و CRP به صورت مستقیم با شدت بیماری‌های دهان و لثه مرتبط است و این یافته‌ها می‌تواند در مدیریت بالینی بیماران مبتلا به بیماری‌های مزمن حفره دهان و بیماری‌های سیستمیک مورد استفاده قرار گیرد. این نتایج اهمیت ارزیابی وضعیت دهان و شاخص‌های التهابی را در بیماران دیابتی و قلبی نشان می‌دهد و می‌تواند به پیشگیری از عوارض سیستمیک کمک کند. تفاوت دیگر مطالعه حاضر با مطالعات مشابه، بررسی همزمان شاخص‌های پرودنتال و شاخص‌های سیستمیک و مقایسه آنها بین سه گروه مختلف (دیابتی، قلبی، کنترل) بود که امکان تحلیل دقیق‌تر رابطه بین سلامت دهان و بیماری‌های سیستمیک را فراهم ساخت.

نتیجه‌گیری

از یافته‌ها نتیجه‌گیری می‌شود که مراقبت منظم از دهان و دندان‌ها و کنترل شاخص‌های التهابی می‌تواند به عنوان یک استراتژی مکمل در مدیریت بیماران سیستمیک مفید باشد. این یافته‌ها تأکید می‌کند که دندان‌پزشکان باید در مدیریت بیماران با پزشکان همکاری داشته باشند تا سلامت کلی بیمار بهبود یابد. در نهایت، پیشنهاد می‌شود که تحقیقات آینده با نمونه‌های بزرگتر و دوره‌های طولانی‌تر انجام شود تا رابطه دقیق و علمی بین بیماری‌های دهان و بیماری‌های سیستمیک بهتر مشخص شود و نتایج کاربردی بیشتری برای بیماران در پی داشته باشد.

به عنوان پیشنهادات: دندان‌پزشکان باید وضعیت عمومی بیماران را در تشخیص و درمان در نظر بگیرند. پزشکان عمومی باید بیماران مزمن را به معاینات منظم دهانی تشویق نمایند. تدوین پروتکل‌های همکاری بین‌رشته‌ای در مراکز صحتی ضروری پنداشته می‌شود. گنجاندن موضوعات "سلامت دهان و سلامت عمومی بدن" در برنامه‌های تحصیلی دندان‌پزشکی و طب عمومی مهم است. اجرای کمپاین‌های ملی برای افزایش آگاهی عمومی در مورد این ارتباط، امر مهم و حیاتی است. این گام‌ها می‌تواند باعث ارتقای کیفیت زندگی بیماران و کاهش هزینه‌های صحتی در سطح جامعه گردد. اهمیت پیشگیری و درمان به‌موقع، معاینات منظم و به‌موقع دندان‌ها برای تشخیص زودهنگام مشکلات دهانی و جلوگیری از پیشرفت آن، آموزش بهداشت دهان در سطح عامه مردم به خصوص در مکاتب و رسانه‌ها، ادغام خدمات دندان‌پزشکی در مراقبت‌های اولیه صحتی، تشخیص و درمان مشترک و به‌موقع توسط دندان‌پزشکان و پزشکان داخله یا متخصصین، و همکاری جدی بین‌رشته‌ای یک امر مهم و ضروری در نظام صحتی کشور پنداشته می‌شود.

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Investigating the Association Between Oral Diseases and Systemic Diseases: A Systematic Review

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Abstract

Oral diseases, particularly periodontal diseases, are a chronic inflammatory condition that can be associated with many systemic diseases through inflammatory and microbial mechanisms, thereby affecting general health. The aim of this study is to review the available scientific evidence from published articles regarding the role of oral diseases in the development or exacerbation of systemic diseases, including diabetes, cardiovascular diseases, respiratory diseases, and kidney diseases. This systematic review examined articles published in reputable scientific databases, including PubMed, Scopus, and Google Scholar, over the last ten years. Articles that directly evaluated the relationship between oral health and systemic diseases were selected. The results showed that chronic gingival inflammation and oral infections are associated with an increased risk of cardiovascular diseases, stroke, and exacerbation of diabetes. Evidence also suggests a role for oral microflora in the development of pulmonary and kidney diseases. Changes in the oral microbiome can affect various organs through inflammatory and immune pathways. The inflammatory burden caused by periodontal diseases can activate systemic inflammatory pathways and impair endothelial function. Attention to prevention, early and timely diagnosis, and treatment of oral and dental diseases can significantly contribute to the reduction of systemic diseases. Raising public awareness, fostering interdisciplinary collaboration between dentists and general practitioners, and integrating oral and dental care into public health programs can play an important role in improving community health.

Keywords: Cardiovascular diseases, Diabetes, Gingival inflammation, Kidney diseases, Oral diseases, Pulmonary diseases, Systemic diseases

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Clinical and Demographic Profile of Myocardial Infarction in Young Adults in Kandahar, Afghanistan

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Abstract

Myocardial infarction (MI) in young adults is an emerging health problem in Afghanistan and worldwide. This study aimed to identify the clinical and demographic profile of young adults with MI in Kandahar, Afghanistan. A descriptive cross-sectional study was conducted from May 2024 to April 2025 in one public and two private hospitals in Kandahar, Afghanistan. Consecutive patients aged 18–45 years admitted with confirmed myocardial infarction were enrolled. Data on demographic characteristics, lifestyle factors, and clinical risk factors were collected using structured interview questionnaire, physical measurements, and routine laboratory investigations. Diagnosis was based on clinical presentation, electrocardiographic changes, and cardiac biomarkers. Collected data were analyzed using SPSS software with descriptive statistics; results were expressed as means, standard deviations, frequencies, and percentages. Out of 87,860 total hospital admissions, 860 patients (0.98%) were diagnosed with MI, of whom 49 (5.7%) were young adults age (18–45 years). Most patients were aged 40–45 years, and 70.8% were male. In the findings, prevalent risk factors documented included obesity, hypertension, tobacco smoking, diabetes mellitus, and a family history of MI. Physical inactivity and high stress levels were also commonly reported. Early screening, lifestyle modification, and targeted public health education are essential to reduce premature cardiovascular disease among young adults.

Keywords: Coronary Artery Disease, Lifestyle, Myocardial Infarction, Risk Factors, Young Adults

Introduction

In the past two decades, Kandahar, a significant city in Southern Afghanistan, has witnessed a notable increase in myocardial infarction (MI) cases among young adults, particularly those aged 18-45, and the productive and working-age population. Historically, MI has been predominantly a disease of older age, with its incidence globally rising with age. However, in recent years, there has been a noticeable shift, with younger populations increasingly affected. Traditionally, Kandahar, like many regions worldwide, dealt primarily with communicable diseases. However, as globalization increased and Kandahar became more connected with the world, a shift toward non-communicable diseases, including MI, has been observed (Salari, 2023).

Introduction and Pathophysiology of Myocardial Infarction: MI commonly referred to as a heart attack, represents a significant medical emergency characterized by the interruption of blood flow to a segment of the heart muscle. The underlying cause typically involves coronary artery disease (CAD), a condition characterized by the gradual buildup of atherosclerotic plaques within the coronary arteries. These plaques consist of a combination of cholesterol, fatty substances, and cellular debris, which may eventually rupture, leading to the formation of blood clots. The subsequent occlusion of coronary arteries results in myocardial ischemia, depriving the affected heart tissue of oxygen and nutrients, ultimately leading to cellular death (Rahimi, 2020. Ojha, 2023).

Hypertension (High Blood Pressure): Elevated blood pressure places increased stress on the walls of the coronary arteries, promoting the development of atherosclerosis and increasing the risk of MI. **High Cholesterol (Hyperlipidemia):** Elevated levels of cholesterol, particularly low-density lipoprotein (LDL) cholesterol, can lead to the accumulation of fatty deposits within the coronary arteries, narrowing their lumen and impeding blood flow. **Diabetes Mellitus:** Diabetes is associated with elevated blood sugar levels, which can damage the lining of blood vessels, accelerate atherosclerosis, and predispose individuals to MI. **Smoking:** Cigarette smoking is a major risk factor for both atherosclerosis and MI. The toxins in tobacco smoke promote the formation of atherosclerotic plaques and impair blood vessel function. **Physical Inactivity:** A sedentary lifestyle contributes to obesity, high blood pressure, and diabetes, all of which are risk factors for MI. Regular physical activity helps maintain cardiovascular health. **Obesity:** Excess body weight, particularly when concentrated around the abdomen, is associated with metabolic disturbances and increased risk of MI. **Stress and Mental Health:** Chronic stress and certain mental health conditions, such as depression and anxiety, may contribute to the development of CAD and MI through mechanisms involving inflammation and lifestyle choices. **Dietary Habits:** Diets high in saturated fats, Trans fats, salt, and processed foods can contribute to the development of atherosclerosis and increase the risk of MI (Dattoli-Garcia et al., 2021).

Non-modifiable risk factors for MI: Include a family history of cardiovascular disease, genetic predispositions, and advancing age. Individuals with a family history

of CAD are at an increased risk of developing the condition due to shared genetic factors and environmental influences. Additionally, advancing age is associated with a gradual deterioration of cardiovascular health and an increased prevalence of atherosclerosis, making older individuals more susceptible to MI (Dattoli-Garcia et al., 2021).

In Afghanistan, 8.8% of adults had CVD, with risk factors including age, tobacco use, high cholesterol, and poor diet; gender-specific patterns underscored the need for tailored interventions (Peltzer & Pengpid, 2021). National data revealed high rates of obesity (42.6%), hypertension (32.4%), diabetes (7.99%), and hypercholesterolemia (11.87%), with regional clustering of CVD prevalence and a critical role for physical activity in prevention (Rahimi, 2020). A Kandahar study of 748 patients showed poor diabetes control, particularly among females and low-SES groups, emphasizing diabetes as a major MI risk factor in the region (Rahimi, 2020). Rising MI rates among young adults in Kandahar mirror trends seen in similar socio-economic-settings. In Lahore, a cross-sectional study of young MI patients (15–45 years) identified dyslipidemia, smoking, hypertension, diabetes, and family history as the predominant risk factors (Fatimah, 2023).

A large ACS registry from Karachi found young patients (≤ 45 years) more likely to present with STEMI and delayed care, with smoking and family history more common than in older patients; mortality was lower but prevention remained critical (Peerwani, 2024). In Iraq, premature CAD prevalence reached 31%, with male sex, smoking, hypertension, hyperlipidemia, and family history as key predictors (Mohammadifard, 2023). Lifestyle and dietary transitions in South Asia further contribute to rising young-adult MI rates (Mohammad, 2015; Hanif, 2022). MI in patients < 45 , though uncommon, causes significant morbidity and is linked to atheromatous and non-atheromatous CAD, hypercoagulable states, and substance misuse-(Iqbal, 2015).

Studies from Bangladesh and Pakistan similarly identify male sex, smoking, hypertension, and family history as major contributors to young-onset MI, underscoring the importance of early intervention (Karim, 2015; Nawaz, 2022).

Lifestyle-Related Risk Factors: Smoking, physical inactivity, and unhealthy diet are strongly associated with MI risk in young adults (Sood, 2023; Yang, 2020), with WHO reports emphasizing these modifiable factors in CVD prevention (WHO, 2023). A meta-analysis showed anxiety increases CVD risk by 52%, highlighting its relevance in prevention strategies (Egred, 2005). **Psychosocial and Mental Health Factors:** Depression, anxiety, and chronic stress significantly contribute to CAD and MI development (Gan, 2014; Batelaan, 2016). Trauma and PTSD have also been linked to increased CVD risk, though age-specific effects require further study (Spitzer, 2020).

In Kandahar, ongoing socio-political stressors make psychosocial risk factors particularly relevant, necessitating integrated prevention approaches. Reviewing diverse study designs and successful prevention strategies focused on lifestyle and

mental health can guide culturally appropriate MI prevention efforts in Kandahar (Hamrah, 2020). This study aims to understand the factors contributing to this surge in MI among younger adults in Kandahar. It will explore regional-specific risk factors, lifestyle choices, and family medical history. This research is crucial as lifestyle and genetic factors can vary significantly across different populations. Moreover, the increase in MI cases in young adults, a group often less studied in this context, is particularly concerning. The outcomes of this research could inform local healthcare practices and broader public health policies and interventions aimed at reducing the incidence of myocardial infarction among young adults, both in Kandahar and in similar global contexts. The study aims to contribute to the global body of knowledge on MI, highlighting the changing epidemiology of this traditionally age-related condition and its emerging impact on younger populations.

Problem Statement

Myocardial infarction (MI) in young adults is an increasingly recognized public health concern worldwide, driven by both traditional risk factors such as hypertension, diabetes, dyslipidemia, obesity, and smoking, as well as non-traditional factors including psychosocial stress, substance abuse, and lifestyle behaviors. Global and regional studies indicate a rising incidence of MI among individuals under 45 years, with variations in risk profiles between males and females.

Despite these trends, there is a scarcity of data regarding the incidence and risk factor profile of MI among young adults in Kandahar, Afghanistan. Existing studies in Afghanistan have primarily focused on overall cardiovascular disease prevalence or adult populations, without stratifying by age or sex, and have not specifically assessed the contribution of modifiable and non-modifiable risk factors among the young population. Regional evidence from South Asia suggests that males are more frequently affected, with significant contributions from smoking, hypertension, diabetes, dyslipidemia, and family history of premature coronary artery disease, yet it remains unclear whether similar patterns exist in Kandahar.

Research Objectives

1. To determine the incidence rate of myocardial infarction (MI) among young adults in Kandahar, Afghanistan.
2. To compare the incidence of myocardial infarction (MI) between male and female young adults in Kandahar, Afghanistan.

Research Questions

1. What is the overall incidence rate of myocardial infarction (MI) among young adults in Kandahar, Afghanistan?
2. How does the incidence of MI differ between males and females among young adults in Kandahar?

Significance of Study

This study is significant because it addresses a critical gap in knowledge regarding myocardial infarction (MI) among young adults in Kandahar, Afghanistan a population for which limited epidemiological data currently exist. By determining the incidence of MI and identifying the frequency and distribution of associated risk factors among males and females, this research will provide essential insights into the local cardiovascular health landscape.

Understanding these risk factors will enable healthcare providers and policymakers to design targeted prevention strategies, improve early detection, and implement interventions that are culturally and contextually appropriate. Furthermore, the findings may guide public health education campaigns, inform clinical practice, and support resource allocation for cardiovascular care in Kandahar. Ultimately, this study has the potential to reduce morbidity, mortality, and the socioeconomic burden associated with premature myocardial infarction in young adults.

Materials and Methods

Study Design

A cross-sectional design was chosen to estimate the annual incidence of MI among hospitalized patients and to describe the demographic and clinical characteristics of young-age MI within a defined one-year period.

Study Setting and Time

The study was carried out in one major public (Mirwais Regional Hospital) and two private hospitals (Sial Curative Hospital and Mohmand International Hospital) in Kandahar city that provide acute cardiac care in one year span from May 2024 to April 2025.

Study Population and Sampling

The population is mainly the residents of Kandahar province including the urban and rural areas, and the samples are the patients that are admitted in the major cardiac centers for Acute Coronary Syndrome. Although the study was based in Kandahar, a significant proportion of patients admitted to these facilities were referred from neighboring provinces in southern Afghanistan. A targeted (consecutive) sampling approach was employed, enrolling all eligible patients who met the inclusion criteria during the study period. This approach was chosen due to the acute nature of MI and the limited availability of young MI cases. Potential limitations related to representativeness were acknowledged.

Inclusion Criteria

1. Adults aged 18–45 years admitted with a confirmed diagnosis of MI based on clinical, electrocardiographic, and biomarker findings.
2. Patients admitted to major hospitals in Kandahar during the study period.

3. Individuals able to understand and provide informed consent to participate in the study.

Exclusion Criteria

1. Patients outside the Kandahar region or those not meeting the inclusion criteria.
2. Individuals with severe illness or complications preventing participation or data collection.

Data Collection Tools and Procedures

Data was collected using a structured, pre-designed questionnaire developed to suit the local context and study objectives. The questionnaire captured information on demographic characteristics, socioeconomic status, lifestyle factors, medical history, family history of cardiovascular disease, and psychosocial factors.

Demographic and personal information was obtained directly from patients or, when necessary, from their attendants. Information regarding past medical history, smoking status, dietary habits, physical activity, sleep patterns, and perceived psychological stress was collected through direct interviews.

Clinical and Laboratory Assessment of Risk Factors

Anthropometric measurements were obtained using standardized equipment. Body weight and height were measured using calibrated weighing scales and tape measures, and body mass index (BMI) was calculated as weight (kg) divided by height squared (m^2). Obesity was defined as a BMI $\geq 30 \text{ kg/m}^2$. Waist circumference was measured using a non-stretchable tape to assess central obesity, defined as $>102 \text{ cm}$ in men and $>88 \text{ cm}$ in women (Gan, 2014). Hypertension was assessed using calibrated sphygmomanometers, with blood pressure measured in a seated position following standard protocols. Hypertension was defined as systolic blood pressure $\geq 140 \text{ mmHg}$ and/or diastolic blood pressure $\geq 90 \text{ mmHg}$, or current use of antihypertensive medication. Diabetes mellitus was evaluated using random blood sugar (RBS), fasting blood sugar (FBS), and glycated hemoglobin (HbA1c) levels. Diabetes was defined as FBS $\geq 126 \text{ mg/dL}$, RBS $\geq 200 \text{ mg/dL}$ with symptoms, HbA1c $\geq 6.5\%$, or a prior diagnosis of diabetes with ongoing treatment. Dyslipidemia was assessed using a fasting lipid profile for each patient and defined according to guideline thresholds, including total cholesterol $\geq 200 \text{ mg/dL}$, low-density lipoprotein cholesterol (LDL-C) $\geq 130 \text{ mg/dL}$, high-density lipoprotein cholesterol (HDL-C) $<40 \text{ mg/dL}$ in men or $<50 \text{ mg/dL}$ in women, or triglycerides $\geq 150 \text{ mg/dL}$, or current use of lipid-lowering therapy. All clinical measurements and laboratory investigations were performed using standard medical equipment and routine hospital laboratory procedures. Smoking status, physical inactivity, and other lifestyle variables were defined based on patient self-report (Dugani, 2021).

Statistical Analysis

Data was entered and analyzed using statistical software such as SPSS. Descriptive statistics were used to summarize demographic characteristics and risk factors. Continuous variables were expressed as means and standard deviations or medians, while categorical variables were presented as frequencies and percentages.

Validity and reliability

Before starting the study or collecting the Data for the study we shared the proposal and questionnaire of the survey with two instructors and have taken their opinions for the following issues after changing and correcting the questionnaire than we started the study and collecting Data, at first, we just did Pre-testing or a pilot study and taken the data and we have also checked the reliability in SPSS 26.

Internal Consistency

Cronbach's Alpha: [0.77] (≥ 0.70 considered acceptable)

Cronbach's Alpha	Number of Items
0,77	8

Ethical Considerations

Ethical approval was obtained from the relevant institutional review authority. Informed consent was obtained from all participants or their attendants prior to data collection. Patient confidentiality was maintained by anonymizing all collected data and restricting access to study records. All study procedures, data collection, and reporting were conducted with strict adherence to ethical standards, scientific integrity, and originality to prevent plagiarism and ensure the accuracy and reliability of the findings.

Results

During the study period (May 2024-April 2025), data were collected from three major tertiary hospitals in Kandahar province Mirwais Regional Hospital (MRH), Mohmand International Hospital (MIH), and Sial Curative Hospital which are the principal centers admitting cardiac and myocardial infarction (MI) patients in the region. A total of 87,860 patients were admitted across these hospitals (69,832 in MRH, 15,000 in MIH, and 3,028 in Sial Hospital). Among them, 860 patients were diagnosed with MI, representing an overall incidence of approximately 0.98% among all admitted patients.

Out of these 860 MI cases, 49 patients (5.7%) were classified as young-age MI, meeting the inclusion criteria of the present study. These patients were enrolled after exclusion of cases that were deceased prior to questionnaire completion, not fully admitted, or had unconfirmed diagnoses.

