英語

I. 空欄に入る語句を(A)から(D)の中から一つ選びなさい。

問 1　A: Good morning, doctor. I am having severe pain in my stomach.

B: I see. How long have you been experiencing stomach pain?

A: It has been a couple of days now. First, I took some -------, but the pain in my stomach has been severe since the day before yesterday.

(A) medicine

(B) influenza

(C) bandage

(D) leg plaster

問 2　A: Why did you decide to join this university, Billy?

B: Well, for me either it was this university or the university near my home, and I simply wanted to get away from home. So, I joined this university.

A: I researched a bit, and I ------- that this university has everything to offer that I need.

(A) grabbed out

(B) traded out

(C) found out

(D) moved out

問 3　Kentaro decided to take the paramedic science with his girlfriend, but he was not ------- on it. He only took the course so that he could spend time with her.

(A) separately

(B) traditionally

(C) successfully

(D) seriously

問 4 New students must complete all introductory training by the end of ------- first year.

(A) themselves

(B) them

(C) their

(D) they

問 5 All of the train crash victims were ------- when they found.

(A) alive

(B) live

(C) lively

(D) vital

問 6 Paramedics at Japan Sport Science Hospital may work ------- the day or the evening shift.

(A) even

(B) from

(C) either

(D) when

問 7 All the emergency equipment must be ------- placed in designated locations.

(A) properly

(B) tightly

(C) smoothly

(D) shortly

問 8 To prevent thermal shock in winter, you should preheat the bathroom before you use. Open the bathtub lid to ------- heat to circulate.

(A) allow

(B) connect

(C) turn

(D) exchange

II. 以下の文を読んで問いに答えなさい。

Scientists have found that touching a specific part of the body can help reduce pain. However, we do not know much about how social touch (like holding hands) affects pain, or why it works. Our bodies influence how we think, feel, and interact with others. Some people think that touch can communicate emotions, like empathy, and that it matters who is touching us. Goldstein, Shamay-Tsoory, Yellinek, and Weissmen-Fogel (2016) wanted to see if social touch could reduce pain and if the toucher's empathy played a role. The researchers used heat to cause pain in women. At the same time, either their partners watched or touched their hands, a stranger touched their hands or no one interacted with them. These results showed that when partners touched the women's hands, they felt less pain compared to the other situations. Also, only when partners were touching:

a. There was a connection between how much pain the partners thought the woman were feeling and how much pain the women actually felt.
b. Men who were more empathetic had partners who felt less pain.

These findings show that social touch can be very important in reducing pain. They also suggest that empathy between romantic partners might explain why social touch helps reduce pain.

問1　この研究の主な目的は何か。

(A) 熱が痛みに与える影響を調査すること。

(B) パートナー間の関係を調べること。

(C) 見知らぬ人が痛みの認識に与える影響を研究すること。

(D) 社会的な触れ合いが痛みの軽減にどのように影響するかを探ること。

問2　研究者たちは、研究参加者に痛みを与えるためにどの方法を取ったか。

(A) 熱

(B) 冷水

(C) 電気ショック

(D) 圧力点

問3　本文によると、どの条件で女性の痛みが最も少なかったか。

(A) パートナーが彼女たちを見ている時。

(B) 見知らぬ人が彼女たちの手に触れた時。

(C) パートナーが彼女たちの手に触れた時。

(D) 誰も彼女たちに関わらなかった時。

問4　この研究では、痛みの軽減における共感の役割について何を示唆しているか。

(A) 共感は痛みの軽減に効果がない。

(B) より共感的な男性のパートナーはより少ない痛みを軽減した。

(C) 共感は見知らぬ人が痛みを感じている時に触れる時のみ重要である。

(D) より共感的な男性のパートナーはより多くの痛みを軽減した。

問5　以下のうち、この研究の結果によって**支持されていない**記述はどれか。

(A) 触れる人との関係が重要である。

(B) 社会的な触れ合いは効果的に痛みを軽減できる。

(C) パートナー間の共感が、触れ合いにより痛みを軽減できる。

(D) 見知らぬ人の触れ合いはパートナーの触れ合いよりも痛みの軽減に効果的である。

III. 以下の文を読んで問いに答えなさい。

Telemedicine is changing how emergency doctors help patients. It lets doctors treat and diagnose people from far away. This is really helpful in emergencies when every minute counts. A new app called the Emergency Talk Application (ETA) is making a big difference. This app connects emergency medical staff, like paramedics, with doctors who are not at the scene. It also helps them use local resources better. This means they can give patients the best care possible, even if the doctor is not there in person.

One important thing about ETA is that it keeps patient information safe. This is crucial because medical information is private. The app follows all the important rules about keeping patient data secure. This means patients can trust that their personal information will not be shared with anyone who should not see it.