Table 1. *Distribution of Total and MI Admissions across Hospitals*

Hospital	Variables	Frequency (%)
Mirwais Regional Hospital (MRH)	Total Admitted Patients	69,832 (100%)
	Admitted MI Patients	448 (0.64%)
	MI Incidence (%)	0.64%
	Young MI Cases Included in Study	28 (6.25%)
	% of Young MI Among Total MI	6.25%
Maiwand International Hospital (MIH)	Total Admitted Patients	15,000 (100%)
	Admitted MI Patients	224 (1.49%)
	MI Incidence (%)	1.49%
	Young MI Cases Included in Study	16 (7.14%)
	% of Young MI Among Total MI	7.14%
Sial Curative Hospital	Total Admitted Patients	3,028 (100%)
	Admitted MI Patients	188 (6.21%)
	MI Incidence (%)	6.21%
	Young MI Cases Included in Study	5 (2.66%)
	% of Young MI Among Total MI	2.66%
Total	Total Admitted Patients	87,860 (100%)
	Admitted MI Patients	860 (0.98%)
	MI Incidence (%)	0.98%
	Young MI Cases Included in Study	49
	% of Young MI Among Total MI	5.7%

Among the 49 young-age myocardial infarction patients included in this study, the majority were aged 40–45 years (33 patients; 67.3%), followed by those aged 35–39 years (14 patients; 28.6%), while only 2 patients (4.1%) were aged 30–34 years, with no cases observed below 30 years of age. Most patients were male (35; 70.8%), whereas 14 (29.2%) were female. Regarding residence, 27 patients (54.2%) lived in rural areas and 22 (45.8%) resided in urban regions. In terms of occupation, 16 patients (33.3%) were office workers, 14 (29.2%) performed physical labor, 12 (25.0%) were housewives, and 6 (12.5%) were unemployed. Concerning education, 36 patients (72.9%) were uneducated, 8 (16.7%) had education below high school level, 4 (8.3%) were high school graduates, and 1 (2.1%) had Islamic education; correspondingly,

only 4 patients (8.3%) had received any form of heart health education, while the vast majority, 45 patients (91.7%), had not.

Table 2. Sociodemographic Characteristics of Young-Age MI Patients (n = 49)

Variable	Frequency (%)
Age Group (years)	
30–34	2 (4.1%)
35–39	14 (28.6%)
40–45	33 (67.3%)
<30	0 (0%)
Gender	
Male	35 (70.8%)
Female	14 (29.2%)
Residence	
Rural	27 (54.2%)
Urban	22 (45.8%)
Occupation	
Office worker	16 (33.3%)
Physical labor	14 (29.2%)
Housewife	12 (25%)
Unemployed	67 (12.5%)
Education Level	
Uneducated	36 (72.9%)
< High school	8 (16.7%)
High school graduate	4 (8.3%)
Islamic education	1 (2.1%)
Heart Health Education	
Received	4 (8.3%)
Not received	45 (91.7%)

Among 48 young-age MI patients assessed for stress, 27 patients (56.2%) reported high stress levels (7–10), 18 patients (37.5%) reported moderate stress (4–6), and only 4 patients (8.3%) had low stress levels (1–3).

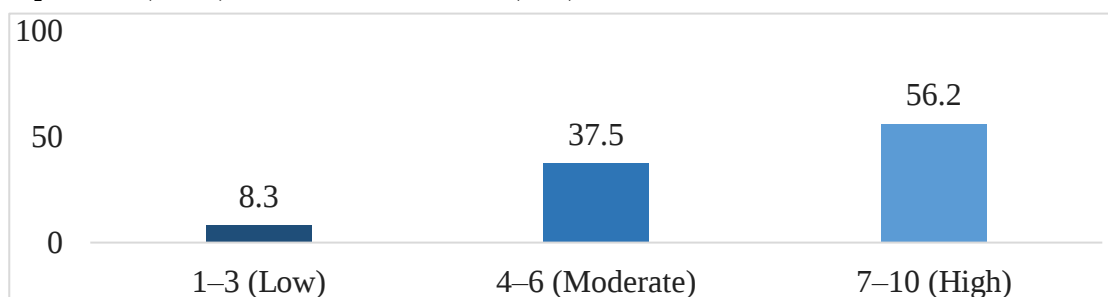


Figure 2. Stress levels among young mi patients

Among the 49 young-age MI patients, multiple cardiovascular risk factors were prevalent. Hypertension and current tobacco smoking were each reported in 43.8% of participants, while diabetes mellitus and hyperlipidemia were present in 29.2% and 14.6%, respectively. A family history of MI was noted in 33.3%. Regarding body mass, 63.3% were overweight or obese ($\text{BMI} \geq 25$). Physical inactivity (0–3 hours/week) was observed in 77.5%, low fruit and vegetable intake (<4 times/week) in 67.4%, and frequent fast-food consumption ($\geq 1/\text{week}$) in 51.0% of patients.

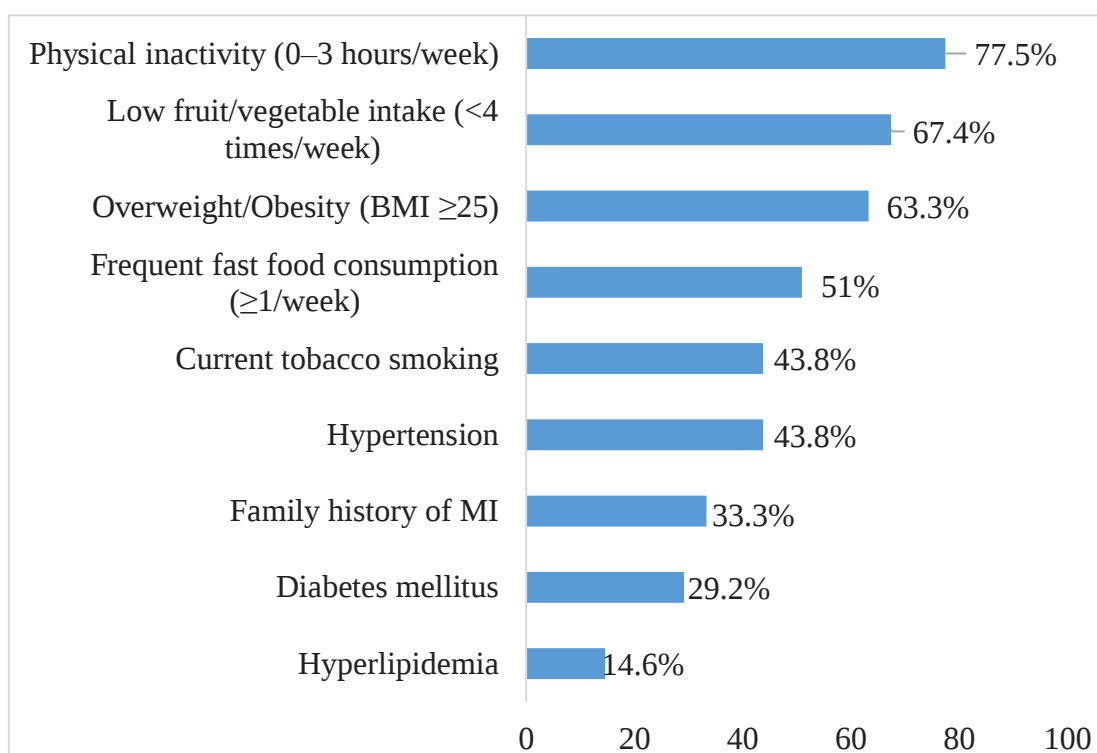


Figure.3 Frequency of risk factors among the selected young MI patients

Discussion

This study represents one of the systematic efforts to evaluate the incidence and characteristics of myocardial infarction (MI), particularly early-onset MI, in Kandahar, Afghanistan. Over a one-year period, the overall incidence of MI among hospitalized patients across three major tertiary hospitals was 0.98%, with 5.7% of these cases occurring in young adults. While these hospitals Mirwais Regional Hospital, Mohmand International Hospital, and Sial Curative Hospital are the main cardiac referral centers in the province, several other hospitals and private clinics may also have admitted MI patients during the study period. However, due to lack of data-sharing cooperation, incomplete record-keeping systems, and absence of standardized registries, data from those institutions could not be included. Moreover, approximately 14 patients who met the inclusion criteria were excluded because they either died

before questionnaire completion, left the hospital before full assessment, or provided incomplete information. Nevertheless, the findings highlight an emerging and significant burden of cardiovascular disease among the young population in southern Afghanistan a trend that parallels the growing global concern over premature coronary artery disease in low- and middle-income countries.

In this study, early-onset myocardial infarction (MI) occurred among adults aged 18-45 years in Kandahar, Afghanistan, consistent with the definition of “young” or “premature” MI used in prior international studies (BMC Cardiovascular Disorders, 2023). This group represents the most economically active segment of the population. Notably, nearly one-third (32.7%) of cases occurred before 40 years, while two-thirds were between 40 and 45 years, indicating a sharp rise in MI incidence toward the upper range of young adulthood. These findings are consistent with regional and global evidence showing that coronary atherosclerosis and its clinical manifestations typically emerge during the later part of the fourth decade of life (Enas, 2001; Yusuf, 2004). The overall MI incidence of 0.98% among admitted patients in Kandahar mirrors the rising cardiovascular disease (CVD) burden documented across Afghanistan. National studies have reported CVD prevalence rates of 8.8% and 8.9%, with high rates of obesity, hypertension, diabetes, and hyperlipidemia (Rahimi, 2020). These widespread cardio metabolic abnormalities provide important context for the growing number of MI cases seen in our region.

Our observed proportion of young-age MI cases (5.7%) is comparable to studies from Pakistan, Iraq, and Bangladesh. For instance, a study from Lahore reported significant rates of MI among young patients, driven largely by dyslipidemia, smoking, hypertension, and diabetes (Fatimah, 2023). Similarly, a large cohort from Karachi identified that 12.2% of ACS patients were ≤ 45 years old, with smoking and positive family history more common among younger individuals (Peerwani, 2024). An Iraqi study reported 31% prevalence of premature coronary artery disease (PCAD), strongly associated with smoking, hypertension, hyperlipidemia, and family history (Mohammadifard, 2023). Findings from Bangladesh further emphasize that young MI patients tend to be male smokers with a strong familial predisposition (Karim, 2015). Comparable trends in Afghanistan, Pakistan, Iraq, and Bangladesh suggest shared socioeconomic and environmental determinants driving early-onset MI. Lifestyle and dietary shifts across South Asia have been highlighted as significant contributors to rising MI among young adults (Mohammad, 2015; Hanif, 2022).

The predominance of males (70.8%) among young MI patients in our study aligns with regional studies that consistently show male sex as a major risk factor for early MI (Peerwani, 2024; Rawat, 2023). Male predominance may be attributed to higher smoking rates, occupational stresses, and differences in healthcare-seeking behavior in the region. The relatively high proportion of female patients (29.2%), however, may signal a growing burden of cardiovascular disease among Afghan women, possibly linked to rising rates of obesity, physical inactivity, and household stressors. Slightly more than half of the young MI patients (54.2%) resided in rural areas. This finding highlights the health disparities between rural and urban

populations in Afghanistan, where limited access to preventive healthcare, lower awareness of cardiovascular risk factors, and delayed presentation to hospitals contribute to poor outcomes. The rural predominance also suggests that ongoing urbanization and lifestyle transition are influencing cardiovascular health beyond city boundaries.

Occupational distribution revealed that office workers and housewives constituted the majority of young MI patients in this study. These groups are typically associated with sedentary lifestyles and limited physical activity, both of which promote early atherosclerosis and increase susceptibility to premature cardiovascular disease. In contrast, individuals involved in manual labor showed comparatively lower MI occurrence, supporting the protective effects of regular physical exertion. Similar associations between sedentary occupations and early coronary events have been reported in regional studies from Pakistan and India. In addition to occupational influences, lifestyle-associated risk factors were strikingly prevalent. Physical inactivity (77.5%), low fruit and vegetable intake (67.4%), and frequent fast-food consumption (51.0%) reflect the dietary and behavioral shifts occurring across South Asia (Hanif, 2022; Yang, 2020). Reports from the World Health Organization similarly emphasize that modifiable factors such as smoking, physical inactivity, and unhealthy diet are central drivers of young-onset cardiovascular disease (WHO, 2023). These regional parallels suggest that Kandahar is undergoing the same lifestyle transition observed in Pakistan, Bangladesh, and other South Asian regions, contributing significantly to the rising risk of MI among younger adults.

A striking 72.9% of patients in this study were uneducated, and over 90% had never received any information regarding heart health. This emphasizes the profound gap in cardiovascular awareness in Kandahar, a pattern consistent with earlier Kandahar studies reporting poor chronic disease awareness and high rates of uncontrolled diabetes among low-education groups (Rahimi, 2020). Lack of health literacy is a recognized barrier to the adoption of preventive behaviors, early recognition of symptoms, and timely healthcare utilization. Targeted community education campaigns and integration of cardiovascular prevention into primary healthcare services could substantially reduce this burden.

Traditional cardiovascular risk factors were highly prevalent among young MI patients in this cohort. Hypertension (43.8%) and tobacco smoking (43.8%) were the most common, followed by obesity (63.3%), diabetes (29.2%), hyperlipidemia (14.6%), and a family history of MI (33.3%). These patterns closely mirror findings from regional studies, where smoking, dyslipidemia, hypertension, and family history were consistently identified as strong predictors of premature MI in young adults across Pakistan, Iraq, and Bangladesh (Fatimah, 2023; Peerwani, 2024). The high burden of modifiable risk factors in our population underscores their central role in early-onset MI, aligning with evidence from South Asia indicating that behavioral and metabolic risks drive most premature cardiac events. Additionally, the elevated prevalence of lifestyle-related contributors' physical inactivity (77.5%), low fruit and vegetable intake (67.4%), and frequent fast-food consumption (51%) reflects a

broader shift toward unhealthy lifestyles in Afghanistan's young population. Such behaviors, influenced by rapid urbanization, psychosocial stress, and inadequate access to recreational facilities, parallel the epidemiologic transition seen across developing nations and further amplify cardiovascular risk in this vulnerable age group.

Psychosocial stress emerged as a significant contributor to early-onset MI in this study, with more than half of the participants (56.2%) reporting high stress levels prior to their cardiac event. This finding is consistent with growing evidence that psychosocial stress, depression, and anxiety are independent predictors of cardiovascular disease (Gan, 2014; Batelaan, 2016). A meta-analysis of 37 studies further demonstrated that anxiety increases the risk of CVD by 52%, (Egred, 2005). while additional research has linked trauma exposure and PTSD to structural and functional cardiovascular abnormalities (Spitzer, 2020). The high stress burden in our cohort likely reflects the broader context of Kandahar, where prolonged socio-political instability, economic hardship, unemployment, and family pressures create chronic psychological strain. Such persistent stress activates sympathetic pathways, promotes endothelial dysfunction, and increases systemic inflammation, accelerating the development of atherosclerosis and precipitating acute coronary events. These findings highlight the disproportionately large role that psychosocial factors may play in cardiovascular risk in this region and underscore the urgent need to integrate mental health assessment and support into cardiac prevention and rehabilitation strategies. The findings of this study highlight the urgent need for preventive cardiovascular health strategies in Afghanistan, particularly among the young population.

Finally, this study faced several limitations that may have influenced the completeness and generalizability of the findings. First, not all eligible patients were captured, as some left the hospital before data collection or were discharged against medical advice, while others could not be reached in time by the research team. Second, data collection was limited to hospitals that agreed to participate; several other hospitals in Kandahar showed limited cooperation or declined to share data, which may have reduced the representativeness of the sample. Third, hospital record-keeping systems were often incomplete or poorly maintained, leading to potential underreporting of myocardial infarction cases and missing patient details. Finally, various contextual challenges such as political instability, restricted internet access, and administrative barriers disrupted the smooth progression of data collection. Despite these constraints, this study provides valuable preliminary insights into the growing burden of myocardial infarction among young adults in southern Afghanistan.

Conclusion

This study highlights a significant burden of early-onset myocardial infarction in Kandahar, driven predominantly by modifiable lifestyle and metabolic risk factors. The most common prevalent factors included physical inactivity, unhealthy diet, obesity, hypertension, and smoking, while diabetes, hyperlipidemia, and family

history played a lesser but notable role. Psychosocial stress and low cardiovascular health literacy further amplified vulnerability in this young population. These findings underscore the urgent need for community-based prevention, lifestyle modification programs, mental health support, and improved primary-care screening. Practical implementation should include early and systematic screening of young adults for blood pressure, glucose, and lipid abnormalities; integration of cardiovascular risk assessment into routine primary care visits; delivery of structured, culturally appropriate counseling focused on increasing physical activity, improving dietary patterns, smoking cessation, and stress management; training healthcare workers in brief preventive interventions; establishing low-cost community screening initiatives; incorporating health education into schools and workplaces; and improving access to basic monitoring and mental health support. These strategies together enable early detection, risk reduction, and a measurable decrease in premature myocardial infarction at the population level.

Recommendations

1. Implement early screening programs for hypertension, diabetes, and dyslipidemia in young adults, strengthen primary care-based prevention, and promote policies supporting healthy diet and tobacco control.
2. Integrate routine cardiovascular risk assessment in young patients, provide brief lifestyle and smoking cessation counseling, and include basic mental health screening and follow-up care.
3. Introduce cardiovascular health education in schools, promote regular physical activity, and increase awareness of healthy diet and smoking risks from an early age.
4. Deliver simple, culturally appropriate public awareness campaigns on heart health, risk factors, and early symptoms of myocardial infarction through mass media.
5. Conduct community outreach programs to improve health literacy, particularly in rural populations, and encourage family-based lifestyle changes.
6. Perform larger multicenter and longitudinal studies and evaluate the effectiveness of preventive interventions in reducing early-onset myocardial infarction.

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په ځوانانو کې د زړه د حملې کلینیکي او ډیموگرافیک پروفایل، کندهار، افغانستان

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لنډیز

په افغانستان او نړۍ کې، په ځوانانو کې د زړه حمله یوه زیاتېدونکې ستونزه ده. دغه څېړنه د تشریحي-مقطعي ډیزاین پر اساس د یو کال په موده کې د ۲۰۲۴ کال د می میاشتې څخه تر ۲۰۲۵ کال د اپریل میاشتې پورې ترسره شوې ده. د دې څېړنې موخه دا ده ترڅو د کندهار ښار په ځوانانو کې د زړه د حملې یا MI کلینیکي او ډیموگرافیک ځانګړتیاوې وپېژندل سي. په څېړنه کې هغه ناروغان شامل سول، چې عمرونه یې د ۱۸ څخه تر ۴۵ کلونو پورې ول او د زړه د حملې تشخیص یې تثبیت شوی وو. د ډیموگرافیکو ځانګړتیاوو، د ژوند د تګلارو او کلینیکي خطري فکتورونو اړوند معلومات د منظم پوښتنلیک، فزیکي معایناتو او د لابراتواري ازموینو له لارې راټول سول او تشخیص یې د کلینیکي نښو، د الکتروکارډیوګرام (ECG) بدلونونو او د زړه حیاتي نښو (Biomarkers) پر بنسټ ترسره سو. راټوله شوې ډاټا د SPSS سافټویر په مرسته تحلیل او پایلې یې د اوسط، معیاري انحراف، شمېر او فیصدي په بڼه وړاندې سوي دي. په روغتونو کې د بستر سوو ټولو ۸۷،۸۶۰ ناروغانو له ډلې څخه په ۸۶۰ تنو کې چې (۰،۹۸٪) کېږي د زړه حمله تشخیص سول، چې له دې ډلې ۴۹ تنه (۵،۷٪) ځوانان (له ۱۸-۴۵ کلونو) عمر لرونکي ول. په ذکر سوو ۴۹ تنو کې ډېری ناروغان د ۴۰-۴۵ کلونو ترمنځ عمر درلود، او ۷۰،۸٪ یې نارینه ول. تر ټولو عام خطري فکتورونه د فزیکي فعالیت نه شتون، ناسالم خوراکي رژیم، چاغښت، لوړ فشار او سګرټ څکول ول، په داسې حال کې چې شکره (diabetes)، د وینې د غوړ زیاتوالی (hyperlipidemia) او فامیلی تاريخچه یې لږ څو مهم رول درلود. سربېره پر دې، رواني یا ټولنیز فشار او د زړه د ناروغیو په اړه د پوهاوی نه درلودل په ځوانانو کې د زړه حملې د خطر زیاتوالی باعث ګرځېدلی دی. وختي طبي معاینه کول، د ژوند د تګلارې بدلول او عامه روغتيايي پوهاوی لرل په ځوانانو کې د وخت څخه مخکې د زړه او رګونو د ناروغیو د راکمولو له پاره اړین دي.

کلیدي کلمې: خطري فکتورونه، ځوانان، زړه حمله، د شریانو ناروغي، د ژوند طرز

Prevalence and Associated Factors of Acute Malnutrition Among Under-5 Children Attending Comprehensive Health Centers in Kandahar City, Afghanistan

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Abstract

Malnutrition continues to be a significant public health problem worldwide, affecting more than 50 million children under five years of age, and each year this health problem can cause 8.0% of global child deaths. This study aimed to assess the prevalence and associated factors of acute malnutrition among children under five attending Comprehensive Health Centers (CHCs) in Kandahar, Afghanistan. A cross-sectional study was conducted among 450 children under-five in three CHCs using random sampling. Data were collected using a structured questionnaire administered by four midwives and two medical students, and anthropometric measurements were also taken. After the entry of data to SPSS version 26, the descriptive statistics were undertaken to identify malnutrition and other significantly associated factors with undernutrition. Demographic results of this study showed that 43,1% were boys 56,9% were girls and 7,3% were at risk of acute malnutrition. According to this study, 95,1% of the mothers were uneducated, and from all of those mothers, 16.9% of mothers or caretakers had six or more children, which may be a risk factor for child malnutrition. Additionally, 53.8% of mothers had more than one child under the age of five. The findings highlight the urgent need for targeted nutrition interventions among under-five children in Kandahar, particularly focusing on maternal education, breastfeeding promotion, family planning, and socioeconomic support. Strengthening nutrition education and improving access to primary healthcare services may contribute significantly to preventing and managing acute malnutrition in this population.

Keywords: Acute malnutrition, CHCs, incidence, MUAC, under-five children, undernutrition

Introduction

Malnutrition has been defined as a pathological state resulting from a relative or absolute deficiency or excess of one or more essential nutrients. It comprises four forms undernutrition, over nutrition, imbalance, and specific undernutrition (Jelliffe, 1996).

The direct effects of malnutrition are the occurrence and frank and subclinical nutrition deficiency diseases such as kwashiorkor, marasmus, and vitamin and mineral deficiency diseases. The indirect effect is high morbidity and mortality among young children, with nearly 50 % of total death in developing countries occur among children under-5 years of age as compared to less than 5% in developed countries. Additionally, malnutrition leads to retarded physical and mental growth and development, which may be permanent, as well as lowered vitality, reduced productivity, and decreased life expectancy. Malnutrition predisposes to infection and infection to malnutrition, and the morbidity arising therefrom as a result of complications from such infectious diseases as tuberculosis and gastroenteritis is not inconsiderable (Park, 2023).

Hunger and malnutrition are among the major difficulties confronting many countries around the world. Malnutrition can be caused by several factors such as the sharp increases in population, poor distribution of food, lack of access to highly nutritious food, and most importantly, lack of knowledge about healthy diets. Over three billion people are affected by micronutrient malnutrition in the developing world. Over 146 million children under five are underweight and children often die because of malnutrition. Malnutrition affects infants and children more than young age because of the brain's and immune system's rapid linear growth (Ramazanpour et al., 2013).

Severe Acute Malnutrition (SAM) remains a major health threat to children as the mortality rates among SAM children are nine times higher than those in well-nourished children (Black, 2008). Acute malnutrition is a nutritional deficiency resulting from either inadequate energy or protein intake. Children with primary acute malnutrition are common in developing countries as a result of inadequate food supply caused by social, economic, and environmental factors (Dipasquale et al., 2020). Acute malnutrition was operationally defined with MUAC <12.5 cm as the index test and WHZ < -2 SD as the reference standard (Menber et al., 2025).

MUAC are tapes, which mainly used to measure the upper arm circumference of children but also of adults to help identify malnutrition. For children 6 months to 5 years of age, according to the World Health Organization (WHO) are 11.5 cm for severe acute malnutrition and between 11.5 cm and 12.5 cm for moderate acute malnutrition (Laillou, et. al 2014).

The prevalence of undernutrition exceeds 900 million people across the world. Malnutrition also has long-term consequences such as poor physical and mental

function, increased vulnerability to infection, developing no communicable diseases in adulthood, and economic burden for the health care system (Martins, et, al, 2011).

Malnutrition affects more than 50 million children in the world (Jones, et, al, 2014). Causing 3.1 million global child deaths annually. Acute malnutrition is the clinical term for undernutrition, a major concern of the health sector (Kerac & Seal, 2014). It is defined as a weight-for-height Z-score (WHZ) (wasting) based on body measurement. Malnutrition in children is categorized as mild, moderate, and severe. Mild is defined as > -1 (WHZ) affecting 19% of children annually worldwide, moderate < -2 and > -3 (WHZ) affecting 15,8% of children annually worldwide, severe < -3 (WHZ) affecting 6,8% of children annually worldwide. These children face a higher risk of morbidity from infectious diseases, which puts them at three times more risk of death than their counterparts with sufficient nutrition (Lenters et al., 2013; Bhutta, 2009). The findings of that research show that more than 400,000 child deaths can be prevented each year by adequate identification and proper management of malnutrition (Chang et al., 2013; Laillou et al., 2014).

A cross-sectional study in Faryab was conducted for 600 households to find the prevalence and causes of acute malnutrition. The prevalence of acute malnutrition (wasting) among under 5 years old children in Afghanistan was 9.5% nationally and 3.7% in Faryab province in 2013 (Frozanfar et al., 2013).

Additionally, malnutrition is related to health, environmental, and social factors or determinants (Hickson, 2006). Elderly children are more vulnerable to developing a worse nutritional status because of their lack of teeth, their loss of taste, or their poor mobility (Corish, 2018), as a consequence, these factors can affect dietary intake. The social factors associated with malnutrition include lifestyle, loneliness, isolation, marital status, educational level, socioeconomic level, and place of residence (Streicher et al., 2018). Those who are single, widowed, or divorced are the most malnourished or at the most risk of malnutrition, especially the widowed (Maseda, 2018).

A total of 2474 children from 1327 households completed the examination and interview. diarrhea (32.5%) and acute respiratory infection (41.0%) were common child health problems and both emaciation (12.4%) and liner growth retardation (39.9%) were prevalent. In this study, the lack of education of the mothers, and child marriage were the main factors in child malnutrition (Mashal et al, 2008).

Problem Statement

According to WFP (2023) report, more than 15.3 million Afghans are not consuming enough food and 2.8 million Afghans are in emergency-level food insecurity, four million people, including 3.2 million children under five years are suffering from acute malnutrition in Afghanistan. The global index of Afghanistan ranks 109 out of 121 countries in 2022 which indicates a serious level of hunger.

According to the evidence of the free medical camp of Malalay Medical faculty in Temorian village Dand district Kandahar which was held on 16 July 2023, the

researchers have found that about 40% children under 5 years were affected by malnutrition.

In the last survey of malnutrition which was conducted in Mirwais Regional Hospital KDR, the average rate of malnutrition was 14.41% among hospitalized children and the majority of these cases were between 6-24 months, this was a hospital-based study and did not represent the true prevalence of malnutrition (Zafari et al., 2023).

A school-based cross-sectional study was conducted among 1205 primary school children aged 6-12 years during a period of six months from 2022 to 2023 and the school students 83.6% had undernutrition, with 47.4%, 19.5%, and 25.6% having stunting, wasting/thinness, and underweight (Rahimi et al., 2024).

Previous studies on this topic have primarily collected data from hospital registers and school students, which may not fully capture the extent and underlying causes of malnutrition in the broader population. This research however utilizes a questionnaire-based approach to gather detailed and comprehensive data directly from the families of the children attending CHCs in Kandahar city. By doing so, it provides a more accurate assessment of the prevalence and risk factors of acute malnutrition among children under 5. The findings of this research can fill the gap and there is a need to find the prevalence and risk factors of malnutrition in children under 5 in CHCs in Kandahar city.

Significance of the Study

This study is critically important as it provides valuable insights into the extent and underlying causes of malnutrition in a vulnerable population. By identifying specific risk factors, the research facilitates targeted interventions and efficient resource allocation, ultimately aiming to improve health outcomes and reduce mortality and morbidity among children under five. The findings can help in designing and implementing effective nutrition and health programs, guide policy development, and raise awareness among stakeholders. Additionally, the study contributes to the global body of knowledge on child malnutrition, offering region-specific data that can be used to enhance public health strategies both locally and globally.

Research Objectives

1. To determine the prevalence of acute malnutrition among under-five children attending CHCs in Kandahar City.
2. To identify the factors associated with acute malnutrition among under-five children attending CHCs.

Research Questions

1. What is the prevalence rate of acute malnutrition among under-five children attending CHCs?
2. What are the associated factors of acute malnutrition among under-five children attending CHCs?

Materials and Methods

Study Design and Setting

This is a cross-sectional descriptive study that was conducted from Sep 2023 to Mar 2024 at three CHCs (Hakim Sahib Ada (Shamsullhaq CHC), Balakarz CHC and Mirza Ahmad Khan Kalacha (Mirza Ahmad Khan CHC) of Kandahar province. The cross-sectional design is appropriate for assessing the prevalence of malnutrition at a single point in time and identifying associations with various factors. However, it is important to note that this design does not allow for causal inference or the examination of temporal relationships between malnutrition and potential risk factors.

Study Population and Sampling

The study population consisted of children under five years of age, including both boys and girls, with their mothers or caretakers serving as the respondents. Simple random sampling was used to select participants. This method enhances the sample's representativeness by minimizing selection bias, thereby improving the generalizability of the findings to the broader population of children under five years of age. Additionally, a sufficiently large sample size was ensured to maintain statistical power and produce reliable estimates.

Sample Size

In this study, 450 OPD children were selected during the study period. The sample size is calculated by using the following formula:

$N = \text{Sample Sizes}$

$1.96 = \text{Confidence}$

$E = \text{Error Rate}$

$\delta = \text{Standard Deviation}$

$$N = \frac{1.96^2 \delta^2}{E^2} = \frac{(1.96)^2 43.5^2}{4^2} = \frac{3.8 \cdot 1892.25}{16} = \frac{7190.55}{16} = 449$$

Inclusion Criteria

The children were included in the study who were under five years old and whose parents or caretakers were willing to be part of the study.

Exclusion Criteria

Children older than five years, those with other chronic diseases, and those whose mothers or caretakers refused to participate were excluded from the study. Additionally, 86 children were excluded from MUAC measurement who had edema and those younger than six months.

Data Collection

The data for this study were collected from mothers and caretakers of children under five years of age using a structured questionnaire. Data for this study were collected by four trained midwives who were working in CHCs' nutrition sections. The midwives ensured that participants were well-informed about the study objectives and provided assistance where needed to facilitate accurate and comprehensive data collection and help maintain high-quality data. Participants were given clear instructions and enough time to complete the survey at their convenience. This approach was particularly beneficial for ensuring high response rates and data accuracy.

Instrument

The data for this study were collected using a structured questionnaire, specifically designed to gather the data from mothers and caretakers of children under five years of age. The questionnaire was developed to address key aspects of child nutrition, research questions, and goals. The questionnaire comprised 16 items to capture quantitative data and qualitative insights.

Validity and reliability

Before beginning the study or collecting data, the survey questionnaire was shared with two associate professors, and their opinions were obtained regarding the content and structure. After necessary changes and corrections were made to the questionnaire, the study commenced and data collection began. Initially, a pretesting or pilot study was conducted, and the data were collected. The reliability of the questionnaire was then assessed using SPSS version 26.

Table 1. *Cronbach's Alpha: [0.73] (≥ 0.70 considered acceptable)*

Cronbach's Alpha	Number of Items
0,73	16

Data Analysis

The collected data were analyzed using SPSS-V26 to ensure accurate and comprehensive results and are presented in graphs and tables. Descriptive statistics were employed to summarize and interpret the data, focusing on frequencies and percentages to provide a clear overview of the responses.

Research Ethics

All ethical issues were considered and the study was conducted after approval from the Public Health office of Kandahar, and with the permission of the head office of the CHCs. Verbal consent from parents/caretakers of study subjects was obtained and the objective of the study was explained to them. Privacy and confidentiality of collected information was ensured at all levels. The names and personal and medical

information of all the participants were kept secret. There was no copy-paste information without the mentioning of the researcher's name.

Results

A total of 450 children between the age group of 6-59 months were screened for acute malnutrition. According to their MUAC measurement, the prevalence of those children who were severely malnutrition was found 22,7%, and those children who were at risk of malnutrition were 39,1 %, and the risk of acute malnutrition was 7,3%, and adequate nutrition was 11.8 %. Factors like low economic status, birth interval of less than 2 years, number of children, and breastfeeding were significant determinants of SAM.

Table 2. *Socio-demographic information (n=450)*

Variable	Values	Frequency	Percentage
Age	7-12 months	236	52.4
	13-18 months	129	28.7
	19-24 months	41	9.1
	25-30 months	14	3.1
	31-36 months	15	3.3
	37-42 months	2	.4
	43-48 months	8	1.8
	49-60 months	5	1.1
Gender	Male	194	43.1
	Female	256	56.9
Marital state of the mother	Married	446	99.1
	widow	4	.9
Adress	Bala Karz	149	33.1
	Hakim Sab Ada	154	34.2
	Merza Mohmmad Khan	147	32.7

The children's ages were simplified in the table 2 where a big portion (52,4%) were between 7-12 months old, and the second big portion was 28,7% at 13-18 months. Address of the children who participated in the survey 33.1% from Bala Karz, 34,2 % from Hakim Sab Ada, and 32,7 from Merza Mohmmad Kan CHC, however, the percentages in these 3 areas are a little bit different it is because we selected or have given 3 weeks to the Data collectors for fulfilling the questionnaire after taking the random sampling there were little bit missing data in some questionnaire for avoiding the bias, we didn't calculate some questionnaire, however, our predict questionnaires were 500 but in data analysis, we calculated 450. In this study population, those who were evaluated in the survey were 194 boys (43,1%) and 256 girls (56,9). Marital Status of the mother or Caretaker: as we mentioned earlier this survey was designed for 3 CHCs and most of the time patients from rural areas come into these CHCs as in our tradition in the rural area's widows' women are getting married to brothers in low,

so there are very fewer widows in the rural area especially those widows who have under 5 children, in this survey lots of caretakers or mothers of the children were married 99.1%.

Table 3. *MUAC of those children who don't have Edema*

	Values of MUAC	Frequency	Percent
Severe malnutrition	<11,5cm	102	22.7
Risk of malnutrition	11,5-12,5cm	176	39.1
Risk of acute malnutrition	12,5-13,5cm	33	7.3
Adequate nutrition	>13,5cm	53	11.8
	Total	364	80.9
	Missing	86	19.1
	Total	450	100.0

In this study, MUAC was measured for 364 children aged 6-59 months. Among these children, 102 were classified as having severe malnutrition, 176 were at risk of malnutrition, 33 were at risk of acute malnutrition, and 53 had adequate nutrition.

Table 4. *Mother Education Statute*

Level of education	Frequency	Percent
Uneducated	428	95.1
Primary education	18	4.0
School graduated	1	.2
University graduated	3	.7
Total	450	100.0

Table 4 presents the distribution of mothers' education levels. The majority of mothers (428, 95.1%) were uneducated. Only 18 mothers (4.0%) had completed primary education, while 3 mothers (0.7%) were university graduates. The smallest proportion was school graduates, accounting for only 1 mother (0.2%). Overall, the data indicate that the vast majority of mothers in this study had no formal education.

Table 5. *Number of children under 5 years old*

Number of children	Frequency	Percent
0	9	2.0
1	198	44.0
2	148	32.9
3	59	13.1
4	34	7.6
5	1	.2
Total	449	99.8

In this survey of 450 children, only 44% were those children who were the only under 5 years old of the family, and 32.9 % of the children's families had one more under 5 years old boy.

Table 6. *Number of those children who were siblings to the evaluated child*

Number of children	Frequency	Percent
1	31	6.9
2	52	11.6
3	64	14.2
4	59	13.1
5	75	16.7
6	76	16.9
7	37	8.2
8	27	6.0
9	13	2.9
10	8	1.8
11	4	.9
12	2	.4
14	2	.4
Total	450	100.0

Traditional families in our country like to have more children, in this survey among the participants, the proportion of those mothers who had 6 children was higher than others. Of all of those mothers, 16.9% (76) mothers or caretakers had 6 children, and the second big portion were those mothers who had 5 children 75 mothers or (16,7%).

Table 7. *Correlations among variables*

	1	2	3	4	5	6	7	8	9	10	11
1. MUAC											
2. Mother Education Statute	.25**										
3. gender of children	-.05	-.05									
4. Marital state of the mother	-.08	-.02	-.06								
5. Number of siblings	-.06	.19**	.12*	.05							
6. Number of children under 5 years old	.05	.15**	.07	-.01	.51**						
7. Body weight (Kg)	.52**	.17**	.10*	-.08	-.11*	-.01					
8. Economic status of the family	.14**	-.06	.	.10*	.09	-.09	.18**				
9. Drinking of Breast Milk	.22**	-.08	.01	.01	-.04	.13**	.22**	.43**			
10. Distance with other children	-.04	-.04	-.01	.10*	-.04	.12**	.06	-.02	.01		
11. Age of children	.28**	-.09	-.05	.04	-.02	.04	.51**	-.12*	.11*	.02	

Note. * $p < .05$; ** $p < .01$

- Children who drink breast milk tend to have a higher MUAC. (Moderate positive correlation ($r = .22$, $p < .01$))
- Mothers with higher education levels tend to have fewer siblings' children. (Positive correlation ($r = .19$, $p < .01$), implying that)
- Showing that better-educated mothers may have a different family planning pattern affecting the number of young children. (Positive correlation ($r = .15$, $p < .01$))
- Slight association where families with more siblings might experience different economic conditions. (Positive correlation ($r = .09$))
- Families with better economic status are more likely to provide breast milk. (Strong positive correlation ($r = .43$, $p < .01$))
- Reflecting a link between economic status and body weight. (Positive correlation ($r = .18$, $p < .01$))
- Showing that older children might be less likely to drink breast milk than younger ones. (Positive correlation ($r = .11$, $p < .05$))

Conclusion of the correlation test

The correlation analysis reveals several important relationships among the variables studied. Notably, body weight shows strong positive correlations with MUAC and the number of children under 5 years old, suggesting that higher body weight is associated with better nutritional status and potentially larger MUAC. Maternal education and economic status also demonstrate significant associations with various factors, reflecting their potential impact on child development and family dynamics. Further research could explore these relationships in more depth and consider potential causative factors influencing these correlations.

Discussion

This study assessed the prevalence and associated factors of acute malnutrition among under-five children attending Comprehensive Health Centers (CHCs) in Kandahar City, Afghanistan. The findings revealed a high prevalence of acute malnutrition, indicating that undernutrition remains a major public health problem among children in this region. The study also identified several important associated factors, including low maternal education, poor socioeconomic status, large family size, short birth intervals, and inadequate breastfeeding practices.

The majority of malnourished children in this study were between 7 and 18 months of age. This finding may be related to the transition period from exclusive breastfeeding to complementary feeding, during which many children do not receive sufficient nutritious food. Children in this age group are also more vulnerable to infections such as diarrhea and respiratory diseases, which further contribute to poor nutritional status. Similar findings have been reported in studies conducted in Afghanistan, Pakistan, Somalia, and Ethiopia, where younger children were found to

be at higher risk of acute malnutrition (Frozanfar et al., 2013; Laghari et al., 2015; Omer et al., 2020; Tekile et al., 2019).