In the study published in 2023, researchers, O'Sullivan and Schneider wanted to see how well ETA works in real emergencies. They tested it in many different emergency situations. These included heart and breathing problems, injuries from accidents, and brain problems like strokes. In the study, both paramedics and emergency doctors used the app. The doctors who helped from far away were called Tele-Emergency Doctors. They could see what was happening and give advice to the medical staff at the scene. The researchers looked at 141 emergency cases. In 129 of these cases, the medical team used ETA. This shows that the app was useful in most situations. The study found that each case took different amounts of time to handle, doctors spent different amounts of time helping each case, and the time it took to make a diagnosis was not the same. In addition, there was a strong connection between how long a case took and how long a doctor needed to help. This information can help emergency teams plan better and use their time more efficiently.

More and more emergency doctors are starting to use telemedicine. It is an exciting change, but it is not always easy. One big challenge is figuring out how to use new technology like ETA while still using the tools and methods that already work well. It is like trying to add new ingredients to a recipe without changing the taste too much.

Different medical problems need different approaches, even when using telemedicine. For example, helping someone with a heart attack might need different tools and methods

than helping someone with a broken bone. Understanding these differences is really important. It can help make emergency care better for everyone.

The findings from this study are valuable for two main groups of people. One is healthcare workers like doctors, nurses, and paramedics. They can use this information to improve how they use telemedicine in emergencies. They can learn what works best in different situations. The second group is lawmakers who make laws and rules about healthcare. They can use this information too. It can help them decide what kind of telemedicine should be used in different areas. For example, rural areas might need different telemedicine tools than big cities.

As telemedicine becomes more common in emergency care, it is important to keep studying how it works. This will help make sure that patients get the best care possible, no matter where they are or what kind of emergency they are facing.

In the future, apps like ETA might become even more advanced. They might use artificial intelligence to help doctors make faster decisions. Or they might connect with other medical devices to give doctors even more information about patients.

The most important thing is that telemedicine in emergency care is all about helping patients. By using technology wisely, emergency teams can save more lives and give better care to people when they need it most.

問1　Emergency Talk Application (ETA)の主な目的は何か。

(A) 患者の個人情報を保護する。

(B) 救急医療スタッフにアクセスでき、地域のリソースを活用する。

(C) 医療費を削減する。

(D) 新しい治療法を開発する。

問 2　研究者が 141 件中 129 件のケースで ETA が使用されたと発見したことの主な意義は何か。

（A）ETA の高い採用率は、ETA が緊急時の医療チームによって広く受け入れられ、活用されていた。

（B）高い使用率は ETA の広範的な技術的相互性を示している。

（C）全てのケースで ETA が使われていなかったことは、実際の緊急事態における実用的な適用可能性はあまり見込めない。

（D）ETA を使用した割合が高いことは、ETA が従来の緊急通信方法より優れていると証明することができる。

問 3　研究結果からどのような関連性が強くみられたか。

（A）症例の長さと医師の診断速度

（B）症例の長さと医師が必要とされた時間

（C）患者の年齢と回復速度

（D）医師の経験年数と診断精度

問 4　本文によると、ETA のような遠隔医療を救急医療に導入する際の主な課題は何か。

（A）緊急時のインターネット接続には制限がある。

（B）患者のプライバシー保護が守られない。

（C）高い技術力コストがかかるため医療費の増加が見込まれる。

（D）新技術の使用と既存のリソースの活用との両立をどうするか。

問 5　この研究の結果が特に誰にとって重要とされているか。

（A）患者

（B）製薬会社

（C）医療機器メーカー

（D）医療従事者と医療政策立案者

問 6　遠隔医療を使用する際の異なる医療緊急事態へのアプローチについて、本文は何を示しているか。

(A) 全ての緊急事態は同じ標準化された方法で対処できる。

(B) 遠隔医療はあらゆる種類の医療緊急事態に同様に効果的である。

(C) 新技術は人間の医学的判断を完全に置き換えることができる。

(D) 異なる医療問題には異なる遠隔アプローチが必要である。

問 7　本文によると、ETA のような遠隔医療アプリケーションの開発と実装が医療システムに与える長期的な影響として、最も適切なものはどれか。

(A) 医療の地理的格差の縮小と、緊急時の医療アクセスの平等化。

(B) 医療従事者の労働環境の改善と、遠隔での専門知識の活用促進。

(C) 患者データの集中管理による、個別化された予防医療の実現。

(D) 人工知能との統合による診断精度の向上と、医療過誤の減少。

Answers:

I.

1. (A)
2. (C)
3. (D)
4. (C)
5. (A)
6. (C)
7. (A)
8. (A)

II.

1. (D)
2. (A)
3. (C)
4. (D)
5. (D)

III.

1. (B)
2. (A)
3. (B)
4. (D)
5. (D)
6. (D)
7. (A)

出典

Ⅱ

Pavel Goldstein, Simone G. Shamay-Tsoory, Shahar Yellinek, Irit Weissman-Fogel (2016) Empathy Predicts an Experimental Pain Reduction During Touch.を参考に作成

Ⅲ

2023 年 8 月 16 日の Nature から。O'Sullivan and Schneider による、Comparing effects and application of telemedicine different specialties in emergency medicine using the Emergency Talk Application を引用。