The prevalence of severe acute malnutrition identified in this study was higher than the prevalence reported in some previous studies conducted in Afghanistan. For example, a hospital-based study conducted at Mirwais Regional Hospital in Kandahar reported a prevalence of 14.41% among hospitalized children (Zafari et al., 2023), while a study conducted in Faryab Province reported a prevalence of 3.7% using weight-for-height measurements (Frozanfar et al., 2013). The higher prevalence observed in the present study may be associated with worsening socioeconomic conditions, food insecurity, political instability, unemployment, and limited access to healthcare and nutritional support services in recent years.

Maternal education was strongly associated with child nutritional status in this study. Most mothers or caretakers were uneducated, and children of uneducated mothers were more likely to experience malnutrition. Educated mothers are generally more aware of proper child feeding practices, hygiene, vaccination, and healthcare utilization, all of which play important roles in preventing malnutrition. Similar associations between low maternal education and childhood malnutrition have been reported in previous studies conducted in Afghanistan and other developing countries (Omer et al., 2020; Tekile et al., 2019).

Family size and the number of children under five years of age were also important factors associated with malnutrition. Families with many children may experience difficulties in providing adequate food, healthcare, and attention to each child due to limited financial resources. Short birth intervals may further increase the risk of malnutrition because mothers may not have sufficient time to recover nutritionally before the next pregnancy and childcare period. These findings are consistent with studies conducted in Pakistan and Sudan, which reported higher malnutrition rates among children from large families and low-income households (Laghari et al., 2015; Musa et al., 2014).

Breastfeeding practices also showed an association with better nutritional status. Children who received breast milk had better MUAC measurements compared to those who did not. Breastfeeding provides essential nutrients and immune protection, particularly during the first two years of life. Inadequate breastfeeding and poor complementary feeding practices can significantly increase the risk of acute malnutrition and infectious diseases among young children.

The findings of this study highlight the broader impact of poverty, food insecurity, and social instability on child health in Afghanistan. Decades of conflict, displacement, drought, unemployment, and economic crisis have negatively affected household food availability and access to healthcare services. These challenges disproportionately affect children under five years of age, who are among the most vulnerable groups in the population.

This study has several strengths, including the collection of primary data directly from mothers and caretakers attending CHCs and the use of anthropometric measurements to assess nutritional status. However, some limitations should also be considered. Since the study was conducted only in three CHCs in Kandahar City, the findings may not fully represent the nutritional status of all children in Kandahar Province or Afghanistan. In addition, the cross-sectional study design does not establish causal relationships between malnutrition and associated factors. Despite these limitations, the study provides important local evidence regarding the prevalence and determinants of acute malnutrition among under-five children in Kandahar.

Overall, the findings demonstrate that acute malnutrition remains highly prevalent among under-five children in Kandahar City and is closely associated with maternal education, family size, poverty, and feeding practices. Addressing these factors through community-based nutrition programs, maternal education, improved food security, and strengthened healthcare services is essential for reducing childhood malnutrition and improving child survival in Afghanistan.

Conclusion

This study revealed a high prevalence of acute malnutrition among under-five children attending Comprehensive Health Centers in Kandahar City, Afghanistan. Severe acute malnutrition was identified as a significant public health concern among the study population. Several factors were associated with poor nutritional status, including low maternal education, large family size, the presence of multiple children under five years of age within the household, low socioeconomic status, and inadequate breastfeeding practices. Children aged 7-18 months appeared to be particularly vulnerable to malnutrition.

The findings highlight the urgent need for strengthened nutrition interventions, improved maternal education, promotion of appropriate infant and young child feeding practices, and enhanced socioeconomic support for vulnerable families. Community-based nutrition programs and strengthened primary healthcare services may play an important role in reducing the burden of childhood malnutrition in Kandahar and similar settings. Despite certain limitations, this study provides valuable local evidence that can support policymakers, healthcare providers, and development partners in designing targeted strategies to prevent and manage acute malnutrition among children under five years of age.

Recommendations

1. Since the study found that 95.1% of malnourished children had uneducated mother, so there is a strong need for mothers and caretakers to get education and attend workshops on general food awareness and nutrition.
2. International donors and Afghan national agencies should provide support to improve the socioeconomic status of the population, particularly vulnerable families.

3. People should be educated about and encouraged to practice proper personal hygiene and sanitation to help prevent malnutrition.
4. Medical researchers should conduct further studies to investigate the prevalence and mortality rate of acute malnutrition among children in districts and rural areas of Afghanistan.

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د کندهار ښار په روغتیايي مرکزونو کې د پنځو کلونو څخه په کم عمره ماشومانو کې د حادي خوارځواکي خپرېدل او ورسره تړلي عوامل

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لنډیز

خوارځواکي (Malnutrition) د ناروغۍ هغه حالت ته ویل کېږي، چې د یوه یا څو ضروري غذايي موادو د نسبي یا مطلق کمښت یا زیاتوالي له امله رامنځته کېږي. خوارځواکي اوس هم د عامي روغتیا په برخه کې په ټوله نړۍ کې یوه جدي ستونزه ګڼل کېږي او تر ۵۰ میلیونه زیات هغه ماشومان اغېزمنوي چې عمر یې له پنځو کلونو څخه کم وي. دا روغتیايي ستونزه هر کال شاوخوا ۸٪ د نړۍ د ماشومانو د مړینې سبب ګرځي. د دې څېړنې موخه په کندهار کې تر پنځو کلونو کم عمره ماشومانو کې د حادي خوارځواکۍ د کچې او اړوند عواملو معلومول وه. دا مقطعي (Cross-sectional) څېړنه په درېیو روغتیايي مرکزونو کې په ۴۵۰ هغه ماشومانو کې تر سره شوې ده، چې عمر یې تر پنځو کلونو څخه کم وو او د نمونې اخیستنې له پاره تصادفي میتود (Random Sampling) وکارول سو. ډاټا د څلورو قابلو او دوو طبي محصلانو په مرسته د منظم پوښتنلیک له لارې راټوله سوه، او همدارنګه د ګډونوالو انټروپومیټریک اندازه ګیرنې (Anthropometric measurements) هم ترسره سوه. وروسته له دې ډاټا SPSS ته داخله سوه، احصایوي تحلیل پر ترسره سو، ترڅو د خوارځواکۍ او له هغه سره تړلي مهم عوامل وپېژندل سي. د دې څېړنې د ډیموګرافیکو پایلو له مخې، ۴۳،۱٪ ماشومان هلکان او ۵۶،۹٪ انجونې وې او ۷،۳٪ ماشومان د حادي خوارځواکۍ له خطر سره مخ ول. د څېړنې له مخې، ۹۵،۱٪ میندي نالوستي وې او له دغو میندو څخه ۱۶،۹٪ داسې وې چې له پنځو څخه زیات یا شپږ ماشومان یې درلودل، چې دا هم د ماشومانو د خوارځواکۍ یو مهم عامل ګڼل کېدای سي. سربېره پر دې، ۵۳،۸٪ میندو د یوه څخه زیات تر پنځو کلونو کم عمره ماشومان لرل. پایلو وښودله چې په کندهار ښار کې د پنځو کلونو کم عمره ماشومانو ترمنځ د حادي خوارځواکۍ کچه لوړه ده، په ځانګړې ډول په هغو کورنیو کې چې اقتصادي وضعیت یې کمزوری دی او میندې یې نالوستي وې. د میندو د زده کړو پیاوړتیا، د خوړو خوندیتوب ښه کول او په ټولنه کې د تغذیوي پروګرامونو پراخول د سیمې د ماشومانو د خوارځواکۍ د کمولو له پاره ډېر مهم دي.

کلیدي کلمې: حاده خوارځواکي، خطري فکتورونه، د پنځو کلونو څخه کم عمره ماشومان، روغتیايي مرکزونه، سوء تغذیه

Proportion and Associated Risk Factors of Iron Deficiency Anemia Among Under-5 Anemic Children in 2022, Mirwais Regional Hospital, Kandahar, Afghanistan

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Abstract

Iron deficiency anemia (IDA) remains a major cause of childhood morbidity worldwide, yet limited data exist on its burden and risk factors among young children in Kandahar, Afghanistan. This study seeks to comprehensively evaluate the proportion of iron deficiency anemia and identify its key contributing factors in children aged under five years in Mirwais Regional Hospital. The study was cross-sectional design, the study gathered data through structured questionnaires covering dietary habits, medical history, and socio-economic status. Laboratory assessments including serum iron levels and complete blood count were crucial in diagnosing IDA while stool examinations were performed to identify intestinal parasites known aggravators of iron deficiency. Additionally, nutritional status was assessed using mid-upper arm circumference (MUAC) measurements. The results of the study revealed a significant proportion (p-value of less than 0.05) of IDA affecting 139 (36.7%) of the 378 children admitted to MRH. The Proportion of moderate anemia is 68.3%, and 69% among children from rural areas as compared to urban area; most (82%) of the anemic children were aged 12-36 months. By identifying both nutritional and environmental risk factors, the research offers valuable insights that can guide targeted interventions. These findings not only highlight the urgent need for improved public health strategies but also emphasize the importance of community awareness initiatives focused on nutrition and hygiene to mitigate the impact of IDA in the region.

Keywords: Iron deficiency anemia, proportion, children, risk factors, malnutrition

Introduction

Anemia occurs when the body's oxygen-carrying capability or the quantity of red blood cells is inadequate to satisfy its needs. Although there might be several interconnected contributing factors, dietary deficiencies in both iron and zinc are the most typical causes (Mantadakis et al., 2020). For all phases of human growth, iron is a necessary nutrient. Because of the profound effects it has on children's development, it is particularly crucial (Lozoff et al. 2006).

The most prevalent and frequent nutritional condition in the world is iron insufficiency. Anemia caused by iron deficiency affects 8–14% of children in the US between the ages of 12 and 36 months. Compared to adults who have 5 g of iron, a full-term newborn baby has around 0.5 g of iron. Iron must be absorbed daily on average throughout the first 15 years of life due to the shift in iron levels from birth to maturity (Lutter, 2008). It is therefore necessary to absorb approximately 1 mg daily to maintain positive iron balance in childhood.

A small additional amount is necessary to balance normal losses of iron due to shedding of cells (Lutter, 2008). Because <10% of dietary iron is usually absorbed, a dietary intake of 8-10 mg of iron daily is necessary to maintain iron levels (Chattha et al., 2018). During infancy, when growth is most rapid, the 1 mg/L of iron in cow's and breast milk makes it difficult to maintain body iron. Compared to infants given cow's milk, breastfed babies have an advantage in that they absorb iron 2-3 times more efficiently.

However, if breastfed babies do not regularly consume foods supplemented with iron by the time they are 6 months old, they risk the danger of losing iron. For the central nervous system to grow and develop, especially in childhood, iron is also essential. Brain development, myelination, the activity of monoamine neurotransmitters, and the metabolism of glial and neuronal energy all depend on iron (Lutter, 2008).

Iron deficiency (ID) is a global health problem that can be defined as plasma ferritin <12 µg/L. ID is characterized by plasma ferritin levels less than 12 µg/L without any correction for inflammation or infection (Pasricha et al., 2013). It affects children's cognitive ability in addition to their psychomotor development.

Among young children worldwide, it is the most prevalent micronutrient deficiency because of their fast development and high iron needs. About 2 billion people worldwide are impacted by ID, mostly in developing nations, particularly pregnant women and children under the age of five. Since low iron bioavailability and inadequate nutritional iron intake are thought to be the

main causes of ID, IDA is recognized as the proxy indication of ID (Turawa et al., 2021).

Following the three stages of iron deficiency iron storage depletion and iron-deficient erythropoiesis iron-deficiency anemia (IDA) is the final outcome. Children under five who suffer from IDA, a micronutrient deficit, are affected in both wealthy and developing nations. When IDA affects more than 5% of the population, it is regarded as a public health issue. Billions of people worldwide suffer from anemia, with small children and expectant mothers being the most susceptible. Half of the anemia proportion in the world is caused by IDA (Karami et al., 2022).

The most severe kind of ID, known as IDA, is thought to impact 20% to 25% of preschool-aged children globally, with South Asia and Africa having the highest frequency (Stevens et al., 2013). Compared to Asia and Africa, Europe has a lower proportion of IDA in toddlers. Even while children are more susceptible to ID than adults, IDA disproportionately affects them, especially in poor nations like Afghanistan (Black et al., 2013).

Finally, recognizing risk factors is important for IDA and ID prevention and early identification. The aim of this study is to determine the proportion of ID and IDA in Kandahar, Afghanistan among children under the age of five along with the characteristics that are related to them (Gao et al., 2013).

1 . Research Objectives

1. To determine the proportion of IDA among under-5 anemic children admitted to Mirwais Regional Hospital (MRH).
2. To identify and analyze the nutritional and environmental risk factors associated with IDA in these children.

2 . Research questions

1. What is the proportion of iron deficiency anemia among under-5 anemic children admitted to Mirwais Regional Hospital?
2. What risk factors are associated with IDA among under-5 anemic children at Mirwais Regional Hospital?

3 . Materials & Method

Research Design

To evaluate the proportion of IDA and pinpoint risk variables linked to it, a cross-sectional approach was utilized. In order to gain the data on the participants' food preferences, medical histories, and demographic and socioeconomic characteristics, the study used structured questionnaires. To

ascertain the iron status, laboratory procedures were performed, such as measuring serum iron levels and doing a complete blood count (CBC) to assess hemoglobin concentration and other blood parameters that may indicate anemia.

We utilized serum iron level since it is more bioavailable and good marker in diagnosing IDA. Furthermore, stool tests were conducted to screen for intestinal parasites, which are known to exacerbate iron deficiency. The children's nutritional condition was evaluated by anthropometric measures, with the mid-upper arm circumference (MUAC) serving as a marker for malnutrition.

This all-encompassing strategy made it possible to analyze the proportion of IDA in detail and pinpoint important risk factors for the under-five population in the research region.

Participants

The study included 378 anemic children under the age of five admitted from February 2022 to November 2022 to the pediatric ward of Mirwais Regional Hospital for several morbidities. Because only anemic children were enrolled, the study does not estimate population Proportion but rather the proportion of iron deficiency among anemic under-5 children

Inclusion criteria

The children were included who were under 5 years old and those who were anemic and were admitted to MRH pediatric ward.

Exclusion criteria

The children who were more than 5 years old and those who not anemic and whose mother or caretaker were not willing to be part of the study.

Data Collection

Structured questionnaires were used to gather data from the caregivers. Socioeconomic position, food habits, medical history, and demographics were all included in the surveys. These parameters were measured in blood samples: red cell width (RDW), serum iron levels, mean corpuscular volume (MCV), mean corpuscular hemoglobin (MCH), mean corpuscular hemoglobin concentration (MCHC), and hemoglobin. Intestinal parasites were detected in stool samples while malarial parasites were detected in blood testing.

Instrument

The data for this study were collected using a structured questionnaire, specifically designed to gather the data from mother and caretakers of the anemic children under five years of age. The questionnaire was developed to

address the key aspects of anemic children research questions and goals. The questionnaire comprised a range of closed items to capture quantitative data and qualitative insights

Laboratory Analysis

Hemoglobin Measurement: A conventional hematology analyzer was used to determine the levels of hemoglobin, MCV, RDW, serum iron level, and malarial parasite. Stool specimens were collected for microscopic analysis of intestinal parasites.

Statistical Analysis

R was used for the data analysis. The data were summarized using descriptive statistics, and risk variables connected to IDA were found using logistic regression. Odds ratios (OR) and confidence intervals (95%) were calculated. Statistical significance was defined as a p-value of less than 0.05.

Research Ethics

All ethical issues were considered and the study was conducted after approval from the public health office of Kandahar, the main head office of MRH and the chief of pediatric ward of MRH. Verbal consent of mother/caretakers of study subjects was obtained and the objective of the study was explained to them. Privacy and confidentiality of collected information was ensured at all levels. There was no copy-paste information without the mentioning of the researcher's name.

Results

Out of 378 anemic children, 139 (36.7%) were diagnosed with iron deficiency anemia, while the remaining were found to be non-iron deficient. The following are the parameters and determinants of these results.

Demographic Characteristics

Proportion of anemia in children based on mother age whether its prominent in older or younger mother's children according to our data analysis 25% anemic children were of very young mothers aged between 16-25 in contrast to 38% and 35% anemic children were born to mothers aged between 26-30 and 31-40 years old respectively. 2% of children were born to mothers aged more than 41 years. (Figure 1)

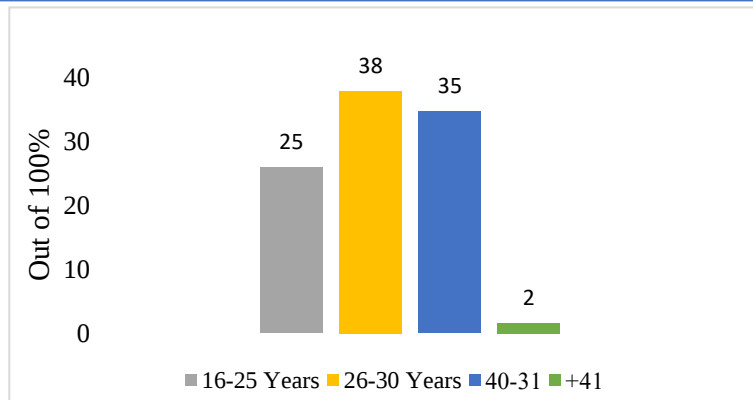


Figure 1. Age of Mothers

This findings show majority of participants were living in rural area which is 69%, and 31% of the participants were living in urban areas. Those living in rural areas are greater in proportion of anemia in under 5 years of children relates to their poor socio-economic status, iron deficient diet (dairy and vegetables), monotonous diet, resides more household members and lack of mother's education. In comparison to urban areas the socio economic status is relatively better, slightly more access to nearby health facilities and relative less members of family reside in a single house. Moreover, families in Kandahar do not follow family planning and less community awareness.

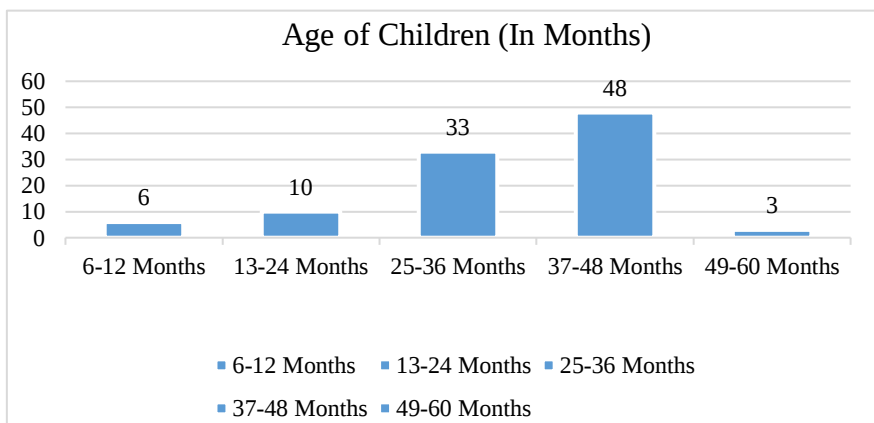


Figure 2. Anemia age vice

Majority of the anemic participant in this study were aged 37-48 months old which is 48%, proceeded by patients aged 25-36 months old children is 33%. 10% were aged 13-24 months, 6% were aged 6-12 months aged and only 3% were aged more than 49 months (Figure 2). Among these patients 49% were female and 51% were male candidates.

Socio-economic Factors

Iron deficiency anemia (IDA) is closely intertwined with socioeconomic status, as poverty and limited access to resources significantly contribute to its Proportion. According to this study (Table 1) 69% participants were from rural area where access to quality food and health system is very limited, and 31% were from urban area in the context of Afghanistan especially Kandahar access to drinkable water, quality food and health facilities. Despite the scarcity of all these resources there is very low literacy rate among the families living in Kandahar region. In this study most of the family source of income was from agriculture 41% and farming which is not durable among the seasons. And 32% were shopkeepers with their own small businesses. (Table 2)

Table 1. *Participants according to living area*

Living area	Frequency	Percentage %
Children from rural area	261	69%
Children from urban area	117	31%

Table 2. *Occupation of the breadwinner*

Occupation of Father	Percentage %
Agriculture	41
live stock (Farming)	11
Salary	7
Business	32
No source	9

Nutritional Factors

Nutritional factors are one the leading risk factor for anemia in children of preschool age. This study marked that 46% of children received exclusive breast feeding and 54% percent of the children didn't receive exclusive breast feeding (Table 3), even though, mother milk is not sufficient in iron but it has more absorption rate than animal milk. Most of the children in this study

received colostrum which are 94% and children didn't received colostrum were 6% (Table 3).

Children breast fed in the first hour of life were 29.29% and 70.71% were not breast fed in the first hour (Table 3). 58% children got weaning at 6 months of age and 25% children were given weaning before 6 months of age (Table 4). The latter one is because of mother milk insufficiency and lack of health education. 17% of children, weaning was initiated after 6 months of age, 20% were feed by meat once or twice a week and 80% were not given meat in their diet, this is because of low socioeconomic status of the family (Table 4).

Table 3. *Breastfeeding state*

First hour breastfeeding	
Yes	29.29%
No	70.71%
Colostrum feeding	
Fed with Colostrum	94%
Un Fed with Colostrum	6%
Exclusive breastfeeding	
Yes	46%
No	54%

Table 4. *Child weaning*

Initiation of weaning	
Before 6 months	17%
At 6 months	58%
After 6 months	25%
Meat in weaning	
Fed	20.4%
Not fed	79.6%

Laboratory Results

Children were considered anemic if their hemoglobin levels were less than 11 g/dL.

Serum Iron Measurement: In order to identify iron deficiency, serum iron levels were evaluated. An iron concentration of less than 50 mcg/dL was linked to IDA (Table 5). 139 (37%) out of 378 (100%) children were iron deficient, 196 (52%) children had normal serum iron value and 43 (11%) children had above normal serum iron (Table 5). Out of the total 378 children 354 (94%) were microcytic, 16 (4%) children were normocytic and 8 (2%) children were macrocytic (Table 5).

Majority of the participants were moderate anemia 68.3%, and some of them were mild or sever anemic 16.1 and 15.6 respectively. (Figure 3)

Table 5. *Level of serum iron, MCV, RDW*

N0	Description	Below Normal	Normal	Above Normal	Normal Range According to WHO guideline
1	Serum Iron Level	N= 139	N= 196	N= 43	50-120mcg/dL
	Percentage	37%	52%	11%	
2	MCV ¹	N= 354	N= 16	N= 8	80-95 fL
	Percentage	94%	4%	2%	
3	RDW ²	N= 0	N= 156	N= 222	11.3-15%
	Percentage	0%	41%	59%	

¹Mean corpuscular volume (MCV) ² Red cell distribution width (RDW)

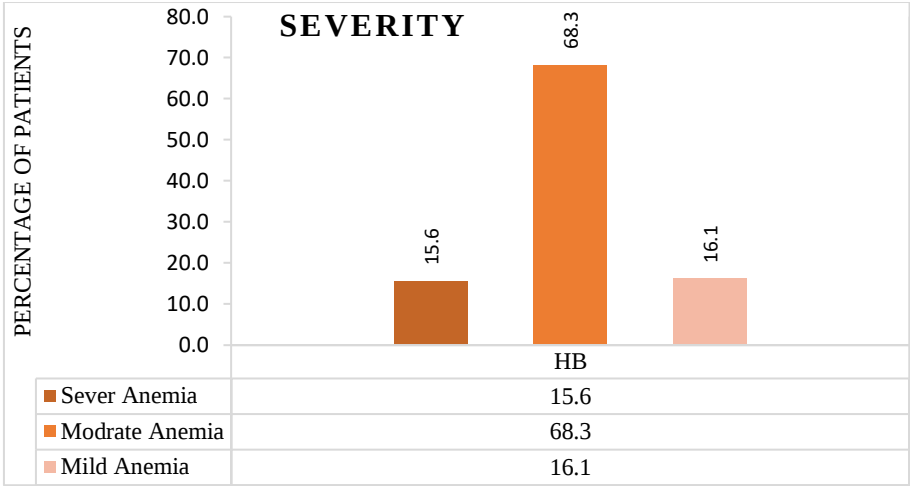


Figure 3. Anemia Severity indicating by HB in blood, Mild anemia 10.9-10 g/dL, Moderate anemia 9.9-7 g/dL, severe anemia <7 g/dL

Environmental Factors

Intestinal parasite is common risk factor of iron deficiency anemia in developing countries, in this study (Table 6) around 32 children (7.9%) were infested by Entamoeba Histolytica, 30 children (8.4%) had positive stool for Trophozoites Giardia Lamlialis, 27 participants (7.1%) were infested by Entamoeba Coli. Only 1 child (0.2%) had Trichomonas Intestinalis in stool sample. 288 (76.1%) patients were free of intestinal parasite. And no single patient was malarial parasite positive.

Table 6. Intestinal and extraintestinal infections

No	Infectious Agent	Seen patients	in Not seen	# patients	Screen
1	Giardia lamblia trophozoite	30 (7.9%)	348	378	
2	Entamoeba Coli	27 (7.1%)	351	378	
3	Entamoeba Histolytica	32 (8.4%)	346	378	
4	Trichomonas Intestinalis	1 (0.2%)	377	378	
Blood Screen for Malarial Parasite					
1	Malarial Parasite	0	378	378	

Discussion

Globally, iron deficiency anemia (IDA) affects an estimated 42% of children under five (WHO, 2021). It is still a prevalent health concern. The research done at the Mirwais Regional Hospital in Kandahar, Afghanistan, has yielded findings that are consistent with previous studies, highlighting the crucial susceptibility of young infants in areas characterized by violence and financial difficulties. In line with or somewhat lower than previous studies conducted in similar contexts, the proportion of IDA in the study population was determined to be 36.7%.

According to Kassebaum et al., (2016), the study emphasizes how children under five are more vulnerable to iron deficiency anemia (IDA) because of their fast development and higher iron needs, which are frequently unsatisfied by inadequate food consumption. These vulnerabilities are made harsher in Kandahar by food instability and interruptions in healthcare services, which helps to explain why this population has a higher Proportion of IDA than other locations (Kumar et al, 2020). This emphasizes how urgently region-specific programs that address the issues of nutrition and healthcare in conflict-affected communities are needed.

The importance of poor food intake as a key risk factor for IDA is a noteworthy conclusion of this study. The dietary pattern found in 79.6% of the children under investigation was characterized by low diversity and restricted intake of items high in iron. This dietary shortfall is a reflection of the monotonous meals typical in Kandahar, which are deficient in important micronutrients such as iron (Ahmad et al., 2018; Al-Zabedi, 2014). These results emphasize how important it is to put in place educational initiatives and nutritional treatments targeted at enhancing eating habits in order to lessen the burden of IDA in this susceptible group (Gao et al., 2013).

In addition, this study showed that intestinal parasites, in particular, are a significant risk factor for infectious illnesses. According to Wasihun et al., (2020), there were 23.6% of the anemic children who had such illnesses. This shows the combined effect of malnutrition and infection, which raises iron demand owing to chronic inflammation and blood loss and inhibits iron absorption. These findings support earlier research and highlight the significance of integrated health approaches that simultaneously treat dietary inadequacies and infectious disorders (WHO, 2021; Turawa et al., 2021).

The proportion of IDA was also shown to be significantly influenced by socioeconomic variables. According to the current study, children from lower-class homes were 68% more likely than those from higher-class families to suffer from anemia. Moreover, the study indicates that lower maternal

education levels, which are found in 97.01% of the cases, are associated with a lack of knowledge about appropriate child feeding, which exacerbates the problem (Gao et al., 2013). The results highlight the urgent need for socioeconomic interventions that increase the availability of economic and educational possibilities, since they are crucial for addressing the underlying causes of IDA (Black et al., 2013).

Furthermore, it was shown that a mother's health and her nursing habits were important indicators of her child's iron status. According to Victora et al., (2016), there was a 54% higher chance of getting IDA among children whose mothers had low nutritional status or who were not exclusively breastfed. This research emphasizes how critical it is to support exclusive breastfeeding and mother nutrition as essential elements of public health initiatives meant to lower the risk of anemia in early children in Kandahar (Bhutta et al., 2013).

According to Sharma et al. (2024), IDA has a significant negative influence on children under five years old's cognitive and motor development as well as their general health. Children with IDA are more likely to experience developmental delays, higher rates of morbidity, and death in areas like Kandahar, where violence and poor access to healthcare compound important problems. According to the study's findings, children with IDA showed delayed developmental milestones, which is problematic since it may have long-term effects on the children's ability to complete their schooling and become economically productive adults (Oppenheimer, 2001; Gedfie et al., 2022).

One cannot ignore IDA's wider social and economic ramifications. Long-term cognitive impairments associated with early childhood anemia have been related to lower adult productivity and the continuation of the poverty cycle in areas where IDA is common (Grantham-McGregor & Ani, 2001). Given that IDA's pervasive effects in Kandahar pose a danger to public health and economic development initiatives, a comprehensive approach to addressing this issue is essential.

The study's conclusions highlight the urgent need for focused public health initiatives to alleviate Kandahar's high IDA Proportion among children under five. Through the provision of regional data on the incidence and particular risk factors of IDA, this study highlights the significance of integrated strategies that tackle the dietary and socioeconomic variables that influence anemia. To successfully reduce the frequency of IDA in this susceptible group, future interventions should target increasing maternal education and economic possibilities, reducing infectious illnesses, and boosting dietary diversity.

Implications for Public Health

Improving food habits, expanding access to healthcare for infection treatment and prevention, and putting in place socioeconomic assistance programs are just a few of the many strategies needed to combat IDA. The region's child health initiatives should include regular anemia screenings as well as nutrition instruction for caregivers.

Limitations

The cross-sectional design makes it more difficult to prove causation. Furthermore, the data gathering process depended on reports from caregivers, which might be biased towards memories. Serum iron level is employed for the diagnosis in this study despite the fact that serum ferritin level is more specific for iron deficiency anemia because to its high bioavailability, low cost, and research funding constraints.

Conclusion

This study shows that iron deficiency anemia (IDA) is still a common problem among under-five anemic children in Mirwais Regional Hospital, Kandahar, with a proportion of 36.7%. Most affected children were between 12–36 months of age, which is the period of rapid growth and high iron requirement.

The main contributing factors were poor dietary intake, low consumption of iron-rich foods, inappropriate feeding practices, and low socioeconomic conditions, especially in rural families. Intestinal parasitic infections also played an important role in worsening iron deficiency. These factors often occur together and increase the risk of anemia in young children.

The findings also show that many children already had moderate anemia at the time of admission, which suggests delayed detection and ongoing nutritional problems in the community. This can negatively affect child growth, immunity, and mental development if not addressed early.

Finally, IDA in this setting is mainly driven by preventable factors such as nutrition, hygiene, and poverty. Improving child feeding practices, increasing awareness among mothers, strengthening routine screening, and controlling infections can significantly reduce the burden of anemia in under-five children in Kandahar.

Recommendations

1. Put community-based nutrition initiatives into action to increase kids' food consumption.
2. Expand public awareness programs highlighting the value of breastfeeding, iron-rich diets, health education, and cleanliness.

3. Expand access to medical services to enable early IDA diagnosis and treatment.

Future Research

4. Longitudinal studies are needed to investigate the causal relationships between risk factors and iron deficiency anemia (IDA).
5. Interventional studies are recommended to evaluate the impact of socioeconomic and dietary programs on the incidence of IDA.

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په کندهار کې تر ۵ کلونو کم عمر لرونکو انیمیک ماشومانو کې د اوسپني کموالي انیمیا کچه او اړوند خطري فکتورونه: د میرویس حوزه وي روغتون مطالعه (۲۰۲۲)

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لنډیز

د اوسپني کموالی انیمیا لا هم په نړۍ کې د ماشومانو د ناروغۍ یو لوی لامل دی، خو د افغانستان په جنوب لویدیځ ولایت کندهار کې د کوچنیو ماشومانو ترمنځ د دې ستونزې او خطري فکتورونو په اړه ډېر لږ معلومات سته. د دې څېړنې موخه دا ده، چې د میرویس حوزه وي روغتون د ماشومانو په وارډ کې د بستر سوو تر پنځو کلونو څخه په کم عمره کمځونه ماشومانو کې د اوسپني د کموالي کمځونې (IDA) کچه په هراړخیز ډول وارزوي او هغه عوامل وپېژني، چې د دې ناروغۍ سبب ګرځي. دا څېړنه د مقطعي (cross-sectional) ډیزاین پر بستر ترسره شوې ده. ډاټا ئې د پوښتنلیکونو په واسطه راټوله شوې ده، چې پکښې د خوړو عادتونه، صحي سابقه، او ټولنیز-اقتصادي وضعیت شامل ول. لابراتواري ازموینې لکه په وینه کې د اوسپني کچه، د IDA تشخیص له پاره د وینې عمومي معاینه (CBC) او د کولمو د پرازیتونو د معلومولو له پاره د غایطه موادو معاینات ترسره شوي دي. سربېره پر دې، د تغذیې حالت د منځني بازو د قطر (MUAC) له لاري ارزول شوی دی. د څېړنې پایلې وښوله، چې د اوسپني کموالي (کمځونې) یوه د پام وړ کچه چې ۱۳۹ ماشومان (۳۶،۷٪) کېږي له ۳۷۸ بستر سوي کمځونه ماشومان اغېزمن کړي دي. د منځنۍ درجې کمځونې کچه ۶۸،۳٪ وه، او ۶۹٪ پېښې په کلیوالو ماشومانو کې موجودې وې، چې د ښاري ماشومانو په پرتله زیاتې وې. ډېری (۸۲٪) کمځونه ماشومان د ۱۲ څخه تر ۳۶ میاشتو عمر لرونکي ول. د تغذیوي او چاپېریالي خطري عواملو په پېژندلو سره، دا څېړنه داسې ارزښتناک معلومات وړاندي کوي، چې د هدفمند مداخلاتو لارښوونه کولای سي. دا موندنې نه یوازې د عامې روغتیا د ښه والي له پاره د عاجلو ستراتیژیو اړتیا څرګندوي، بلکې د تغذیې او حفظ الصحې په اړه د ټولنې د پوهاوي د زیاتولو اهمیت هم روښانه کوي، ترڅو د همدې سیمې په ماشومانو کې د اوسپني کموالي کمځونې اغېزې راکمې سي.

کلیدي کلیمې: خطري فکتورونه، د اوسپني کموالی، کمځونې کچه، ماشومان

Stress Levels among Medical Students at Kandahar University and Malalay University

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Abstract

Stress is defined as the perception of discrepancy between environmental demands and individual capacities to fulfill those demands. Medical students perceived stress levels are higher than the general population. A high level of stress in medical students may have a negative effect on cognitive functioning and learning of them in universities. Stress prevalence and burden is growing worldwide during medical trainings. The objective of the research is to determine the level of stress and to find stress associated factors among medical students in Kandahar University and Malalay Private University. This is a cross-sectional study conducted among 413 medical undergraduate students of two medical faculties of Kandahar University and Malalay University from January 2023 to February 2023. The participating medical faculties were selected purposively. The data was collected by a questionnaire Perceived Stress Scale (PSS) to explore the stress level of medical students. The students who consented to participate in the study were asked to complete self-administered questionnaire consisting of the following sections: sociodemographic profile, behavior and life style characteristics of the students and university related characteristics. The prevalence of stress in this study was (7.7%) highly stressed and 41.4% were moderately stressed. Highly perceived stress among public and private universities are the same (7.7%). Moderate stress in private university (46.5%) is high then public university (35.5%). We carried out bivariate analysis and found that factors associated with stress included age of the student ($p=0.005$), employment status ($p=0.009$), daily physical activity ($p=0.024$), sleep quality ($p=0.000$), type of university ($p=0.025$) class rank ($p=0.001$) previous class results ($p=0.010$). Almost 50% of medical students had perceived stress. The high prevalence of stress among medical students in Kandahar underscores the urgent need for universities to implement counseling services, stress management programs, and academic support systems to improve student well-being and academic performance.

Keywords: Academic Performance, Depression, Medical Students, Stress Level, University

Introduction

Stress is defined as the perception of discrepancy between environmental demands (stressors) and individual capacities to fulfill those demands. It occurs when an individual faces a situation that is perceived as over-whelming with which they cannot cope (Rehmani et al., 2018). Nechita et al. (2014) define stress as a state of bodily imbalance due to external threats to homeostasis, noting its varied meanings based on origins and biological influences. He adds that medical students particularly experience significant stress during their first year, stemming from poor study strategies, sleep deprivation, and unhealthy eating habits. (Nechita et al., 2014).

Medical education is viewed as stressful, negatively impacting students' cognitive functioning and learning. Recent literature highlights rising stress levels among medical trainees, with studies indicating issues like depression and suicidal thoughts (Anuradha et al., 2017). Emotional distress may lead to impaired classroom performance, stress-related disorders, and declining academic results. Factors contributing to this stress include academic pressures, uncertain futures, and personal challenges, which can further hinder learning and performance (Anuradha et al., 2017). Furthermore, many factors have been identified that are associated with stress among medical students including academic pressure (Rotenstein et al., 2016), workload (Vitaliano et al., 1989), financial pressure and isolation (Dyrbye et al., 2008), sleep disturbance (Dahlin et al., 2005), uncertainty about future and fear of failure (Kötter et al., 2017).

Studying at medical university is notably stressful, with significant stress arising from educational pressures, separation from family, and changes in social networks, negatively impacting cognitive functioning and mental health. Research indicates high stress levels among students in developing countries, with 53.8% in Pakistan, 60% in India, and 79.3% in China reporting moderate to severe stress. Furthermore, factors such as academic constraints, age, gender, ethnicity, and marital status influence stress and academic performance (Borjalilu et al., 2015). In addition, medical students face significant challenges before entering the job market, despite the seemingly relaxed nature of their studies. They experience immense pressure from prolonged schooling, academic demands, and clinical stress (Mao et al., 2019). Particularly in their first year, students often struggle with stress due to a lack of effective learning strategies, sleepless nights before exams, and poor dietary choices during exam periods (Nechita et al., 2014).

Worldwide, medical colleges are responsible for making sure that medical students have adequate knowledge and skill before taking professional responsibilities. In order to achieve these goals, medical colleges typically use

a curriculum of lectures, simulations supervised practice, mentoring, and hands-on experience to boost individual skill-set. Unfortunately, some aspects of the training process have unintended negative consequences on students' physical and emotional health. Studies revealed that medical students experience a relatively high level of personal distress, with adverse consequences on academic performance, competency, professionalism and health (Eva et al., (2015).

In a study conducted at Aga Khan University in Pakistan from October 2016 to August 2017, 283 students from various health programs reported high levels of anxiety, depression, and stress, as assessed by the Aga Khan University Anxiety and Depression Scale and the Student-Life Stress Inventory. Students from dental hygiene program reported more stressors as compared to MBBS ($p < 0.001$) and SONAM ($p = 0.002$). Identified stressors included exam pressure, academic expectations from families, and homesickness. The findings highlight the prevalence of mental health issues among undergraduate students in medical settings, suggesting that increased awareness and management could enhance student well-being and academic performance (Rehmani et al., 2018).

In a survey conducted among undergraduate medical students at CMH Lahore Medical College, Pakistan, from January to March 2009, perceived stress was measured using a 33-item questionnaire, achieving an 80.5% response rate (161 out of 200 students). The average perceived stress score was 30.84 (SD = 7.01), with higher stress levels reported by female students. By logistic regression analysis, stressed cases were associated with occurrence of psychosocial (OR 5.01, 95% CI 2.44-10.29) and academic related stressors (OR 3.17 95% CI 1.52-6.68). The most common sources of stress were related to academic and psychosocial concerns. 'High parental expectations', 'frequency of examinations', 'vastness of academic curriculum', 'sleeping difficulties', 'worrying about the future', 'loneliness', 'becoming a doctor', 'performance in periodic examinations' were the most frequently and severely occurring sources of stress. There was a negative but insignificant correlation between perceived stress and academic performance ($r = -0.099$, $p > 0.05$). A higher level of perceived stress was reported by the students. The main stressors were related to academic and psychosocial domains. This research suggests further studies to test the association between stressed cases and gender, academic stressors and psychosocial stressors (Shah et al., 2010).

Besides, in another neighboring country to Afghanistan, a cross-sectional study was conducted to assess the perceived stress and its severity, sources and demographic variables in 341 (136 males, 205 females) randomly selected medical students of Tehran university of medical sciences, Iran, in October 2013. A self-administered valid and reliable questionnaire with a possible

range of scores from 0 to 56 was used to collect the data. Stress sources were determined using logistic regression analysis. The overall perceived stress mean was 32.02 (SD = 5.08). Eighty-three percent of the medical students perceived stress. Students in clinical phase perceived more stress than basic sciences ones [OR 2.25, 95% CI 1.809 - 4.032]. Logistic regression analysis showed demographic (including gender and residential status), psychosocial and academic factors and the phase of study as sources of stress. The results of this study show that most of the medical students declared perceived stress. So, a change in medical education environment and empowering students to effectively cope with the perceived stress sources and their families to support their children is needed (Borjalilu et al., 2015).

Twenty-one articles involving 35,160 Chinese medical students were reviewed, revealing a depression prevalence of 32.74% (range: 13.10-76.21%) and an anxiety prevalence of 27.22% (range: 8.54-88.30%). Significant associations with depression include gender, grade level, residence, major satisfaction, and monthly household income. For anxiety, grade level and major satisfaction were noteworthy. Identified risk factors encompass individual, social, economic, and environmental elements, highlighting the need for targeted measures for at-risk medical students (Mao et al., 2019).

A total of 990 (73%) out 1,363 medical students participated in a study, of which 36% were male and 64% were female. The overall prevalence of stress of the study population was 54%. 53% of male and 55% of female were reported suffering from stress. 54% of Year-III students and 55% of Year-IV were noted suffering from stress. There were statistically significant ($p = 0.005$) differences in the level of stress between public (2.84 ± 0.59) and private (2.73 ± 0.57) medical schools students. More than half of Bangladeshi medical students are suffering from measurable academic stress. It would be pertinent if the relevant authorities could address the issue so as to provide a conducive medical learning environment (Eva et al., (2015).

In Tamil Nadu, India, a cross-sectional study examined perceived stress among 750 medical undergraduate students using a self-administered questionnaire. With a high response rate of 93.33%, the mean perceived stress score was 25.64 ± 5.44 . Key determinants of stress included age, year of study, the extensive academic curriculum, fear of poor performance, lack of recreation, loneliness, family issues, and living away from home. Final year students reported higher stress levels. The study suggests the need for curriculum reform, recreation activities, and counseling services to address these stressors (Anuradha et al., 2017).

Medical education induces significant stress among students, as highlighted in a cross-sectional study at King Saud Bin Abdulaziz University

for Health Sciences, Riyadh, which examined perceived stress in batches 9, 10, and 11. Data were collected via the Kessler10 instrument, revealing a mean stress score of 26.03 ± 9.7 among 80 participants. Notably, 33.8% of students experienced severe stress, which correlated significantly with being female and at a junior level. Key stress factors included nervousness, hopelessness, restlessness, and depression, with factor analysis identifying depression, nervousness, and age as critical contributors. The study emphasizes the urgent need for coping programs for medical students (Saeed et al., 2016).

A study conducted in Germany investigated perceived stress among first-year medical students, highlighting that while they experience high stress, theoretical frameworks for understanding this are limited. The research, involving 321 students, employed various scales to measure perceived stress, self-efficacy, optimism, and emotional distress (anxiety and depression). Results indicated that students reported higher perceived stress and emotional distress compared to reference samples, with no significant gender or background differences. Structural equation modeling showed that personal resources like self-efficacy and optimism moderated perceived stress, impacting emotional distress. The findings suggest the need for tailored interventions to support students managing medical curriculum challenges and addressing structural factors, such as course load and exam timing (Heinen et al., 2017).

Stress is the physical and emotional "wear and tear" our bodies experience in response to a changing environment, which can have both positive and negative effects. Positively, stress can motivate action, while negatively, it can lead to distress, rejection, anger, and depression, potentially resulting in health issues. Medically, stress occurs when individuals feel threatened or pressured, leading to hormonal changes that prepare the body for action, increasing heartbeat and blood pressure, while diverting blood flow from less critical areas. Stress can cause various health problems, including angina, asthma, cancer, and depression, and may contribute to conditions like alopecia. While some pressure enhances performance, excessive pressure can lead to distress and hinder coping capabilities, ultimately resulting in illness (Behere et al., 2011).

Finally, this study is intended for the purpose of assessing stress level and stress associated factors in medical students to make us updated on stress level and mainly linked factors in Afghanistan medical universities students. The main goal of this study is to offer the public, government plus public and private universities with data that can assist to deliver more effective stress care, awareness and avoid massive burden of stress.

Research Problem

Humans experience significant stress in daily life, leading to the designation of the current era as the "stress era," with medical students particularly vulnerable to mental health issues. High levels of distress, manifested as depression and suicidal thoughts, affect their academic performance and overall health. Various stressors contribute to this, including pressures to succeed, uncertain futures, challenges in integration, and personal issues like financial and family problems. Numerous studies indicate stress prevalence among medical students varies by country, with rates of 41.9% in Malaysia, 31.2% in British universities, and 61.4% in Thailand.

It is crucial to assess stress in undergraduate students and develop coping strategies, particularly for medical students who show higher stress levels. In Afghanistan, where political isolation and various socio-economic challenges prevail, medical students may experience elevated stress. This research was conducted at the medical faculties of one private and one public university in Kandahar to evaluate the stress levels among these medical students and fill the gap.

Research Objectives

1. To determine the level of stress among medical students of Kandahar University and Malalay University.
2. To find stress associated factors among medical students of Kandahar University and Malalay University.

Research Questions

1. What is the level of stress among medical students of Kandahar University and Malalay University?
2. What are the stress associated factors among medical students of Kandahar University and Malalay University?

Importance of Research

Medical students experience high levels of emotional and mental disturbance due to the extensive knowledge and skills they must acquire, along with a competitive environment demanding personal sacrifices. This stress contributes to psychological issues like depression and anxiety and can also affect physical health. The review discusses the prevalence and impact of stress on medical students' academic progress and future careers. A study conducted in Kandahar, Afghanistan aimed to identify stress levels and factors related to stress among the medical students, informing educational authorities to develop effective interventions for managing stress.

Materials & Method

Study Design and Setting

This is a cross-sectional study conducted among medical undergraduate students of two medical faculties of two universities in Kandahar, Afghanistan from January 2023 to February 2023. Both faculties of Kandahar University and Malalay University were selected purposively. Kandahar University is public and the Malalay University private. These medical faculties follow common curriculum formulated by the ministry of higher education of Afghanistan.

Study Population

The population in the study which were included was 413 undergraduate medicine students from medical faculties of Kandahar University and Malalay University. All the undergraduate medical students from first, third and sixth years were invited randomly to participate in the study. The source population is comprised of only male students and female undergraduate medical students are not included in the study because of the governmental restriction on them. Inclusion criteria included medical students from the first, third, and sixth years, while exclusion criteria consisted of students who were absent on data collection days.

Sample Size & Sampling Procedures

Sample size was determined using the single population proportion formula:
 $n = Z^2pq/d^2$

n = sample size

Z = the standard normal deviate, set at 1.96 (95% confidence level)

p = The Level of stress = (not known, for high variety, 0.50 is chosen)

$q = (1 - p) = (1 - 0.50) = 0.50$

$d = 0.05$

$n = Z^2pq/d^2 = [(1.96)^2 (0.50 \times 0.50)] / (0.05)^2 = [3.8416 \times 0.25] / 0.0025 = 384$

Allowing for a 10% nonresponse rate, a sample size of 422 is adequate.

Sampling Strategy

The Medical faculties of Kandahar University and Malalay University were selected purposively. The undergraduate medical students of first, third and sixth years of both faculties were selected randomly. The sample size (422) was determined using the single population proportion formula: $n = Z^2pq/d^2$ as it is written above. 10% nonresponse rate was estimated. we included 413

students with their complete data set. The institutional ethical approval was obtained before data collection was commenced. Students were informed that their participation was completely voluntary with a choice to remain anonymous.

Data Collection Methods

The study employed the Perceived Stress Scale (PSS) questionnaire to assess stress levels among medical students. Participants were informed about the study's purpose and provided consent before completing the self-administered questionnaire, which took approximately 15 minutes. The questionnaire included sections on sociodemographic profiles, behavior and lifestyle characteristics, and university-related characteristics.

Instrument

The developed and validated instrument consists of a questionnaire tailored for the Afghan context, encompassing three sections: socio-demographic characteristics, behavior and lifestyle characteristics, and university-related characteristics. It collects data on factors such as age, marital status, physical activity, perceived stress, chronic diseases, and satisfaction with university experiences. A key component is the 10-item Perceived Stress Scale (PSS), known for its reliability (Cronbach's alpha of .942), which evaluates how individuals have felt over the past month regarding stress. This tool has a longstanding reputation for effectively assessing stress levels across various situations.

1. Scores ranging from 0-13 would be considered low stress.
2. Scores ranging from 14-26 would be considered moderate stress.
3. Scores ranging from 27-40 would be considered high perceived stress.

Data Analysis

The data was first entered into MS Excel for clean-up and later is imported into IBM SPSS 21.00. For descriptive statistic, the frequency and percentage values are used. To determine stress associated factors, chi-square is performed.

Ethical Consideration

The research and ethics committee approved the study. The institutional ethical approval was obtained before data collection was commenced. Students were informed that their participation was completely voluntary with a choice to remain anonymous. The students participated in the study voluntarily. The secondary data which is used in this research report is not written without mentioning the names of authors and sources.

Results

Socio-demographic Characteristics:

In this study 413 of 422 medical students responded the questionnaire voluntary giving overall response rate was 98% with the following distribution: Age of medical students were 18-25 years old (67.8%), 22.3% were <18 years old and 9.9% were >25 years old. All of them were male students (100%). In term of marital status (73.4%) were single, 24.2% were married. There were (64.9%) urban area residents and (35.1%) rural area residents. Beside university studies 21.8% students had public duties, 30.3% had private duties but 70.9% did not have any duty and monthly income. Other important information's are in Table 1.

Table 1. *Socio-demographic characteristics of the students (n=413)*

Variables	Frequency (%)
Age in years	
1. 18-20	92 (22.3)
2. 21-25	280 (67.8)
3. >25	41 (9.9)
Sex	
1. Male	413 (100)
2. Female	0 (0)
Marital status	
1. Single	303 (73.4)
2. Married	100 (24.2)
3. Other	10 (2.4)
Residency	
1. Urban	268 (64.9)
2. Rural	145 (35.1)
Employment status	
1. Private	30 (7.3)
2. Government	90 (21.8)
3. Jobless	293 (70.9)
Monthly income	
1. Yes	120 (29.1)
2. No	293 (70.9)

Behavior and Life Style Characteristics:

According to physical activity 45% medical students had daily physical activity. In addition, 14.3% of students were addicted of cigarettes and sniffing. Regarding university regulations 5.1% students have broken university rules. In reference 72.2% of students were able to learn lessons appropriately, 14.8% of students were learning university lessons hardly and 13.1% students were learning lessons easily. Belong to the interest with studies 54.5% of students had good interest, 23% had very good interest and 22.5% had weak interest with university lessons. Related to sleep quality 36.3% of students had very good quality of sleep, 52.8% had good quality and 10.9% of students had bad quality of sleep. Among 413 participants 25.9% of students had Perceived Stress before admission of the university. According to perceived health status 39% of students answered that they had very good health status, 55.2% answered good health status and 5.8% answered bad perceived health status and finally 18.2% of medical students had chronic diseases. For further information refer to table 2.

Table 2. *Behavior and Life Style Characteristics of the students (n=413)*

Variables	Frequency (%)
Daily physical activity	
1. Yes	186 (45)
2. No	227 (55)
Addiction	
1. Yes	59 (14.3)
2. No	354 (85.7)
Breaking university regulations	
1. Yes	21 (5.1)
2. No	392 (94.9)
Quality of learning the lessons	
1. Hard to learn	61 (14.8)
2. Appropriate to learn	298 (72.2)
3. Easy to learn	54 (13.1)
Interest of students with study	
1. Weak	93 (22.5)
2. Good	225 (54.5)
3. Very Good	95 (23)
Quality of sleep	
1. Very Good	150 (36.3)
2. Good	218 (52.8)

3. Bad	45 (10.9)
Perceived pre-university stress	
1. Yes	107 (25.9)
2. No	306 (74.1)
Perceived health status	
1. Very Good	161 (39)
2. Good	228 (55.2)
3. Bad	24 (5.8)
Chronic disease	
1. Yes	75 (18.2)
2. No	338 (81.8)

University Related Characteristics:

Of 413 medical students, 53% (219) were from private universities and 47% (194) from public universities. Regarding year of study, 50.8% were first-year, 18.4% were third-year, and 30.8% were sixth-year students. Faculty selection was based on own interest in 74.8%, family interest in 23.2%, and other causes in 1.9%. In terms of academic performance, 42.1% were in high rank, 50.8% in average rank, and 7% in low rank. Satisfaction with examination results was reported by 75.1%, while 24.9% were unsatisfied. Examination outcomes showed 75.2% passed, 19.9% failed, 3.4% dropped, and 1.7% were absent. Regarding university facilities, 41.2% reported the presence of entertainment programs, and 44.1% were satisfied with the physical environment of the university. Further details are presented in Table 3.

Table 3. *University related characteristics (n=413)*

Variables	Frequency (%)
Type of university	
1. Public	194 (47)
2. Private	219 (53)
Year of university	
1. First Year	210 (50.8)
2. Third Year	76 (18.4)
3. Sixth Year	127 (30.8)
Faculty selection	
1. Self-Selection	309 (74.8)
2. Family Selection	96 (23.2)
3. Other	8 (1.9)
Class ranking	

1. High	174 (42.1)
2. Average	210 (50.8)
3. Low	29 (7)
Satisfaction from results of examinations	
1. Agree	310 (75.1)
2. Disagree	103 (24.9)
Previous class results	
1. Passed	310 (75.2)
2. Fail	82 (19.9)
3. Drop	14 (3.4)
4. Absent	7 (1.7)
Entertainment programs in university	
1. Yes	170 (41.2)
2. No	243 (58.8)
Physical environment in university	
1. Happy	182 (44.1)
2. Un Happy	231 (55.9)

Stress Level among Medical Students:

The prevalence of stress in our study was (7.7%) highly stressed and 41.4% were moderately stressed.

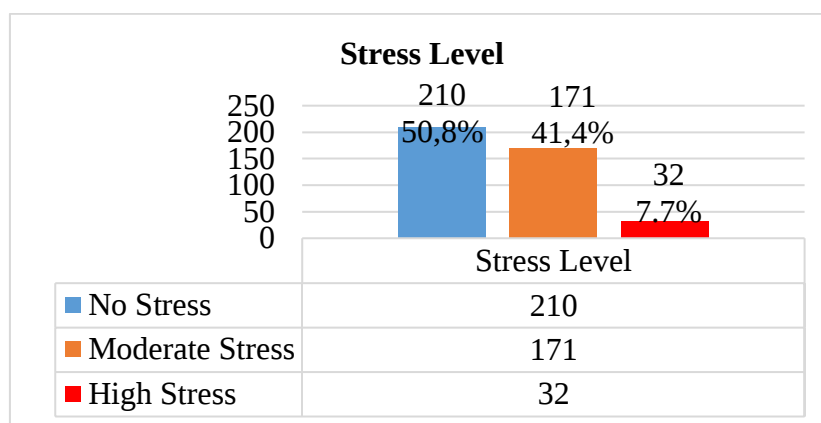


Figure 1. *Stress Level Among Medical Students*

Highly perceived Stress among public and private universities are the same (7.7%). Moderate stress in private university (46.5%) is high then public university (35.5%).

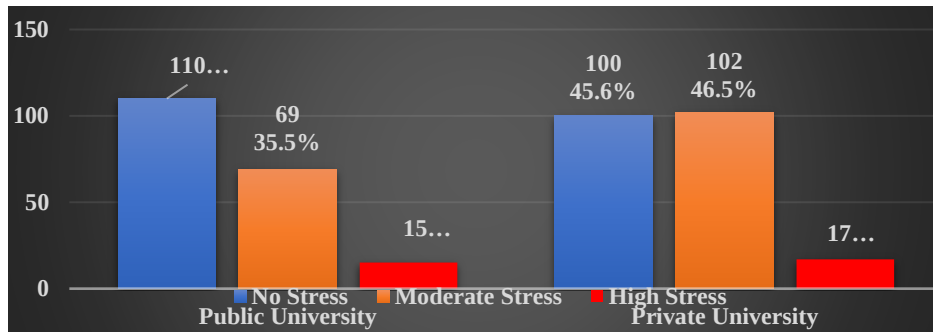


Figure 2. Stress Level Among Medical Students of public and Private Universities

Table 4: Stress associated factors among medical students of Kandahar University and Malalay University.

No	Variables	Categories	Stress		Odds Ratio 95% CI	P- Value
			Yes	No		
1	Age	18-20	57	35	1.95 (1.21-3.13)	0.005
		>20	146	92		
2	Marital status	Single	155	158	1,06 (0,67-1,66)	0.791
		Married	48	52		
3	Residency	Urban	135	133	1,14 (0,76-1,72)	0.500
		Rural	68	77		
4	Employment status	Employed	71	49	1,76 (1,14-2,17)	0.009
		Unemployed	132	161		
6	Daily physical activity	Yes	80	106	1,56 (1,06-2,31)	0.024
		No	123	104		
7	Addiction of cigarettes and snap	Yes	33	26	1,37 (0,78-2,39)	0.261
		No	170	184		
8	Breaking university regulations	Yes	11	10	1,14 (0,47-2,76)	0.761
		No	192	200		
9	Sleep quality	Good	165	203	1,67 (2,90-15,3)	0.000
		Poor	38	7		

10	Type of university	Private	119	100	1,55 (1.05-2.29) 1	0.025
		Public	84	110		
11	Ranking in the class	Low rank	23	6	4,34 (1,73-10,9) 1	0.001
		High or average rank	180	204		
12	Previous class results	Failed, absent and dropped	62	41	1,81 (1,15-2,85) 1	0.010
		Passed	141	169		
13	Entertainment programs in university	Yes	78	92	0,80 (0,54-1,18)	0.266
		No	125	118		

We carried out bivariate analysis and found that factors associated with stress included age of the student ($p=0.005$), employment status ($p=0.009$), daily physical activity ($p=0.024$), sleep quality ($p=0.000$), type of university ($p=0.025$) class rank ($p=0.001$) previous class results ($p=0.010$).

Discussion

The present study was performed to investigate the stress level among medical students among medical students of Kandahar University and Malalay University. Also, to find associated factors of stress in medical students in both higher educational centers. The response rate of this study was more than 98%, which is comparable or even better than response rates reported in similar studies. The results of this study showed that highly stress among public and private medical students is the same 7.7%, there is no significant difference between public and private medical students in high stress. From overall 413 medical students who were involved in this research 41.4% were moderately stressed. This level of stress is near to the level of medical students in Pakistan in which several studies have shown high prevalence of stress among medical students in Pakistan ranging from 44%, 45.5% to 60% and to as high as 74.2% (Rehmani et al., 2018). It is also, near to the result of research conducted in Bangladesh in which the overall prevalence of stress of the study population was 54% (Eva et al., (2015).

There was significant ($p = 0.025$) difference between public and private medical students. The Moderate stress in Malalay private university is (46.5%) of stress which is high then Kandahar public university (35.5%). This result is inconsistency with the study which was conducted between public and private medical schools in Bangladesh. The results of that research show that there were statistically significant ($p = 0.005$) differences in the level of stress between public (2.84 ± 0.59) and private (2.73 ± 0.57) medical school

students. This shows the opposite result in which medical students in public institution were reported to suffer more than private (Eva et al., (2015).

Our results showed that daily physical activity is an important factor in perceived stress in medical students and the stress level in those students who do not have physical activity is higher (123 frequency) than those who have physical activities (80 frequency) in daily life so its p-value is 0.024. Furthermore, the current study also shows that those participants who live in urban experience stress (135 frequency) which is more than those who live in rural area (68 frequency). Maybe the unemployment and high prices of daily needed things are the reasons for perceiving higher stress.

Poor sleep quality was significantly associated with the level of stress in medical students in this study ($P=0.000$). The result showed that participants with poor sleep quality has 6.67 times more stress than who have good quality of sleep. Similarly, another study in Riyadh, Saudi Arabia reported the prevalence of poor sleep quality of the participants was 77% ($p<0.001$). This association has been widely reported found that participants who had symptoms of insomnia were more stressed than non-insomnia's (Morin et.al., 2003).

In this study, we found that factors such as class ranks ($p=0.001$) and previous class results ($p=0.010$) were significantly associated with stress in our study participants. Pertinent literatures have indicated that poor performance and family pressure may play a significant role in individuals in the psychological health. Hence, alternative methods of making students that make them more productive are of paramount importance.

In addition to demographic factors, age, marital status, employment status and sleep quality were also important factors which were reported by the medical students which affected on the highness and lowness of students' stress level. In another study, educational factors, psycho-social, examination, performance in examination and academic curriculum were the most important sources of perceived stress. These findings are in compliance with other studies (Borjalilu et al., 2015). Lack of entertainment in the institution and loneliness were the most prevalent psycho-social related factors of perceived stress. It could be assumed that lack of social support as one of the ways to cope with stress (35) was the reason (Borjalilu et al., 2015).

A study from USA has recommended that teaching stress management and self-care skills to medical students may prove to be beneficial (Shah et al., 2010). Evidence of higher perceived stress and higher emotional distress however suggest that interventions oriented at strengthening self-regulation could have a potential benefit in the subgroup of medical students with high psychological impairment. So far, stress management in medical students

focuses primarily on relaxation and cognitive skills. Deckro et al. (2002) examined the effect of a 6-week mind/body intervention on college students' psychological distress, anxiety, and perception of stress, consisting of group-training sessions in the relaxation response and cognitive behavioral skills. Results indicate significant reductions in psychological distress, state anxiety and perceived stress.

US medical schools offer a student wellness program, according to the regulations of the Liaison Committee on Medical Education (LCME, 2014), in order to support medical students in coping with study related pressures. In the UK, the General Medical Council published a guidance on supporting students with mental health conditions (GMC, 2015) in order to support medical students in coping with stressful situations.

Despite performing the study, we had some limitations. The scope of the study was restricted to only in one province and in one private and one public university. Therefore, it is recommended to perform the study in all universities and include the students from all faculties that would result in a broader picture of the levels of perceived stress and emotional distress in medical students.

Conclusion

Both public and private medical faculties students of Kandahar University and Malalay University suffered from stress. Medical students in private institution were reported to suffer more than public. However, statistically significant difference was observed, the students who were aged >20, unemployed, had poor quality of sleep, were in low class ranking and those who had not having physical activities were having the high stress level. The results of the current study will serve as baseline data for further in-depth prospective state sponsored study. Considering the high prevalence of perceived stress in Afghan medical students and critical role of medical graduates in society's health, it is recommended to provide or promote the academic, psychological and health environment to reduce stress in students. Relevant authorities must take more initiatives and support research to develop proper policies for medical education and thus produce high-quality medical doctors who will serve Kandahar and rest of Afghanistan. Finally, it is important to emphasize that in addition to educating in a professional medical course it is also important to take into account the quality of life of the students during the years of medical training. Teaching stress management and self-care skills to medical students are essential.

Recommendations

1. Stress coping interventions: Universities should offer stress management workshops, courses, and counseling for undergraduate medical students, along with free professional psychological support services.
2. Lifestyle modifications: Encourage sports, physical activities, proper eating, and healthy sleep habits to reduce stress.
3. Examination preparation: Use regular assignments and mock exams to reduce test-related fear and anxiety.
4. Early integration of counseling: Include counseling as a mandatory part of the curriculum from the first year to enable early detection of psychological problems and reduce long-term social impairment.
5. Institutional curriculum changes: Modify the medical curriculum and examination schedules to reduce exposure to academic stressors.

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د کندهار پوهنتون او ملالی خصوصي پوهنتون د طب پوهنځي د محصلانو ترمنځ د فشار کچه

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لنډيز

د چاپیریالي غوښتنو او د یو فرد د وړتیاوو ترمنځ د توپیر احساس ته فشار ویل کېږي. څېړنو موندلې، چې د طب پوهنځي په محصلانو کې د فشار کچه د عامو خلکو په پرتله لوړه وي. د فشار لوړه کچه ممکن د دوی پر ادراکي فعالیتونو او زده کړو منفي اغیزه ولري. د طبي زده کړو پر مهال د فشار خپرېدل په ټوله نړۍ کې زیاتېدونکې دی. د دې څېړنې موخه د کندهار پوهنتون او ملالی خصوصي پوهنتون د طب پوهنځي محصلانو ترمنځ د فشار کچه معلومول او له فشار سره تړلي عوامل پېژندل دي. دا یوه کراس سیکشنل (مقطعي) څېړنه ده، چې د ۲۰۲۳ کال د جنوري څخه تر فبروري پورې د کندهار پوهنتون او ملالی پوهنتون د دوو طب پوهنځیو د ۴۱۳ محصلانو ترمنځ ترسره شوې ده. یادي پوهنځیاني په هدفې ډول ټاکل سوي او محصلان ئې د ساده ناپاکلي نمونه اخیستني له مخې غوره سوي دي. ډاټا ئې د یو پیژندل سوي او معیاري پوښتنلیک (د فشار درک کچې/ Perceived Stress Scale (PSS)) په واسطه راټوله شوې او تحلیل ئې د ټولنیزو علومو د احصائیوي پروګرام (SPSS) په مرسته سوی دی. هغو محصلانو چې په څېړنه کې د ګډون رضایت څرګند کړی وو، له هغوی وغوښتل سول، چې د خپل ځان په اړه معلومات چې د پوښتنلیک په څو برخو کې ځای ورکول سوی وو بشپړ کړي. لکه ټولنیز-ډیموګرافیک معلومات، د محصلانو د چلند او ژوند ځانګړتیاوي او په پوهنتون پورې اړوند ځانګړتیاوي. په دې څېړنه کې وموندل سول، چې په محصلانو کې تر ټولو لوړه د فشار خپرېدو کچه ۷،۷٪ ده او د متوسط فشار کچه (۴۱،۴٪) ده. د دولتي او خصوصي پوهنتونونو ترمنځ د لوړ فشار کچه یوشان (۷،۷٪) ده. د خصوصي پوهنتون متوسط فشار (۴۶،۵٪) د دولتي پوهنتون په پرتله چې (۳۵،۵٪) کېږي لوړ دی. موږ دوه متغیره تحلیل (bivariate analysis) ترسره کړ او وموندل سول چې د فشار سره په تړلو فکتورونو کې د محصلانو عمر ($p=0.005$)، دندې حالت ($p=0.009$)، ورځنۍ فزیکي فعالیت ($p=0.024$)، د خوب کیفیت ($p=0.000$)، د پوهنتون ډول ($p=0.025$)، ټولګې کې درجه ($p=0.001$)، او مخکیني ټولګې پایلې ($p=0.010$) شامل دي. نږدې ۵۰٪ د طب پوهنځي محصلانو فشار درک کړی وو. په کندهار کې د طب پوهنځي په محصلانو کې د فشار لوړه کچه ښيي چې پوهنتونونه باید د محصلانو د ښې روغتیا او زده کړو د ښه والي له پاره مشورتي خدمات، د فشار مدیریت پروګرامونه او اکاډمیک ملاتړ برابر کړي.

کلیدي کلیمې: اکاډمیک فعالیت، خپګان، د طب پوهنځي محصلان، د فشار کچه، پوهنتون

Effective Teaching Methods of Medical Education in Kandahar, Afghanistan

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Abstract

Incorporating modern methods of teaching has shown promising results in enhancing the learning experience in medical education. However, its applications are still limited in LMICs (Low and middle-income countries), including Afghanistan. This study aimed to describe current teaching methods in Kandahar's medical universities and to explore students' perspectives on their effectiveness. A cross-sectional study was carried out involving 325 medical students from academic years 2 to 7. A structured questionnaire assessed students' views on current teaching methods and their effectiveness. Descriptive statistical analysis was performed using SPSS version 26 to present the findings. Most students were aged 21-24 years and enrolled in public and private universities, with the majority in clinical years. More than half reported good academic performance and English proficiency. Students identified PowerPoint (PPT) and white/blackboard as the most commonly used strategies, but online resources were the least. Students rated methods such as IPD (Inpatient Department), OPD (Outpatient Department), and bedside teaching as the most effective. The main barriers to effective teaching reported by students were a lack of practical teaching and the absence of a proper curriculum. Traditional methods are still prevalent in medical faculties in Kandahar, which is a cause for concern and action. The findings suggest an urgent need for policymakers and academic institutions to prioritize the integration of modern, student-centered teaching approaches and strengthen clinical training opportunities. Investment in faculty training and educational resources is crucial to improve learning outcome

Keywords: Innovative Teaching Methods, Learning, Medical Students, Medical Education, Teaching Method

Introduction

Afghanistan's health system remains extremely weak, leaving millions without access to essential healthcare services, while decades of instability, compounded by severe droughts and natural disasters, have created a prolonged humanitarian crisis that has increased the risk of malnutrition and disease outbreaks (WHO, 2023). The Afghanistan Humanitarian Response Plan for 2023 reported that 28.8 million people require urgent aid, a sharp rise from 18.4 million in 2021. Despite ongoing efforts, underfunding threatens to leave 8 million people without critical health assistance, including trauma care and mental health services. Women and children face the greatest challenges, particularly due to restrictions on education and workforce participation. (WHO, 2023).

With 4.6 doctors, nurses, and midwives per 10,000 people, Afghanistan has the second-lowest density of health workers in the Eastern Mediterranean Region (EMR). This is significantly less than the critical shortage threshold of 23 healthcare professionals per 10,000 people. This number translates to 1.2 physicians, 2.1 nurses, and 1.3 midwives for every 10,000 individuals (Ministry of Public Health, 2016; Safi, 2018).

Medical education is key to healthcare development, helping future doctors understand their communities' health needs (Rao, 2020). Organized medical education in Afghanistan began with the founding of Kabul Medical University in 1932, and it has since undergone significant changes (Katawazai, 2021). To meet the growing need for doctors, several medical schools have opened, including in Kandahar. The 7-year program combines 6 years of classroom learning with one year of hospital training or a house job (Stanikzai, 2023). Over 40 medical schools in Afghanistan train students through theory and practice, graduating 4,000 to 5,000 doctors each year. However, security and economic challenges affect student enrollment and graduation, with no clear national data (Borda, 2020). To become licensed, all graduates must pass the exit exam by the Afghanistan Medical Council (AMC) under the Ministry of Public Health (Stanikzai, 2023).

Improvements in medical education worldwide include some learning methods (Case-based learning, evidence-based medicine, problem-based learning, Outcome-Based Education and Student-Centered Learning, e-learning, peer-assisted learning, observational learning, flipped classroom, and team-based learning) that are some of the modern learning methodologies (Challa, 2021). Little is known about how well these approaches work and how applicable they are in Kandahar. Conventional approaches frequently fail to foster students' critical thinking and problem-solving abilities, which are crucial for medical practitioners. Furthermore, little is known about how students see these instructional strategies, leaving a knowledge gap about enhancing instruction in this context.

Furthermore, medical education is the foundation of every effective health system, and the quality of teaching methods directly influences the competence of future doctors. Teaching strategies shape not only students' knowledge but also their

clinical skills and professional attitudes (Stanikzai, 2023). Throughout history, medical education has evolved in response to social needs and scientific progress. One of the earliest examples of structured medical education was the School of Jundishapur, founded in 271 AD in Iran. This institution included a hospital and a large library, and students were trained through teacher-centered instruction combined with hospital-based practical learning. They studied basic sciences, as well as Greek and Indian medical texts, and were guided to develop strong ethical values alongside medical knowledge (Daneshfard, 2022). This historical model highlights that both knowledge and ethics have long been central to medical training. This historical model highlights that both knowledge and ethics have long been central to medical training. Today, medical education continues to rely on a combination of traditional and modern teaching approaches, each contributing differently to student development (Kosha, 2020).

Traditional Teaching Methods

Traditional teaching methods have long been the main approach in medical education, particularly in low-resource settings. These methods are usually teacher-centered and focus more on delivering information than on encouraging active participation. Common examples include lecture-based teaching, textbook learning, and bedside teaching. In lecture-based sessions, instructors present theoretical content to large groups of students, often with limited interaction or discussion. Students mainly listen and take notes, which may limit critical thinking and deeper understanding (Daneshfard, 2022).

In clinical years, ward rounds and bedside teaching are important components of traditional education. During these sessions, students observe physicians as they take patient histories, perform examinations, and make clinical decisions. Although this approach provides valuable exposure to real patients, student participation may sometimes remain passive (Daneshfard, 2022).

In Afghanistan and similar contexts, traditional methods continue to dominate due to limited infrastructure, shortage of trained faculty, and lack of educational resources needed for innovative strategies (Stanikzai, 2023). As a result, despite some reform efforts, many medical institutions still rely heavily on conventional teaching styles. While these methods provide structured knowledge transfer, they may not fully develop problem-solving skills, independent learning, or clinical reasoning abilities required in modern practice.

Modern (Innovative) Teaching Methods

In contrast to traditional approaches, modern teaching methods focus on student-centered, interactive, and competency-based learning. These methods emphasize active participation and the use of technology to improve communication and engagement (Kosha, 2020; Sivarajah, 2019). The goal is not only to transmit knowledge but also to help students develop critical thinking, clinical reasoning,

teamwork, and leadership skills. Problem-Based Learning (PBL) and Case-Based Learning (CBL) are widely recognized innovative approaches. These strategies encourage students to analyze real or simulated clinical cases, identify learning issues, and search for solutions independently or in groups. Such methods enhance analytical thinking and clinical reasoning skills (Khan & Ali, 2020).

E-learning and flipped classrooms combine online educational materials with face-to-face discussions. In this model, students study theoretical content before class and use classroom time for discussion and problem-solving activities. This approach increases student engagement and promotes self-directed learning (Nichat et al., 2023). Team-Based Learning (TBL) and Peer-Assisted Learning further promote collaboration and communication skills. Through structured group activities, students learn to work as a team, take leadership roles, and support each other's learning (Lin et al., 2025). Other modern methodologies, such as Objective-Based Education (OBE) and Skills Center Learning (SCL), focus on measurable competencies and hands-on practice. Overall, updating teaching methods with greater emphasis on PBL and CBL is considered essential for improving the quality of medical education (Jin & Bridges, 2014; Sivarajah, 2019).

Teaching Methods in Afghanistan

Teaching methods in Afghanistan face several challenges, and research in this area remains limited. Afghanistan also struggles with broader challenges in health research and academic development (Stanikzai, 2023). Available studies suggest that many university instructors still rely mainly on traditional lecture-based teaching, where students listen and take notes with minimal interaction (Rahimi et al., 2026).

Some educators have attempted to introduce active learning strategies such as group discussions and student presentations. However, they encounter multiple barriers, including large class sizes, limited teaching materials, insufficient faculty training, and students' unfamiliarity with active learning approaches (Rahimi et al., 2026; Katawazai, 2021).

The COVID-19 pandemic further highlighted weaknesses in the educational system. Studies examining online education in Afghanistan found that many teachers and students had to use digital platforms for the first time. Although some instructors appreciated the flexibility of online learning, most faced serious difficulties due to poor internet connectivity, limited technological resources, and lack of proper training (Nemat et al., 2021; Haidari et al., 2021; Mohammadi et al., 2024). Additionally, private educational institutions experienced significant financial and academic losses during this period.

Finally, it is demonstrated that medical education has evolved from traditional teacher-centered approaches to more student-centered and competency-based methods. While traditional strategies such as lectures and bedside teaching remain important, especially in low-resource settings, modern methods like PBL, CBL, and technology-enhanced learning are increasingly recognized for improving critical

thinking and clinical skills. In Afghanistan, however, traditional teaching methods still dominate due to structural and resource limitations. Although some efforts toward innovation have been made, challenges such as limited infrastructure, insufficient training, and technological barriers continue to restrict progress. Therefore, strengthening faculty development, improving resources, and gradually integrating innovative teaching strategies are essential steps to enhance the quality of undergraduate medical education in Afghanistan.

Research Problem

Undergraduate medical education in Kandahar, Afghanistan, faces several challenges that negatively affect the quality of teaching and learning. Traditional lecture-based teaching and memorization remain the dominant instructional approaches, while modern educational strategies such as interactive learning, simulation-based education, and e-learning are rarely implemented. In addition, inadequate infrastructure, limited educational resources, overcrowded classrooms, and a shortage of trained faculty members further hinder the learning process for medical students (Stanikzai, 2023; Nichat et al., 2023).

Medical education plays a critical role in preparing future physicians to address the healthcare needs of the community. However, many medical students in Kandahar have limited opportunities for practical and hands-on clinical training, which may negatively influence their clinical competence, critical thinking, and overall educational experience (Daneshfard et al., 2022).

Despite the importance of effective teaching strategies in medical education, there is limited research exploring the effectiveness of current teaching methods and students' perceptions toward these approaches in Kandahar's medical schools. The lack of local evidence creates a gap in understanding how teaching practices can be improved to support better learning outcomes. Therefore, this study aims to explore medical students' perspectives regarding existing teaching methods and identify areas for improvement. The findings may contribute to enhancing the quality of undergraduate medical education and better preparing future doctors to meet the healthcare needs of the population.

Research Objectives

1. To describe the current teaching methods used in undergraduate medical education at medical universities in Kandahar.
2. To explore medical students' perspectives on the effectiveness of these teaching methods.

Research questions

1. What teaching methods are currently employed in undergraduate medical education at medical universities in Kandahar?
2. How do medical students perceive the effectiveness of these teaching methods?

Importance of research

Research on effective and innovative teaching methods is important for improving medical education in Kandahar. By understanding how students view current teaching methods, we can identify what works well and what needs improvement. Also, it will help us to develop better teaching strategies that can make learning more engaging and effective for students. It will also provide valuable insights into the challenges faced by learners, which can lead to solutions that improve the overall quality of medical education. Ultimately, this research aims to ensure that future doctors in Kandahar are better prepared to meet the healthcare needs of their communities.

Materials & method

Study design and setting

This study employed a descriptive cross-sectional design to explore the current teaching methods used in undergraduate medical education at medical universities in Kandahar and to explore medical students' perspectives on the effectiveness of these teaching methods. The research conducted at three universities in Kandahar province: Kandahar University, Malalay University, and Mirwais Neeka University.

A cross-sectional approach was appropriate for this study as it allows the collection of data from a specific population at a single point in time, enabling a comprehensive snapshot of current teaching practices, perceptions of effectiveness, and the use of innovative methods in the selected institutions. The study used a quantitative approach, and data were collected using structured self-administered questionnaires.

- 1- Kandahar Medical University, which is a governmental university and is located in Dorahi, Kandahar, Afghanistan. currently has (364) students who are studying medicine.
- 2- Malalay University, which is a private university, and is located in Aino Mena Kandahar, Afghanistan, 11th district. Currently has 660 students who are studying medicine.
- 3- Mirwais Neeka University, which is a private university, and is located in Shar-e-Naw of Kandahar, Afghanistan, currently has (643) students who are studying medicine.

This study was conducted in all three public and private universities offering undergraduate medical education in Kandahar, Afghanistan: Kandahar University, Malalay University, and Mirwais Neeka University. These universities are the only universities that provide medical education in Kandahar and represent a diverse academic environment, with varying capacities and teaching methodologies in medical education.

Study population

Undergraduate medical students enrolled in the selected faculties, specifically those who were in their study years (2nd to 7th year), as they had greater exposure to a variety

of teaching methods and are better positioned to evaluate their effectiveness from the three medical faculties.

Sample size

The sample size for this study was calculated using the single population proportion formula, which is appropriate for estimating a proportion in a cross-sectional study:

$$n = \frac{Z^2 \cdot p \cdot (1-p)}{d^2}$$

Where:

- n = required sample size
- Z = Z-value corresponding to 95% confidence level = 1.96
- p = assumed proportion of students who perceive current teaching methods as effective. Since no previous local study is available, a conservative estimate of 50% (0.5) used to maximize sample size.
- d = margin of error = 5% (0.05)

n=	$(1.96)^2 \cdot 0.5 \cdot (1-0.5)$	$3.8416 \cdot 0.25$	0.9604
324.16	$(0.05)^2$	0.0025	0.0025

Thus, the minimum required sample size was approximately 324 participants. To account for a potential non-response rate of 10%, the final sample size was 373 after clarifying the questionnaires, we removed 47 of them because they had errors (missing data, and inconsistent answers). A simple random sampling technique was used to ensure representation across the three selected universities. The total sample was proportionally allocated based on the number of students. This approach ensured that the study captures a balanced view of teaching methods as experienced by learners from diverse institutional contexts.

Note: In our study's questionnaires, we removed the gender because, due to a government-imposed ban, female students were prohibited from attending universities for an indefinite period, and this was limitation.

Sampling procedure

A simple random sampling technique was used to ensure representation across the three selected universities. The total sample was proportionally allocated based on the number of students in each university. Participants were selected randomly based on inclusion criteria (2nd year to 7th year students). This approach ensured that the study captures a balanced view of teaching methods as experienced by learners from diverse institutional contexts.

Study variables

Dependent variable

Perception of teaching methods

(This includes how students view the effectiveness, and usage of different teaching methods.)

Independent variables

Type of university (public or private)

This variable refers to the institutional category of the university where the participant was enrolled or employed. Public universities are government-funded institutions, (Kandahar university) while private universities are independently managed and funded, (Malalay and Mirwais Neeka university). This distinction may influence available resources, teaching practices, and institutional policies.

Academic year (for students)

This variable captured the year of study for student participants (from 2nd year to 6th year). It reflected their level of exposure to theoretical and clinical education, which shaped their opinions on teaching effectiveness.

Age

Age is a continuous variable indicating the respondent's age in years. It has correlation with adaptability to new methods or the level of experience.

Exposure to different teaching methods

This variable refers to the extent to which participants had engaged with various types of teaching methods such as Traditional (PPT lectures, bedside teaching, textbook learning, and group discussions), additionally modern such as (CBL, PBL, OBE, SCL, and online learning). This was measured through self-reported responses on the frequency and type of teaching methods experienced or used (Challa et al., 2021).

Inclusion criteria

1- Inclusion criteria for students were included active enrollment in the MD program in the above three universities, completed of at least one year of study, and had willingness to participate.

Exclusion criteria

- 1- Undergraduate medical students who were in 7th year of education because they were at their house job (practical training) and were not coming to the university.
- 2- Students who were on academic leave, internship outside the university, or did not actively engage in teaching and learning during the study period.
- 3- Individuals who refused to provide informed consent or declined to participate in the study for any reason.

Data collection methods

Data were collected using a structured questionnaire. All questions were developed based on the objectives of the survey, and the questionnaires were completed by students from the three medical universities. Data collection took place from June 1 to July 31, 2025, using paper-based questionnaires administered by experienced and trained investigators. Two data collectors were trained for each university on how to properly collect data from the students.

Data analysis

The collected data were entered, cleaned, and analyzed using (SPSS) version 26. Descriptive statistical methods were applied in the analysis. Descriptive statistics such as frequencies, percentages, means, and standard deviations used to summarize the demographic characteristics of respondents and the overall responses regarding teaching methods. Results were presented in the form of tables, charts, and graphs to enhance clarity and facilitate interpretation.

Ethical consideration

All ethical issues were considered, and the study was conducted after approval from the institutional review board and with university permission. Verbal consent from students of study subjects was obtained, and the objective of the study was explained to them. Privacy and confidentiality of collected information was ensured at all levels. The names and personal information of all the participants kept secret. There was no copy-paste information without the mention of the researcher's name.

Results

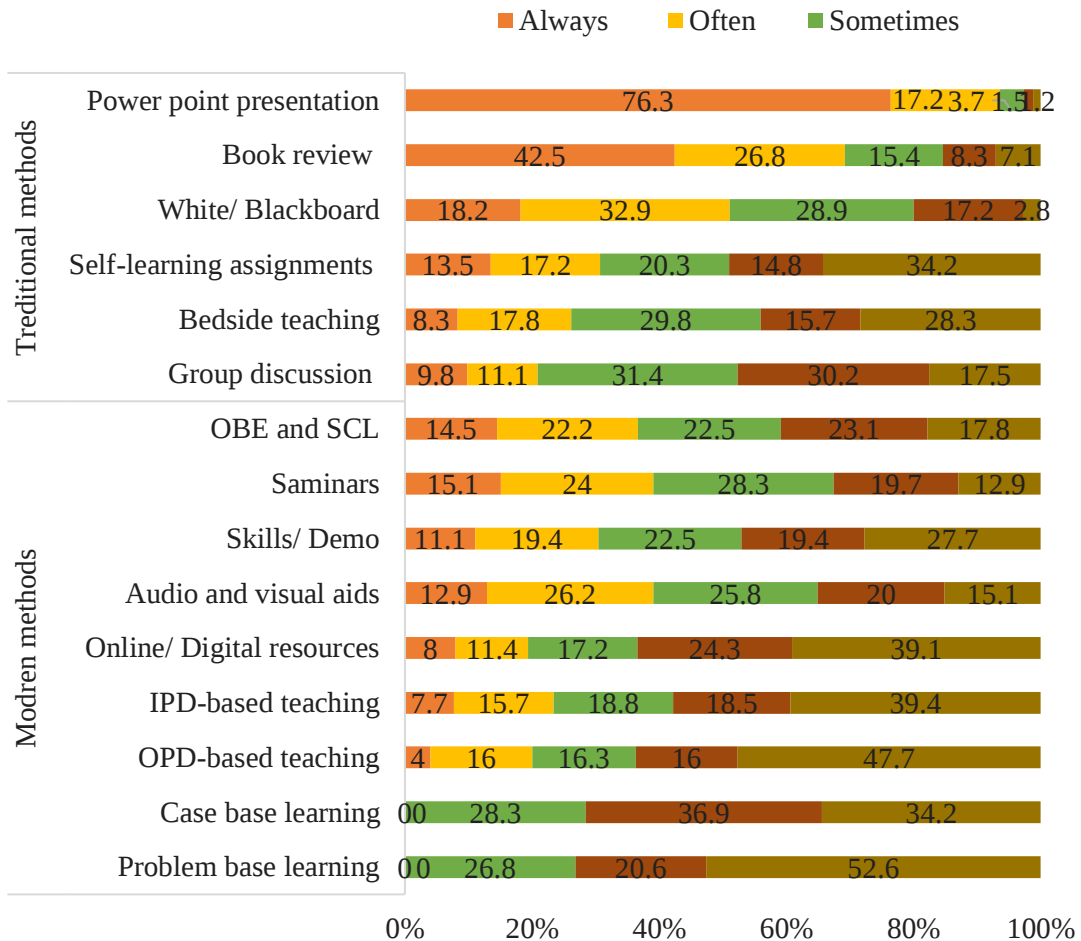
Majority of students were aged 21-23 years (59.7%), and most participants were from private Universities 249 (76.6%). More than half were from clinical years (52.3%). Regarding academic performance, most students 197 (60.6%) scores were between 61-79%. A high proportion reported English language self-assessment good 299 (92.0%), and more than half had access to computers (76.9%), internet (87.7%), and smartphones (87.1%).

Table 1. Characteristics of the medical students (n = 325)

Variables	Frequency (%)
Age (years)	
18–20	23 (7.1)
21–23	194 (59.7)
≥24	108 (33.2)
University	

Kandahar University	76 (23.4)		
Malalay University	146 (44.9)		
Merwais Neeka University	103 (31.7)		
Type of medical university			
Public	76 (23.4)		
Private	249 (76.6)		
Study period			
Para clinic	155 (47.7)		
Clinic	170 (52.3)		
Student's percentage			
<60	9 (2.8)		
61-79	197 (60.6)		
80-89	79 (24.3)		
>90	40 (12.3)		
English language self-assessment			
Good	299 (92.0)		
Not good	26 (8.0)		
Access to the computer, internet, smartphone			
Yes	250	285 (87.7)	283 (87.1)
No	(76.9)	40 (12.3)	42 (12.9)
	75 (23.1)		

Medical students selected power-point presentations (76.3% always), book review (42.5 always), and white/blackboard (18.2% always, 32.9% often) as the most frequently used teaching methods. On the other side, methods such as problem-based learning (52.6% never), OPD-based learning (47,7% never), IPD-based teaching (39.4% rarely), and online/digital resources (39.1% never) are less commonly implemented.

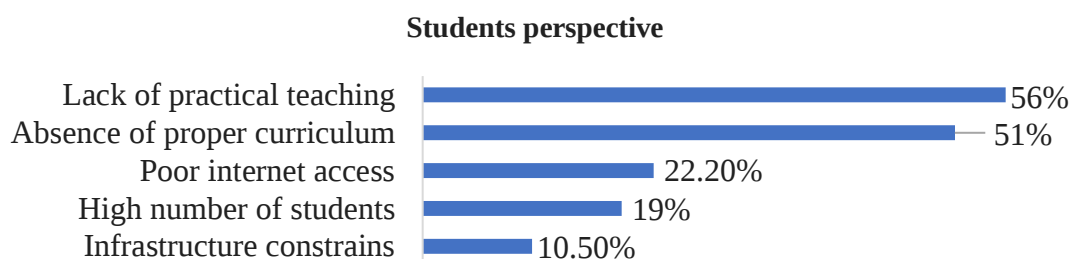


Medical students rated several teaching methods as highly effective. The most valued approaches were IPD-based teaching (56.9% very effective), OPD-based teaching (53.8%), and bedside teaching (52%), highlighting the importance of clinical exposure. Traditional methods such as whiteboard/blackboard (49.5%), Power-point presentations (45.2%), and group discussions (44%) also got nearly half percentage as very effective. The OBE and SCL (45.7%). In the other hand, methods like problem-based learning (28.9% very effective) and online/digital resources (26.2%) received lower effectiveness ratings.

Table 2. *Effectiveness of teaching methods (Students perspective) (100%) (N=325)*

Teaching Method	Very Effective	Effective	Neutral	Less Effective	Not Effective
IPD-based teaching	56.9	15.4	20.6	3.4	3.7
OPD-based teaching	53.8	19.4	18.2	3.7	4.9
Bedside teaching	52	20.6	19.7	4.6	3.1
White/ Blackboard	49.5	32.6	12	3.7	2.2
OBE and SCL	45.7	26.5	19.6	4.5	3.7
Power-point presentation	45.2	28.3	16.3	8.9	1.2
Group discussion	44	32	11.7	7.4	4.9
Audio and visual aids	43.4	27.7	17.5	7.1	4.3
Book review	40	31.1	16.9	8	4
Case base learning	39.7	23.7	17.2	12	7.4
Skills/ Demo	37.2	30.8	20.9	6.8	4.3
Seminars	34.2	29.5	20.6	9.8	5.8
Problem base learning	28.9	25.5	26.2	8.9	10.5
Online/ Digital resources	26.2	21.5	25.5	17.2	9.5
Self-learning assignments	31.1	25.8	21.5	13.8	7.7

Main barriers to effective teaching reported by students, which got more than half percentage, were lack of practical teaching (56%) and absence of a proper curriculum (51%). Other challenges included poor internet access (22.2%), high number of students (19%), and lack of facilities (10.5%), though these were less frequently reported.

**Fig 2.** *Barriers to effective teaching in the university*

Discussion

This was the first study that explored the effectiveness and use of teaching methods in undergraduate medical education in Kandahar, Afghanistan, from the perspectives

of students. In this study, Traditional methods such as PowerPoint presentations, whiteboard/blackboard teaching and book review remain the dominant teaching methods in both public and private universities. Students generally agreed that clinical exposure methods such as inpatient (IPD), outpatient (OPD), and bedside teaching are the most effective in improving learning outcomes, and beside that the usage of problem-based learning (PBL), case-based learning (CBL), and online learning are still very less.

The PowerPoint and whiteboard teaching methods were selected by majority of the students (76.3 and 42.5), this priority limited the access to modern educational facilities and training in teaching methodologies. These results are equal with the findings of Rahimi et al. (2026), who reported that Afghan universities largely rely on lecture-based methods due to a lack of resources and large class sizes. Similarly, to (Katawazai, 2021) and (Stanikzai, 2023) found that the majority of Afghan medical schools have not yet adopted outcome-based and student-centered learning approaches, even though the Ministry of Higher Education recently encouraged their implementation in the universities.

From the students' perspective, clinical exposure methods especially bedside and hospital-based learning rated as highly effective. This shows the importance of practical and hands on learning in developing clinical skills and professional confidence. Similar results reported in studies from Pakistan and Iran, where students preferred real patient based and interactive learning experiences over theoretical lectures (Raza et. al, 2019; Khan & Ali, 2020). Students appreciate practical teaching methods more valuable.

Another notable finding of this study is that students viewed methods such as online learning as less effective, which may be due to their limited exposure, poor implementation, possibly because of poor internet connectivity, or lack of digital literacy, and minimal institutional support. These observations are consistent with the studies conducted during and after the COVID-19 pandemic in Afghanistan, which highlighted weak internet access, lack of e-learning platforms, and poor teacher preparation as major obstacles (Nemat et al., 2021; Mohammadi et al., 2024).

This study also shows several barriers to effective teaching in medical education. Students reported the lack of practical learning opportunities and the absence of a well-structured curriculum as the most critical problems. These findings underline a gap between teaching expectations and student engagement. A similar pattern was reported by (Stanikzai, 2025), who noted that Afghan medical students often face overcrowded classrooms, limited mentorship, and a culture of passive learning that discourages active participation. To fulfil this gap, we should not only improved infrastructure but also a shift toward more interactive, student-centered learning environments (OBE and SCL).

The findings of this research are also consistent with international evidence. Globally, studies have demonstrated that innovative and active learning methods such

as PBL, CBL, simulation, and team-based learning can significantly improve students' problem solving, teamwork, and communication skills (Challa et al., 2021; Williams, 2020). However, successful implementation of these methods depends on teacher training, access to technology, and institutional obligation. In high resource countries, modern teaching is supported by digital platforms, simulation centers, and continuous faculty development. In contrast, universities in Afghanistan operate under severe financial and infrastructural limitations, which make it difficult to adopt similar innovations at scale.

Another important interpretation of the findings is the difference in exposure between public and private universities. While private institutions such as Malalay and Mirwais Neeka Universities tend to have better access to multimedia tools and smaller class sizes, public universities like Kandahar University often face higher student numbers and fewer teaching aids. By the way, the overall pattern of trust on traditional methods remains common across all universities, reflecting a broader systemic issue rather than individual university performance.

This study provides valuable image of the current state of medical education in Kandahar and underline the urgent need to modernize teaching practices. students showed awareness of the benefits of modern methods such as OBE and SCL, even though their use is limited. This indicates a positive attitude toward educational improvement and a willingness for gradual transition. Introducing faculty development workshops, promoting modernize teaching practices and student's center learning and improving access to digital resources could make a significant difference.

Conclusion

This study explored the effectiveness and use of innovative teaching methods in undergraduate medical education in Kandahar, Afghanistan, from students' perspectives. Most students reported that the traditional teaching methods, specifically PowerPoint presentations and whiteboard lectures, are the most commonly used teaching methods in both public and private universities in Kandahar Afghanistan. Although these methods are useful for theoretical knowledge, they do not help in promoting critical thinking, problem solving, and active student participation.

Students rated student center methods, clinical teaching methods (IPD, OPD) and bedside teaching the most effective teaching methods because they allow well learning, practical experience and real patient exposure. On the other hand, modern and innovative methods such as problem-based learning, case-based learning, and online learning are rarely used due to lack of facilities, limited digital access, and insufficient teacher training.

Generally, the results highlight a strong need to modernize medical education in Kandahar medical universities. Introducing more student-centered, interactive, and technology-supported teaching strategies could make learning more engaging and effective. Improving the quality of medical education in Kandahar medical

universities is essential to prepare future doctors who can respond effectively to Afghanistan's complex healthcare needs.

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لنډيز

د طب په زده کړو کې د نوي او معاصرو تدریسي طریقو کارول د زده کړو د ښه کېدو له پاره هیله څښونکي پایلي لرلای سي. په تیټ او منځني عاید لرونکو هېوادونو لکه افغانستان کې د دغو طریقو کارول لا هم ډېر محدود دي. د دې څېړنې موخه دا وه، چې د کندهار ولایت په طبي پوهنتونونو کې د اوسنیو عصري تدریسي میتودونو حالت معلوم کړل سي او د هغوی د اغېزمنتیا په اړه د محصلانو نظرونه وڅېړل سي. دا یوه مقطعي (Cross-sectional) څېړنه ده چې ۳۲۵ تنو د طب محصلانو ګډون پکښې کړی دی. د منظم پوښتنلیک له لارې د تدریس اوسنۍ طریقي او د محصلانو له نظره د هغوی د اغېزمنتیا په اړه ډاټا راټوله سوې ده. د څېړنې پایلي د تشریحي احصایې په کارولو سره وړاندې سوي دي. ډېری محصلانو د ۲۱-۲۴ کلونو ترمنځ عمر درلود او په دولتي او خصوصي پوهنتونو کې شامل ول، چې زیاتره یې د کلینیک د دوري محصلان ول. له نیایي څخه د زیاتو محصلانو اکاډمیک فعالیتونه او د انگلیسي ژبي سره بلدتیا ډېر ښه ارزول سوي دي. محصلانو پاورپوینټ (PPT) او سپینه تخته تر ټولو ډېر کارېدونکي تدریسي طریقي یادې کړي دي، مګر آنلاین سرچینې بیا تر ټولو لږ کارېدونکو طریقو په توګه انتخاب سوي دي. د بستر (IPD)، غیر بستر (OPD) او د بستر پر سر تدریس (Bedside teaching) طریقي تر ټولو د اغېزمنو میتودونو په توګه انتخاب سوي دي. د محصلانو له نظره د اغېزمن تدریس مهم ځنډونه د عملي تدریس او مناسب نصاب نشتون وو. دودیز یا پخواني تدریسي میتودونه لا هم د کندهار په طبي پوهنځیو کې زیات کارول کېږي، چې دا د اندېښنې وړ ده او جدي اقدام ته اړتیا لري. له موندنې دا پایله ترلاسه کېږي، چې پالیسي جوړونکي او پوهنتونونه دي په طبي زده کړو کې عصري او محصل محوره تدریسي طریقو ته لومړیتوب ورکړي او د عملي روزني فرصتونه بیاوړي کړي. د استادانو په روزنه او علمي سرچینو کې پانګونه د زده کړې د پایلو د ښه کېدو له پاره ډېره مهمه ده.

کلیدي کلمې: اغېزمني تدریسي طریقي، زده کړه، د طب محصلان، طبي تعلیم، تدریسي میتودونه



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